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Wartime Prices

Part 1.—August 1939 to Pearl Harbor

By
John M. Blair and Melville J. Ulmer
under the direction of
Saul Nelson

Bulletin No. 749

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Letter of Transmittal

UNITED STATES DEPARTMENT OF LABOR,
BUREAU OF LABOR STATISTICS,
Washington, July 31, 1943.

The SECRETARY OF LABOR:

I have the honor to transmit herewith part 1 of a history of wartime prices. This volume includes a study of wholesale prices in primary markets in the United States during 28 months—from August 1939, when Poland was invaded, to December 1941, when Pearl Harbor was attacked. Much of the basic material for this study was obtained from data regularly collected by the Bureau's Wholesale Price Division. The study itself was under the general supervision of Aryness Joy Wickens, Chief of the Bureau's Prices and Cost of Living Branch. Individual credit for special assistance in the preparation of this bulletin is given in the preface.

A. F. HINRICHS, *Acting Commissioner.*

Hon. FRANCES PERKINS,
Secretary of Labor.

Preface

This bulletin presents the history of prices in primary markets in the United States during the critical 28 months which elapsed between the invasion of Poland at the end of August 1939 and the attack on Pearl Harbor on December 7, 1941. Events during this preparatory period largely set the stage for developments in the years to come. The relationships which emerged during these months between prices in different markets, and between prices and wages, profoundly affected market pressures and price trends during the period of our active belligerency. Moreover, the governmental controls over markets and prices, over the flow of commodities, over farm products and labor relations were gradually taking form during this preparatory Defense Period and the necessary administrative structures and mechanisms were being developed and tested.

In one respect above all, the record of this period affords an encouraging contrast with that of the years preceding our declaration of war upon Germany in 1917. The dangers of an inflationary increase in prices were recognized by the President and by responsible Government officials as soon as Germany marched into Poland, and the first steps to avert that danger were taken almost immediately. The beginnings of administrative machinery for price and market control were an integral part of the inauguration of the expanded defense program in June 1940. By December 1941, price control in one form or another had been extended to a large and strategic sector of the economy, and a statute to make these controls readily enforceable was well on its way to enactment. Moreover, the dangers inherent in runaway markets were widely appreciated by businessmen as well as by Government. It was this prompt awareness of the problem, more than any other single factor, which held the rise in prices in the United States within moderate bounds during the period covered in this bulletin, with pronounced advances largely confined to those areas in which higher prices could be regarded as having most economic justification.

This bulletin was prepared primarily from the wholesale price data regularly collected and published by the Wholesale Price Division of the Bureau of Labor Statistics, under the direction of Jesse M. Cutts. In addition, however, other information in the Bureau's files has been utilized, as, for example, data on retail prices and living costs, including special field surveys which the Bureau has conducted for the Office of Price Administration. Liberal use has also been made of numerous other sources of information, such as other Government agencies, and trade and technical publications.

This bulletin was started and much of the work done by John M. Blair, then chief of the General Economic Studies Section of the Bureau's Price Analysis Division. Upon Mr. Blair's departure from the Bureau, it was continued and brought to completion by Melville J. Ulmer, who succeeded Mr. Blair as chief of that section. Valuable assistance was rendered in the preparation of individual chapters, as

follows: Foods—Edmund DeS. Brunner, Jr.; Hides and leather products—Mary L. Lake; Textiles—Eunice B. Gettell and Laura Brown Webb; Chemicals and allied products—Mary L. Lake, and on the sections on fertilizers and coal-tar products, Jack J. Gottsegen; Housefurnishings—Eunice B. Gettell; Metals and metal products—Kenneth H. Hunter; Building materials—Joseph A. Kershaw and Clark B. Louden; Paper and pulp, rubber, and other commodities—Eunice B. Gettell and Katherine Lancaster. The work was conducted under the immediate supervision of Saul Nelson, co-chief of the Price Analysis Division, and under the general supervision of Aryness Joy Wickens, chief of the Prices and Cost of Living Branch of the Bureau of Labor Statistics.

A. F. HINRICHS, *Acting Commissioner.*

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United States Bureau of Labor Statistics

Wartime Prices

Part 1.—August 1939 to Pearl Harbor

Chapter I.—General Review

Prices in American commodity markets advanced substantially during the 28 months which elapsed between the outbreak of war in Europe on August 31, 1939, and the active entry of the United States into the conflict on December 7, 1941. During this "Defense Period" (the term used, for brevity, throughout this bulletin) wholesale prices, as measured by the Bureau of Labor Statistics index of prices of nearly 900 commodities in primary markets, rose nearly one-fourth,[1] while living costs of workers in large cities increased slightly more than 12 percent. Prices of many articles, of course, rose far more than this average, both at wholesale and at retail; this was particularly true of imported articles and of farm products and foods.

Causes of the Price Rise

The principal reasons for the advance in prices were those which ordinarily characterize a major war. Immediately following the outbreak of World War II, markets were upset by the disruption of international trade, as a result both of the blockade and of the diversion of materials and shipping to serve the needs of the belligerents. As the war spread and intensified, this disruption was steadily aggravated. The initiation of the National Defense Program in June 1940, followed by the adoption of the Lend-Lease Act in March 1941, progressively augmented the demand for both industrial and farm products. At the same time, the quickening pulse of business activity and the unprecedented stream of Government funds through trade channels into private hands brought with it a rapid expansion of consumer purchasing power and civilian demand for goods and services of all kinds. By the time of Pearl Harbor, defense expenditures totaled about 2 billion dollars monthly, and the Federal Reserve

[1] The "weekly" indexes of wholesale prices show an increase of 23.3 percent from the week ended August 26, 1939, just before the outbreak of war in Europe, to the week ended December 6, 1941, just before the attack on Pearl Harbor. The "monthly" indexes of wholesale prices show an increase of 24.8 percent from August 1939 to December 1941.

Board index of manufacturing production had reached 167 (seasonally adjusted), as compared with 106 in August 1939.

It was this tremendous physical pressure upon supply, far surpassing the limits of possible ready expansion of output, which constituted the fundamental basis underlying the price advance. Its effects were, of course, aggravated by numerous other factors. Among the most important of these were the waves of speculative buying which normally accompany any period of expanding business activity, and which are particularly violent during periods of war or preparation for war. At recurrent intervals during the Defense Period, prices for many commodities were bid up sharply by industrial buyers, household consumers, and outright speculators, who sought to anticipate the price increases, or commodity shortages, which they regarded as imminent. By reducing the supply of already scarce articles on the market, these speculative waves materially accelerated the advance.

Increases in cost as such did not play any very important part in the general price rise during the early stages of the war. It is true that direct costs rose substantially in many industries, principally because of higher prices for raw materials. Costs of farm products and imported materials rose most sharply, the latter reflecting increases not only in prices abroad but also in shipping and insurance rates. Labor costs per unit of output also advanced somewhat in a number of industries, especially toward the end of the Defense Period when spreading increases in wage rates could no longer be matched by greater labor efficiency. In general, however, these higher direct costs were more than offset by the sharp reduction in unit overhead which accompanied the expansion of productive activity. Of course, this situation could not last indefinitely, and by the time of Pearl Harbor costs in a growing range of industries had begun to move upward as capacity output was approached or reached. Nevertheless, viewing the period as a whole, little if any of the increase in prices of most manufactured products can be traced to higher costs.

In interpreting the actual behavior of American markets during the Defense Period, one very important circumstance must be borne in mind. The invasion of Poland occurred at a time when prices generally were at a very low level. The recovery from the 1937–38 "recession" had been limited. Prices of farm products and foods, in particular, were near the lowest levels they had reached in 5 years, despite intensive efforts of the Federal Government to raise these prices through the agricultural program. Consequently, a substantial general price advance would probably have accompanied a much smaller improvement in industrial activity and purchasing power than that which actually occurred.

Restraining Influences

In view of all these factors, the general increase in prices during the Defense Period must be regarded as having been quite moderate. In the comparable period following the outbreak of World War I, the rise in the average wholesale price level was nearly 45 percent, or almost twice as rapid as during the present conflict.

The principal reasons for this contrast appear to be twofold. In the first place, American industry in 1939 was far better prepared to meet the demands placed upon it for rearmament and for supplying the need of our future allies. We were able to adjust rapidly to the

loss of Central European imports and the reduced flow of other goods from abroad. There was ample unused capacity, particularly in the heavy industries, to permit a ready expansion of operations. More important was the fact that, as soon as war broke out in Europe, the dangers of an inflationary increase in prices were appreciated both by responsible businessmen and by Federal officials. Steps to avert such an increase were taken almost immediately by the Administration and received the cooperation of many industrial leaders. Machinery for stabilizing prices and for insuring the orderly flow of scarce commodities was inaugurated simultaneously with the beginnings of the expanded defense program in June 1940. By the time of Pearl Harbor, the administrative organizations necessary for implementing these controls were well established, with a substantial nucleus of trained personnel. As a result, industrial prices as a group remained well in hand during the period between August 1939 and December 1941, although prices of farm products, foods, textiles, and certain other commodities rose quite sharply from the low levels prevailing in the summer of 1939.

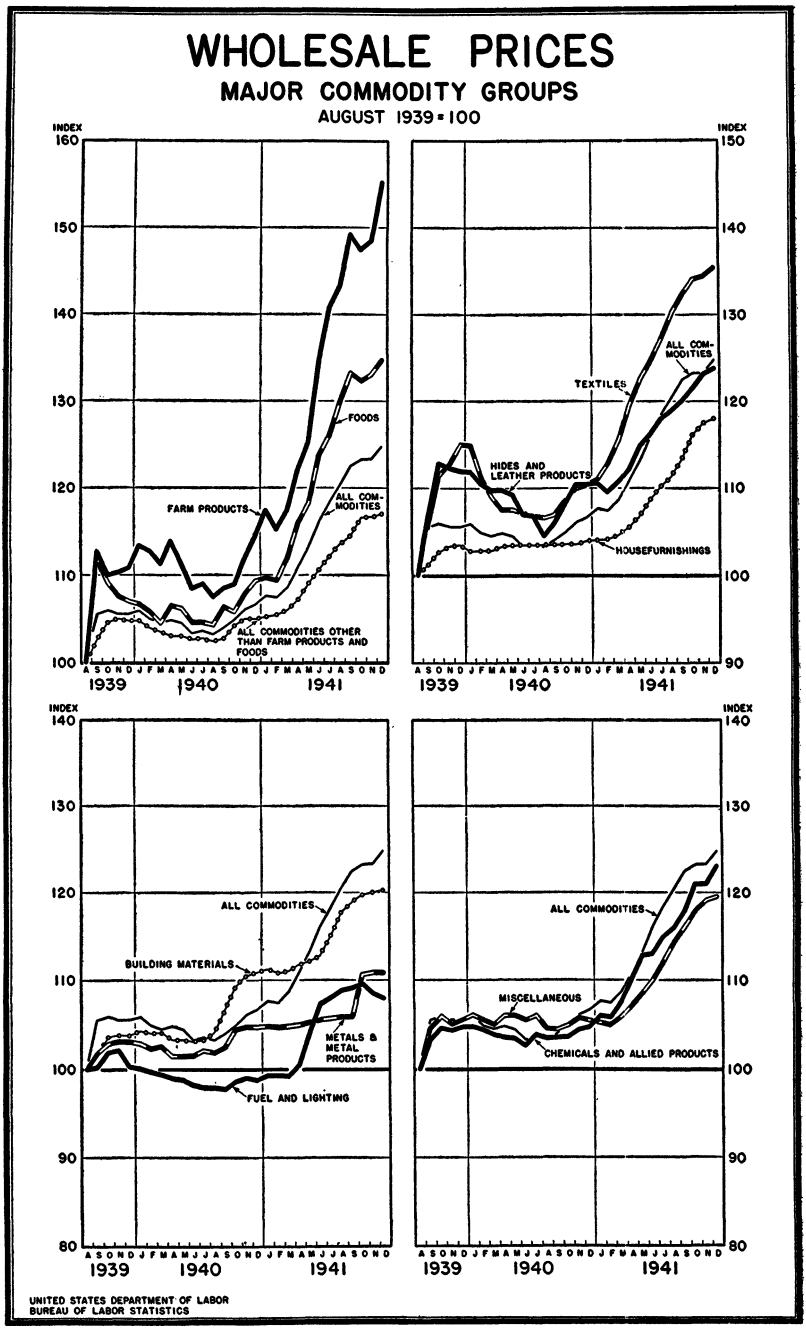
Phases of the Price Advance

The actual advance in prices during the Defense Period may be regarded as falling into three distinct phases, each somewhat different in character. The first of these phases, which began immediately after the outbreak of hostilities in Europe and continued until about the end of 1939, carried the average level of wholesale prices up by about 6 percent. In part this increase reflected the change in international commerce brought about directly by the war, such as the diversion of Indian burlap to the United Kingdom, or Spanish mercury to Germany. The entire Australian wool clip was purchased by Britain and shipments of botanical drugs and essential oils from Europe were cut off almost entirely.

While prices of a limited range of commodities were affected by specific situations of this kind, the principal stimulus to the advance in the fall of 1939 must be regarded as having been speculative. Consumers and industrial buyers rushed to lay in stocks of commodities whose scarcity they feared, or whose prices they expected to advance, with little regard for actual conditions. For example, there was a buying rush for sugar which ignored the fact that Cuba's loss of European markets actually increased the amount available for consumption in the United States.

By the end of the year, this speculative impulse had run its course and prices turned downward. They continued to decline until August 1940, at first, because of the relatively inactive appearance of the war and the failure of anticipated demand from the Allies to develop; and later, because of the effect of continued German victories upon business sentiment. By that time all but a small fraction of the 1939 advance had been lost.

The second phase of rising prices began in August 1940 and lasted until the beginning of 1941. It reflected primarily the actual pressures upon supplies of many kinds of raw materials and some manufacturing facilities created by the National Defense Program. Increases during this period were largely confined to markets affected immediately by rearmament needs. Thus, prices rose for scrap metals



needed for war production, for the grades of lumber used in building cantonments, and for the kinds of cotton and wool clothing needed to clothe the growing Army. By the end of 1940, the decline of the earlier half of the year had been retraced and the average level of wholesale prices was again at about its 1939 peak, or nearly 7 percent above its pre-war levels.

During the first 16 months—from August 1939 to January 1941—price increases were largely confined to primary markets, as there had been no opportunity for them to spread appreciably to retail markets. At the end of 1940 the average level of living costs was only 2 percent higher than in the summer of 1939.

The third phase of advancing prices began in the middle of February 1941 and continued through the remainder of the year, with only a brief interruption in September and October. This increase was very much broader in character and far sharper than either of the two which had preceded it. From the end of February to December 6 in 1941 the average level of wholesale prices rose almost 15 percent, as compared with 23 percent for the Defense Period as a whole. Retail prices and living costs also turned definitely upward in the spring of 1941 and continued to rise at the average rate of about 1 percent a month for the remainder of the year, until by December they were 12 percent above their August 1939 level.

The following statement shows the percentage changes in the cost of living, by item of expenditure, for specified months during the Defense Period.

	Percent of change		
	August 1939 to December 1941	*August 1939 to February 1941*	*February 1941 to December 1941*
All items	+12.1	+2.2	+9.6
Food	+21.0	+4.7	+15.5
Clothing	+14.5	+.1	+14.3
Rent	+3.7	+.8	+2.9
Fuel, electricity, and ice	+6.8	+3.2	+3.5
Housefurnishings	+16.1	−.2	+16.3
Miscellaneous	+7.3	+1.5	+5.7

Almost every factor which ordinarily contributes to rising markets played its role in this broad advance. The spread of hostilities in Europe and the shortage and diversion of shipping progressively reduced imports and increased the prices of those goods which were imported. The rupture of trade relations with Japan at the end of July cut off the supply of silk over night. The American Defense Program, swelled by the enactment of the Lend-Lease Act in March, called for a constantly increasing volume of metals, chemicals, and textiles, as well as of certain foodstuffs, such as pork products and cottonseed oil. The diversion of facilities to war production, while at first slow in making itself felt, finally caused the output of consumer durable goods to turn down definitely in September, a decline which rapidly gathered momentum as the Office of Production Management placed increasing restrictions upon the manufacture of such articles as refrigerators and automobiles.

In the meantime, growing Government expenditures and the increasing flow of money into the hands of consumers greatly swelled purchasing power. Workers shifted from the lower-paid light industries to the better-paid war plants. Hours were lengthened and

overtime was paid. A series of wage increases started in March 1941, which by the end of the year had affected the great bulk of American industries. All these developments meant much larger pay envelopes.

The same wage increases which contributed to the rise in purchasing power also exerted substantial upward pressure upon costs in many industries. By the latter part of 1941, a large number of plants were operating at close to capacity and the rise in wages and in labor costs could no longer be offset by economies attendant upon expanding production.

Finally, many less tangible factors contributed to accelerate the rise in prices. Speculators entered the market in force early in 1941 and bought heavily. Industrial buyers laid in large inventories of raw materials in order to protect themselves against anticipated price advances or shortages; distributors bought heavy stocks of merchandise for similar reasons. Consumers laid in stocks of all kinds of durable and semidurable goods during the summer and early fall. Some manufacturers took advantage of the situation to raise prices rapidly, as in the case of cotton textiles. The beginnings of black markets developed, as, for example, in the case of scrap metals and extremely high resale prices for a number of chemicals which were short in supply.

Growth of the Price-Control Program

There is little doubt that the price increases which occurred during the Defense Period would have been much greater had it not been for the early initiation of a control program. Price control during World War II may be said to have had its inception when, shortly after the invasion of Poland, President Roosevelt wrote to Senator O'Mahoney, Chairman of the Temporary National Economic Committee, asking that his staff "keep an eye" upon prices and report upon unwarranted increases.[2] While this step carried no sanction except publicity, the knowledge that the Government was keeping an eye upon prices unquestionably had its effect in tempering the speculative upturn of 1939.

With the initiation of the Defense Program and the appointment of the Advisory Commission to the Council of National Defense in June 1940, the foundation of more formal price control was laid. As Defense Commissioner in charge of price stabilization, Leon Henderson was in a position to take immediate steps to hold down prices of key commodities such as metals. Consultation with industry and informal agreements were successful in holding down prices of copper, zinc, steel, and similar metals as early as the fall of 1940. In April 1941, as the price rise continued, Mr. Henderson was given more formal authorization from the President, first, as Administrator of the Office of Price Administration and Civilian Supply, and later, as Administrator of the Office of Price Administration. While this authorization did not carry with it any specific statutory authority, the Office of Price Administration and Civilian Supply began the issuance of formal price ceilings, at the same time continuing to utilize less formal procedure where feasible. In accordance with the theory of selective price control, which was followed throughout the Defense Period

[2] Hearings, Temporary National Economic Committee, Vol. 2 (p. 11151).

these ceilings were imposed principally upon basic industrial commodities, such as cotton cloth, steel, lumber, and the like. It was hoped that, by holding down prices of these basic materials, sufficient restraint could be exercised upon costs at later levels of production and distribution to keep the general advance in check.

These measures for controlling prices were not uniformly effective. In some fields, particularly the basic primary metals, they enlisted the cooperation of producers and were generally observed. In other areas, such as textiles, there was so much resistance to the orders initially issued that their substantial modification became necessary. In still other cases the orders were simply ignored; thus, the efforts to forestall price increases for automobiles in the summer of 1941 had to be abandoned when a leading producer openly refused to comply.

To provide the firm statutory base which appeared necessary, the Emergency Price Control Act was introduced into Congress in August 1941. However, the prolonged hearings on this bill delayed final enactment into law until about 2 months after Pearl Harbor.

Despite the absence of direct statutory authority for price control up to Pearl Harbor, the measures taken clearly succeeded in retarding the price advance, particularly in the industrial sector of the economy. Thus, prices of metals and metal products rose not much more than 10 percent between August 1939 and December 1941, and the increase during 1941 was limited to about 5 percent. Most of this rise, moreover, resulted from the advance of more than 20 percent in the price of motor vehicles, which the Price Administrator found himself powerless to prevent. In contrast, list prices of iron and steel, where controls were effective and were complied with, increased only 2 percent during the entire Defense Period. Quoted prices of chemicals rose 16 percent between August 26, 1939, and December 6, 1941, and only 3 percent from February 22, 1941, until the time of Pearl Harbor.

Prices of other commodities which for one reason or another were not controlled successfully, rose much more sharply than the average for wholesale markets generally. Of greatest consequence was the fact that prices of farm products rose almost 50 percent during the Defense Period and almost 30 percent in the 10 months preceding Pearl Harbor. This advance in farm products must be appraised in the light of their abnormally low level during the summer preceding the invasion of Poland. Moreover, farm prices are normally much more responsive to changes in economic conditions than are industrial prices. No attempt was made to impose any broad control upon prices of farm products during the Defense Period, partly because of the belief that some increase from their depressed pre-war levels was warranted, and partly because of the political and administrative difficulties involved. By September 1941, the increase had been sufficient to restore the "parity ratio" to 100 for the first time in more than 2 decades, that is, to raise the ratio between prices received by farmers and those paid by farmers to the favorable levels which had prevailed during the years 1909 to 1914.

The sharp increase in farm prices was necessarily reflected in substantial advances in prices of manufactured articles derived from farm products, particularly foods and textile products. Average wholesale prices for both these groups rose about a third in the Defense Period and about 20 percent in the last 10 months of 1941. Prior to Pearl Harbor there was little effort to control food prices, and ceilings placed

upon cotton yarn and cloth had to be modified upwards under pressure from the industry.

In general, therefore, price increases during the Defense Period were most pronounced for imported goods and for farm products and goods produced from farm products, while the least marked advances were for the products of heavy industry. As compared to the average increase of over 23 percent for all commodities at wholesale, the rise for all commodities other than farm products and foods was only 16½ percent.

Comparison Between the Two World Wars

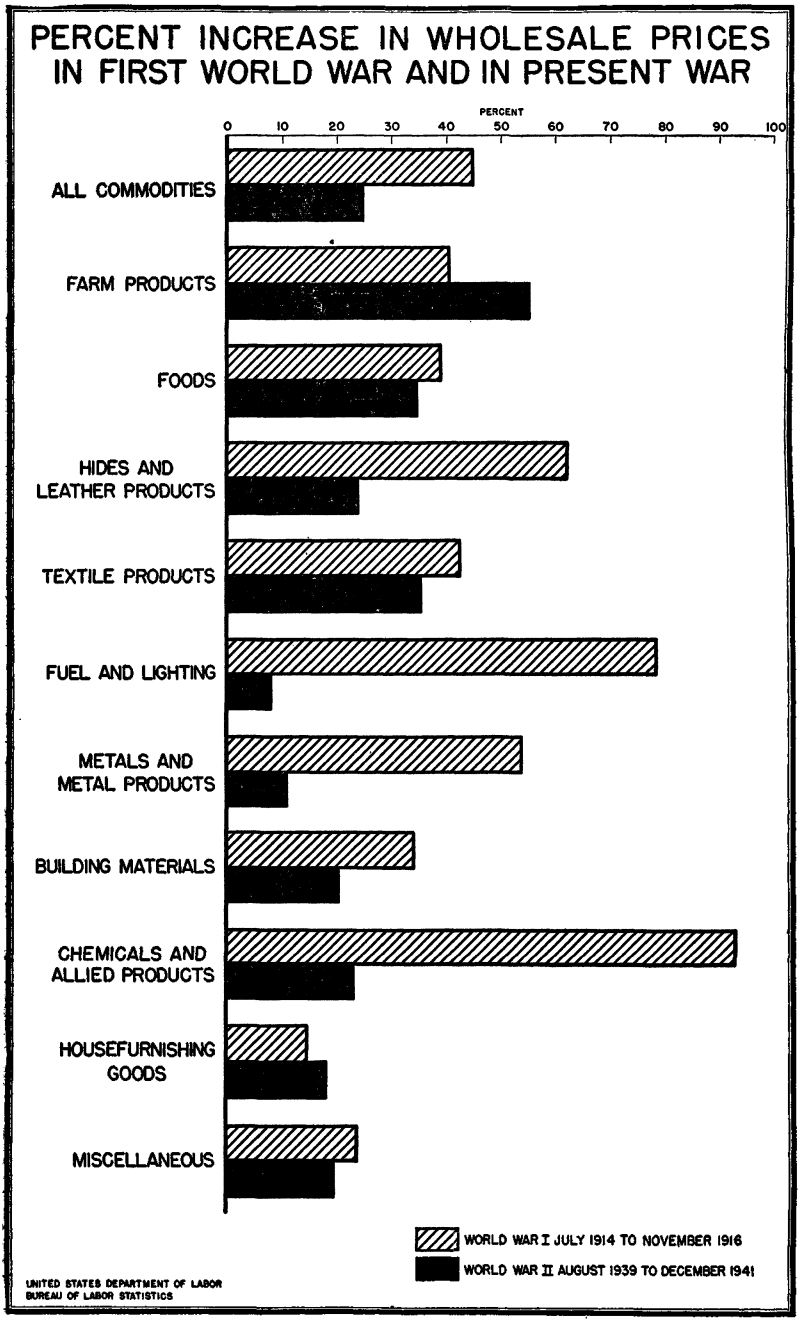
The contrast between the behavior of prices in the Defense Period and the corresponding period of World War I is very striking. In the first place, as already stated, the actual extent of the increase was considerably narrower during the second conflict than the first. More important, however, was the difference in the sectors of the economy where the advance was most pronounced. The stability of durable goods prices in World War II was at variance with the very sharp advances for these prices 25 years earlier. Thus, prices of metals and metal products rose 54 percent from July 1914 to November 1916, as compared with 11 percent from August 1939 to December 1941. List prices of iron and steel rose 103 percent in the first 28 months of World War I and only 2 percent in the same interval of World War II. For nonferrous metals the increase in the earlier period was 114 percent, and in the later period, 14 percent; for building materials, the increases were 34 percent and 20 percent; for chemicals and allied products, 93 percent and 23 percent; and for fertilizer materials, 176 percent and 19 percent.[3] On the other hand, the increase for farm products was somewhat more moderate in the first World War than in the second, while the advances for textile products and for foods were very nearly the same in both periods.

Percentage increases in wholesale prices, by commodity group, are given in the following statement for the Defense Period in World War II and for the comparable period in World War I:

	Percent of increase	
	July 1914 to November 1916	*Aug. 1939 to December 1941*
All commodities	44. 7	24. 8
Farm products	40. 5	55. 2
Foods	39. 0	34. 7
Hides and leather products	62. 1	23. 8
Textile products	42. 5	35. 4
Fuel and lighting	78. 3	8. 0
Metals and metal products	53. 7	10. 8
Building materials	34. 0	20. 3
Chemicals and allied products	92. 6	23. 0
Housefurnishing goods	14. 5	18. 1
Miscellaneous	23. 6	19. 5

The principal reasons for this difference in behavior have already been touched upon. The change in industrial potential may be illustrated by the fact that when World War I started, the United States had only a limited chemical industry and was acutely short of fertilizer materials such as potash. However, by 1939, the country

[3] Increases were computed between the months August 1939 and December 1941 in World War II and between July 1914 and November 1916 in World War I.



had a huge chemicals industry and was an exporter of fertilizer. Western Hemisphere sources of many nonferrous metals, which were developed during World War I, averted serious shortages in World War II.

While physical differences of this kind were unquestionably significant, it is probable that the most important reason for the contrast in price behavior can be traced to the early development of the control mechanism in World War II and the willingness of many basic industries to cooperate in the stabilization program. Prices were not controlled at all in the first world conflict until a considerable time after our entrance, and even then efforts at stabilization were subjected to prolonged resistance and objection by many industries, notably the steel industry. In the present war, on the other hand, the mechanism for stabilization had been developed to a high degree by the time of Pearl Harbor and the statute giving it firm and specific authority was already on its way to enactment. There was a very marked improvement, too, in methods of Government procurement and particularly in the coordination of Allied purchases, so as to avoid the competitive bidding up of prices which had been a serious disturbing factor 25 years earlier.

TABLE 1.—*Percentage Changes in Wholesale Prices, Specified Periods, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Commodity group	Percent of change from week ended—				
	Aug. 26, 1939, to Dec. 6, 1941	Aug. 26, 1939, to Dec. 30, 1939	Dec. 30, 1939, to Aug. 10, 1940	Aug. 10, 1940, to Dec. 28, 1940	Feb. 22, 1941, to Dec. 6, 1941
All commodities	+23.3	+6.1	−3.1	+3.9	+14.7
Farm products	+48.6	+12.1	−4.8	+7.2	+29.3
Grains	+68.2	+40.9	−17.4	+9.8	+38.5
Livestock and poultry	+38.1	+.6	+4.0	+9.4	+8.6
Other farm products	+50.6	+12.7	−6.0	+5.1	+42.8
Foods	+33.0	+7.8	−3.6	+5.5	+21.2
Dairy products	+40.6	+18.4	−7.8	+11.5	+20.0
Cereal products	+21.0	+13.8	−7.0	−2.2	+18.2
Fruits and vegetables	+31.1	+4.6	+7.2	−6.3	+28.4
Meats	+22.6	−5.4	+4.3	+6.9	+7.1
Other foods	+48.8	+13.4	−11.1	+10.6	+39.7
Hides and leather	+24.6	+12.4	−6.0	+4.9	+13.2
Shoes	+19.7	+6.5	−.4	+.3	+12.4
Hides and skins	+54.9	+40.2	−24.8	+25.4	+23.9
Leather	+20.5	+13.9	−6.9	+5.8	+7.1
Other leather products	+17.7	+4.6	−.3	.0	+12.9
Textile products	+34.6	+16.6	−8.7	+3.3	+20.0
Clothing	+20.2	+3.3	+1.3	+.2	+12.8
Cotton goods	+61.3	+15.4	−9.5	+9.3	+36.7
Hosiery and underwear	+8.6	+10.2	−9.4	−2.2	+10.9
Rayon	(1)	(1)	(1)	.0	+2.7
Silk	(1)	(1)	(1)	−1.2	+19.8
Woolen and worsted	+36.6	+19.6	−7.1	+6.3	+15.2
Other textile products	+50.5	+29.5	−12.6	+3.4	+24.2
Fuel and lighting	+8.2	+.3	−2.5	+1.8	+8.9
Anthracite	+18.1	+5.9	+2.7	+2.9	+5.2
Bituminous	+12.7	+1.8	−1.7	+4.4	+7.9
Coke	+17.2	+5.5	−.3	+3.8	+7.3
Electricity	−17.3	−6.1	−2.0	−.5	−9.4
Gas	−11.3	−5.1	+3.6	−5.7	+.9
Petroleum products	+16.1	+.6	−5.8	+1.6	+20.5

[1] Comparable figures not available.

TABLE 1.—*Percentage Changes in Wholesale Prices, Specified Periods, August 1939–December 1941*—Continued

Commodity group	Percent of change from week ended—				
	Aug. 26, 1939, to Dec. 6, 1941	Aug. 26, 1939, to Dec. 30, 1939	Dec. 30, 1939, to Aug. 10, 1940	Aug. 10, 1940, to Dec. 28, 1940	Feb. 22, 1941, to Dec. 6, 1941
Metals and metal products	+10.5	+2.8	−1.2	+3.1	+5.5
Farm equipment	+.5	−.2	−1.0	+.2	+1.4
Iron and steel	+2.0	+1.1	−1.6	+1.2	+1.5
Motor vehicles	+20.8	+1.8	+.1	+5.8	+12.0
Nonferrous metals	+13.4	+12.9	−4.3	+3.1	+.8
Plumbing and heating	+11.0	.0	+1.4	.0	+6.9
Building materials	+19.7	+3.8	−.3	+7.3	+8.2
Brick and tile	+6.6	+1.1	−1.5	+1.1	+5.8
Cement	+2.3	.0	−.8	+.2	+2.9
Lumber	+39.5	+6.0	−.3	+24.3	+9.5
Paint and paint materials	+16.7	+5.1	−2.2	+1.3	+10.4
Plumbing and heating	+11.0	.0	+1.4	.0	+6.9
Structural steel	.0	.0	.0	.0	.0
Other building materials	+14.9	+3.8	+.8	+1.4	+8.5
Chemicals and allied products	+20.9	+5.3	−1.8	+1.4	+14.3
Chemicals	+15.9	+5.2	+5.9	+.7	+2.9
Drugs and pharmaceuticals	+69.0	+5.9	+24.5	+.3	+26.7
Fertilizer materials	+15.5	+11.0	−8.8	+3.1	+10.5
Mixed fertilizers	+8.2	+1.1	−2.2	+2.1	+7.9
Oils and fats	(1)	(1)	(1)	+7.0	+98.5
Housefurnishing goods	+17.1	+3.6	−.1	+.2	+13.0
Furnishings	+16.9	+4.9	+.4	+.3	+10.5
Furniture	+17.6	+1.7	−.7	+.1	+16.4
Miscellaneous	+19.3	+6.3	−1.3	+.5	+13.7
Automobile tires and tubes	+11.5	−8.2	+4.7	+.2	+15.9
Cattle feed	+75.6	+37.2	−16.0	+13.4	+52.0
Paper and pulp	+28.2	+12.3	+4.2	−.4	+9.8
Rubber, crude	+32.3	+21.7	−.5	+.7	+7.4
Other miscellaneous	+13.5	+7.0	−4.7	−.1	+11.6
Special groups:					
Raw materials	+36.0	+11.2	−5.7	+5.9	+22.1
Semimanufactured articles	+20.6	+12.2	−7.5	+4.7	+10.2
Finished products	+18.4	+3.4	−1.5	+3.0	+12.2
All commodities other than farm products	+19.0	+5.1	−2.8	+3.3	+12.1
All commodities other than farm products and foods	+16.5	+5.0	−2.6	+2.8	+10.9

[1] Comparable figures not available.

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Chapter II.—Foods

Summary

Prices of farm products during the Defense Period rose more than did those of any of the other major groups in the wholesale-price index. The over-all increase between August 1939 and December 1941 amounted to 55 percent, as compared to an increase in the all-commodity index of 25 percent. In keeping with the generally sensitive behavior of farm prices, this upward movement was interrupted by periods of price stability and decline.

The marked increase in farm prices started from a level in August 1939 which was comparatively low, relative both to the past levels of farm prices and to the prices of other types of products. Farm prices had remained at depressed levels during most of the thirties, a sharp upturn early in 1937 having been reversed by the "recession" beginning later that year. At the outbreak of the war, prices of farm products had recovered only slightly from their depressed levels of 1938 and were 35 percent below their peak of early 1937.

With the invasion of Poland in August 1939, farm prices shot up 13 percent between August and September, partly as a result of speculative activity. During the rest of the year, however, they remained almost completely stable at a slightly lower level of 10 to 11 percent above the August 1939 average.

This slight loss was regained by a minor advance during the first part of 1940, but in March, as the European front remained quiet and domestic economic activity slackened, farm prices began an extended decline. In the summer of 1940, the downward movement became more pronounced as important European markets were sharply cut off and as speculative sentiment was adversely affected by the Nazi conquests. Thus, between January and August of 1940, farm prices fell from 13 percent to only 8 percent above the pre-war level.

However, as the National Defense Program got under way in the fall of the year, bringing with it a substantial increase in employment and purchasing power, the trend was once more reversed, farm prices rising by December to a level 14 percent above the pre-war position. This was followed, after a brief period of indecisive fluctuation in January and February 1941, by one of the most rapid increases in the history of price movements. Between February and December, farm prices rose from 15 to 55 percent above the August 1939 level, or an average increase of slightly more than 3 percent a month.

The trend of food prices at wholesale paralleled almost exactly the movement of farm prices, being only slightly less pronounced in the extent of its rise. At the outbreak of the war, speculative activity carried food prices upward 12 percent, only 1 percent less than the corresponding increase in farm prices. The price decline in the first half of 1940 brought food prices by August down to a point 4 percent above their pre-war level. In the last 4 months of 1940 and the first 2 months of 1941 prices of foods moved irregularly upward. This was followed, as in the case of farm products, by a rapid and sustained increase beginning in March. Between February

and December 1941, food prices rose from 9 to 35 percent above the pre-war level, an average increase of 2.2 percent a month.

This broad advance in farm and food prices was shared by all the major types of raw and processed agricultural products. The price increases between August 1939 and December 1941 in these groups of commodities were as follows:

Farm products:	*Percent of increase*
Grains	77
Livestock and poultry	48
Other farm products	55

Foods:	*Percent of increase*
Dairy products	41
Fruits and vegetables	26
Meats	29
Cereal products	24
Other foods	48

The principal cause of these upward movements in agricultural prices was the great increase in demand resulting from the defense effort, as nonagricultural income rose 40 percent between August 1939 and December 1941. Consumers were able to purchase more foods of a better grade—particularly meats and dairy products—and in some cases, in order to protect themselves against possible shortages and further price advances, they increased their purchases of foods which could be stored. For example, at the beginning of the war and again in the latter part of 1941, heavy buying took place in the sugar market. Likewise, throughout 1941, large quantities of canned goods were bought for storage by consumers.

The general demand for foods was intensified by increases in forward buying on the part of wholesale and retail distributors. Their stocks of coffee, tea, sugar, canned goods, and fats and oils reached high levels in 1941. Furthermore, industrial users of agricultural commodities accumulated large inventories of cocoa beans, sugar, vegetable oils, and other products. A considerable proportion of this forward buying was speculative in character, particularly in the month of September 1939, and throughout most of the year 1941. Although such speculative activity affected to some extent all farm prices, it was especially prevalent in the grain, sugar, and fats and oils markets.

Demand was also increased as a result of large scale Government purchases of farm products for our armed forces and for shipment under the Lend-Lease program. Throughout most of 1941 the armed forces consumed increasing quantities of nearly all types of foods. Furthermore, after the passage of the Lend-Lease Act in March 1941, purchases for shipment abroad took from the market large quantities of pork and lard, manufactured dairy products, and preserved fruits and vegetables.

These increases in demand and the resultant improvement in farm prices brought forth large quantities of farm products, agricultural production attaining a record high in 1940 and again in 1941. Not all of this increased output, however, was allowed to flow into the Nation's markets, as limitations on the supplies available to consumers were introduced for the purpose of raising the level of farm prices. The most important of these limitations was the loan program enacted by Congress and conducted by the Department of Agriculture. Under the provisions of this program, loans were provided to farmers, enabling them to withhold supplies of certain important commodities, notably corn, wheat, cotton, and tobacco from the market. When the loan rate offered by the Government was higher than the market price,

farmers pledged their products to the Government, thus temporarily removing such supplies from commercial channels. These supplies then flowed into the market only when the market price rose to the level of the loan rate. Increases of the loan rates during both 1940 and 1941 appear to have been partly responsible for the advance in prices, particularly for grains.

Finally, the level of farm prices reflected increases in the prices of imported commodities. Higher prices of imported foods resulted principally from shipping shortages, advances in shipping charges, and the operation of various types of quota systems, as in the case of sugar, coffee, and tea.

The trend of prices of farm products and foods during the Defense Period was quite similar to that during the corresponding period of World War I. During both these periods there were three distinct movements: A rise immediately after the outbreak of the war in Europe, followed by stability or decline during the next 10 to 12 months, and then by an extremely rapid and almost uninterrupted advance. At the end of 2¼ years, prices of farm products had advanced 40 percent in the first war and 55 percent in the second, while the advances for food prices in the two war periods amounted to 39 and 35 percent, respectively.

However, behind this similarity in the price movements of the two broad groups, farm products and foods, were differences in the movements of a number of important agricultural products. In World War I, the price level of farm products was carried upward largely by the increase in grains, which between July 1914 and November 1916 advanced 84 percent. This rise, together with an increase of 42 percent in "other farm products," was in contrast to the relative stability of livestock and poultry, which increased only 10 percent. In World War II, however, the upward movement was more general in agricultural markets. Grains again led with an increase of 77 percent from early levels, while livestock did not reach the peak of World War I, and poultry instead of remaining nearly stable, rose 48 percent. "Other farm products" mounted 55 percent.

The same general situation prevailed in foods. Although the over-all increase during both periods was almost exactly the same, prices of the individual products moved somewhat differently. In the last war, the upward movement was led by cereal products; wheat flour, which had risen substantially more than 100 percent, reflected the advance in the grain market. On the other hand, meats, following the trend of livestock and poultry, remained relatively stable, rising only 10 percent. In the corresponding period of the present war, cereal products rose only 24 percent, while meats increased 29 percent, again reflecting the trend of the farm products from which they are derived. Prices of dairy products rose 41 percent from August 1939 to December 1941, as compared with an increase of 44 percent in the corresponding months of World War I.

A final, though important, difference between the two wars consists in the fact that prices of farm products and foods were at or near the highest levels of many years [1] at the beginning of the first World War, while at the beginning of the present conflict they were at clearly depressed levels.

[1] See Wholesale Prices 1890 to 1919 (U. S. Bureau of Labor Statistics Bulletin No. 269), pp. 13–15.

In the following sections of this chapter the movements of farm and food prices during the Defense Period, August 1939–November 1941, and the principal causes of those movements are described in some detail. Because of the fact that prices of most farm products, when processed into foods, usually reflect the same general economic conditions which affect them as raw commodities, this discussion considers the various farm products and foods jointly. This chapter, however, is confined to those farm products which are principally consumed as foods. Farm products having other primary uses (as, for example, cotton) are treated in other chapters of the bulletin.

Grains

The course of grain prices since the outbreak of the war can, in general, be divided into three periods. The first period ran from August 1939 to April 1940, during which time prices advanced with little interruption. In the second period, from April 1940 to August 1940, prices fell to levels only moderately above those of August 1939. During the third period, from August 1940 to December 1941, prices again advanced, and by the later date, were 77 percent higher than at the outbreak of the war.

The prices of grains were influenced chiefly by (1) the European war and (2) the Governmental price-raising measures. Major aspects of the price movements of the four most important grains are described below.

WHEAT

Between August 1939 and April 1940 wheat prices advanced on the average 54 percent. The price of No. 2 hard wheat (Kansas City) rose from 64 cents to $1.07 per bushel during this period, while a smaller advance—from 75 cents to $1.08—occurred for No. 2 dark northern spring wheat (Minneapolis). The increase in prices was interrupted only by minor declines in October 1939 and in February 1940. (See table 2.)

The dominant influences in this rise of wheat prices were (1) the European war, at the outbreak of which prices shot up 26 percent between August and September; (2) poor crop conditions both at home and abroad; and (3) Government price-raising measures, particularly the crop-loan program. Nearly 168 million bushels, or approximately 22 percent of the 1939–40 wheat crop, were placed under loan and thus removed from commercial channels. In addition, the Government in September 1938 had instituted an export subsidy program, under the provisions of which wheat was purchased at domestic prices and resold for export at the lower world prices.

Partly as a result of these Governmental actions, prices advanced during this period despite the existence in 1939–40 of both a record world wheat supply of 5.5 billion bushels and an above-average domestic supply consisting of a July 1, 1939, carry-over of 252 million bushels and a crop of 751 million bushels in the 1939–40 crop-year.

Beginning in April 1940, however, wheat prices began to move downward, influenced by better crop prospects for the coming season, the invasion of the Low Countries, and the capitulation of France. This decline, partly seasonal in character, continued through August 1940, by which time wheat prices as a whole were only 5 percent above the August 1939 levels. In Kansas City, the August 1940 price was

69 cents per bushel, compared with an August 1939 quotation of 64 cents, while in Minneapolis, No. 2 dark northern spring wheat was selling at 72 cents per bushel—2 cents below the pre-war level. The rate of decline was slowed down during May and June, however, as a result of the establishment in May of fixed minimum futures prices based on the close of May 18, which remained in effect until June 14. At the same time a loan rate of 65½ cents a bushel was established. This was slightly above the minimum futures prices. The decline was further softened by the establishment of minimum prices in Canada and by the movement of wheat into loan, 158 million bushels thus being removed from the market from June through August 1940.

The period from August 1940 to December 1941 was one of generally increasing wheat prices; by December 1941 they had advanced to a level 76 percent above that of August 1939. The increase was due primarily to the operations of the loan program, to speculation, to new legislation affecting prices, and to the increase in consumer incomes resulting from the defense program.

This price advance occurred even though the 1940–41 domestic wheat supply again amounted to more than a billion bushels. The carry-over on July 1, 1940, was 282 million bushels and the production for the crop-year 1940–41 was 817 million bushels. The carry-over on July 1, 1941, reached a record high of 387 million bushels which, combined with the production of 961 million bushels of 1941 wheat, yielded a supply of 1,348 million bushels for the 1941–42 crop-year, the largest in history. Furthermore, this rise in prices occurred in spite of the curtailment of foreign markets. During 1938–39, with the aid of the Government export subsidy program, exports totaled 116 million bushels; in 1940–41 they had decreased to 34 million bushels, and during the crop-year 1941–42 continued only in small volume.

The dominant influence behind rising wheat prices throughout the period from August 1940 to December 1941 was the loan program. Approximately 34 percent of the 1940 crop was placed under loan, thus decreasing market supplies by 278 million bushels. The particularly rapid price advance in the spring of 1941 was caused primarily by speculative buying, as the market anticipated the passage of legislation raising the loan rate to 85 percent of parity. The effects of the loan program upon the market for wheat were summarized by the Department of Agriculture in May 1941 as follows:

> During most of the marketing year (July 1940 to June 1941) for the 1940 crop, the loan program has held wheat prices at an average of about 25 cents a bushel above the competitive level which normally would have prevailed under the demand and supply conditions of this period. Recently the difference between the actual price and that which would have prevailed without any loan program has been even greater, perhaps 40 cents a bushel, as a result of the speculative anticipation of higher loan rates on the 1941 crop.[2]

In May, Congress passed the legislation raising the loan rate to 85 percent of the parity price of wheat and freezing Government-held stocks.[3] Also in May, the President established import quotas on wheat and wheat flour in order to protect the rising domestic prices from the competition of foreign supplies.

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[2] The Demand and Price Situation, May 1941. (U. S. Department of Agriculture.)
[3] The bill designed to prevent the sale of Government-held stocks of agricultural commodities was vetoed by the President in September 1941.

The new loan rate of 98 cents a bushel on the 1941 crop, compared with 65½ cents on the previous crop, became effective June 6. As the farm price of wheat at no time between June and November 1941 was as high as 98 cents a bushel, a large amount of wheat went into loan. Thus, 336 million bushels, or 34 percent of the 1941 crop, was removed from commercial channels during this time. By September 1941, wheat prices reached a peak of 65 percent above their pre-war levels. After a slight decline in October, owing to German military successes in Russia, prices recovered in November to levels 64 percent higher than in August 1939. In December, wheat prices in both Kansas City and Minneapolis had reached a level of above $1.21 per bushel, compared with pre-war quotations of 64 and 74 cents, respectively.

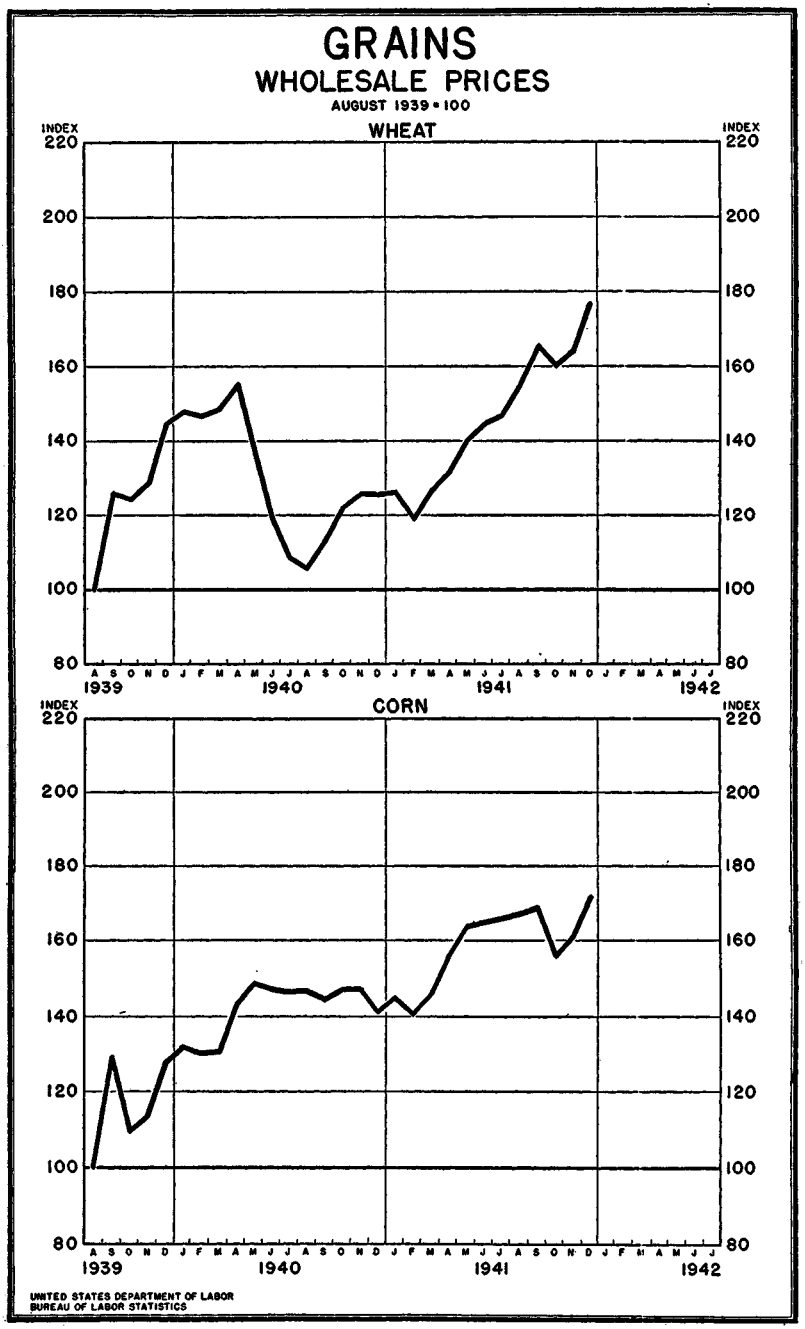
CORN

Between August 1939 and May 1940, corn prices, reflecting the immediate war stimulus felt by most farm prices, generally increased, and in May 1940 were 49 percent higher than in August 1939. This increase occurred despite a production in the 1939–40 crop-year (October 1939 to September 1940) of 2.6 billion bushels of corn, 13 percent above the average for the previous 10 years. The stimulus to prices resulted principally from the operation of the corn loan program and from drought conditions in the spring of 1940 which substantially reduced the amount of fall and winter forage crops at a time when there were large numbers of livestock on farms. Between December 1939 and April 1940, 303 million bushels of corn were placed under loan, thus increasing loan stocks to 550 million bushels, or 39 percent of the total corn supply available on April 1, 1940.

For the next 10 months (May 1940 to February 1941), however, the trend was reversed as corn prices declined moderately—by 5 percent—principally because of the large corn supplies available in 1940. However, prices remained 41 percent above their pre-war levels. Partly as a result of the big 1939–40 crop, the October 1, 1940, carry-over was exceptionally large, amounting to 694 million bushels. This carry-over, plus a 1940–41 crop of 2,450 million bushels, yielded a total supply of 3,144 million bushels in the crop-year beginning October 1, 1940, compared with a total supply of 3,185 million bushels in the previous year.

That the decline in the price of corn from May 1940 to February 1941 was not more severe, as in the case of wheat, may be attributed to a number of factors. First, the curtailment of world trade had little effect upon corn, as exports of the grain had been negligible. Second, approximately 80 percent of the corn supply is consumed by livestock, and the number of livestock on farms during this period, although smaller than in 1939–40, was larger than for several years. Third, the price of corn was supported by the loan rate of 61 cents per bushel on the 1940 crop, which became effective in December and which was 4 cents higher than in 1939.

By February 1941 the price decline had run its course, and between that time and December 1941 corn prices generally advanced, in the latter month going to a point 72 percent above their pre-war level. This price rise, which occurred in spite of a new record supply of corn on April 1, 1941, of 1,423 million bushels, plus a carry-over on October 1 of 632 million bushels, was due in large part to the Government



"food-for-defense" program, which encouraged a larger production of livestock and thus increased the demand for corn. Early in May 1941, shortly after the announcement of this program, corn prices attained the highest levels since 1937. Also contributing to the advance in corn prices was a certain amount of speculative activity during the spring of 1941, in anticipation of legislation raising the loan rate on the 1941 corn crop to 85 percent of parity. This legislation was passed in May 1941, with the result that a loan rate of 74.8 cents per bushel was to become effective on December 1, 1941.

The rate of advance of corn prices slowed during the summer and early fall of 1941, owing to normal seasonal pressure on prices at this time of year. During the first part of October, corn prices declined because of the large estimated production for 1941–42 (2,675 million bushels). However, in the latter part of the month and in November, prices advanced contraseasonally, because of unfavorable weather conditions in the corn belt, the higher loan rate, and the greater demand for corn resulting from the increase in production of livestock.

BARLEY AND OATS

The price of barley and oats generally increased between August 1939 and April 1940. On the latter date, barley was 40 percent and oats were 43 percent above their pre-war levels.

After this primary stimulus of the war had run its course, however, the prices of both grains declined; by August 1940 barley had fallen to 7 percent over its August 1939 position, and oats had dropped to 2 percent below the August 1939 level. This decrease was largely caused by better crop conditions and larger supplies. The success of the Nazi armies was also a depressing influence. In addition, neither of these grains benefited from a Government loan program until one was instituted for barley in June 1940.

The announcement of the loan rate for barley, and its increase from 32 to 44 cents per bushel in June 1941, resulted in the removal of 16 million bushels of barley from the commercial market between that date and November 1941. As a result of the loan program and the increased demand for all grains, the price of barley rose moderately, in spite of a 1941 supply which was the largest on record, and by August 1941 reached a level 50 percent higher than in August 1939.

The price of oats rose until December 1940, at which time it was 30 percent higher than in August 1939. The price then fluctuated irregularly, and in August 1941 was only 28 percent above its pre-war level, as compared to 55 percent for wheat, 67 percent for corn, and 50 percent for barley. Since the supply of oats had remained practically unchanged between 1940 and 1941, a smaller crop being offset by a larger carry-over, the failure of the price to advance in the same degree as the other grains may be attributed in part to the lack of a Government loan program for oats.

Beginning in September 1941, however, the price of both barley and oats rose rapidly. This increase apparently reflected the announcement on September 8 of the 1942 production goals for all essential farm products, which included an expansion of hog slaughter from 71 to 79 million head and an increase of cattle slaughter from 25 to 28 million head. By December 1941 barley prices were 122 percent above those of August 1939, while the prices of oats had risen 78 percent during the same period.

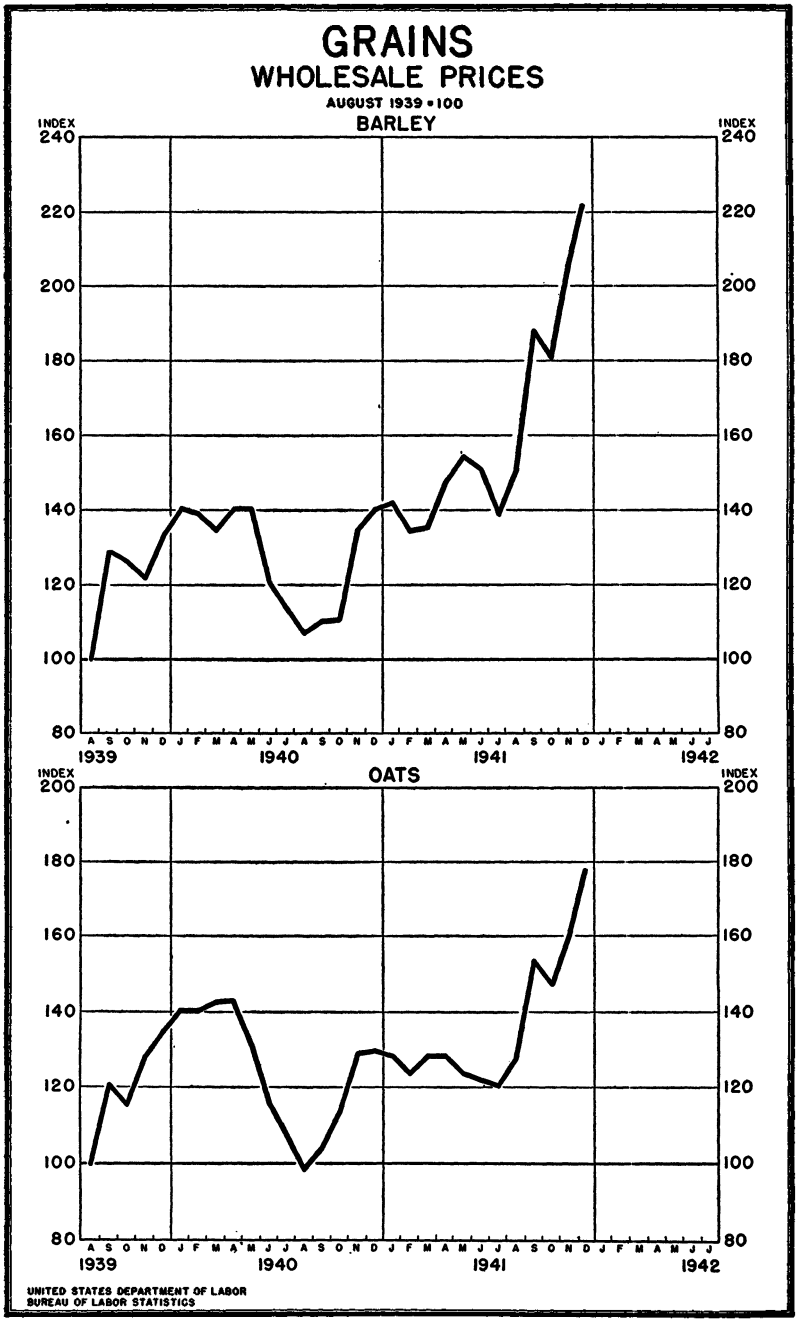


TABLE 2.—*GRAINS: Wholesale Prices and Indexes, by Kind of Grains, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Wheat			Barley		Corn			Oats
		Price per bushel					Price per bushel		
	Index [1] (August 1939=100)	No. 2 hard, Kansas City	No. 2 dark northern spring, Minneapolis	Index (August 1939=100)	Price per bushel: Malting, Minneapolis	Index [2] (August 1939=100)	No. 2 yellow, Chicago	No. 3 yellow, Chicago	Index (August 1939=100)
1939									
August	100.0	$0.642	$0.749	100.0	$0.366	100.0	$0.451	$0.442	100.0
September	125.8	.838	.923	129.5	.474	129.4	.576	.577	120.6
October	123.8	.825	.878	126.5	.463	109.7	.500	.482	115.5
November	128.4	.859	.911	122.3	.448	113.6	.512	.503	128.2
December	144.4	.979	1.022	133.2	.488	127.9	.571	.569	134.5
1940									
January	147.3	.999	1.055	140.4	.514	131.9	.591	.586	140.2
February	146.0	.991	1.033	139.3	.510	130.3	.584	.578	140.1
March	147.5	1.010	1.036	134.9	.494	130.5	.584	.580	142.6
April	154.1	1.071	1.081	140.4	.514	143.0	.639	.637	143.0
May	134.9	.925	.953	140.4	.514	148.8	.680	.652	131.3
June	117.9	.785	.828	120.6	.441	147.5	.664	.653	115.6
July	108.3	.701	.774	113.9	.417	146.7	.658	.652	107.7
August	105.4	.693	.728	107.2	.393	146.8	.652	.656	98.8
September	112.8	.754	.789	110.3	.404	144.5	.647	.643	104.2
October	121.8	.814	.858	110.7	.405	147.2	.661	.653	113.6
November	125.3	.843	.877	134.9	.494	147.3	.670	.648	129.1
December	125.1	.843	.876	140.4	.514	141.4	.645	.621	129.7
1941									
January	125.6	.834	.896	142.4	.521	145.0	.654	.641	128.5
February	118.7	.784	.833	134.5	.492	140.9	.638	.622	123.9
March	126.1	.838	.895	135.4	.496	146.2	.663	.644	128.3
April	131.2	.875	.941	147.5	.540	156.2	.703	.692	128.5
May	139.6	.908	.979	154.4	.565	163.9	.737	.727	123.9
June	144.2	.950	1.007	151.0	.553	165.0	.740	.733	122.0
July	146.2	.989	1.012	139.1	.509	165.8	.742	.737	120.3
August	154.1	1.065	1.049	150.3	.550	167.2	.751	.742	127.7
September	164.8	1.141	1.136	188.0	.688	168.8	.757	.749	153.5
October	159.6	1.124	1.061	181.1	.663	156.0	.706	.688	147.5
November	163.5	1.132	1.124	206.6	.756	161.1	.740	.703	160.1
December	176.3	1.210	1.219	221.6	.811	171.6	.769	.762	177.9

[1] Based on quotations for wheat in 5 different areas, including Kansas City and Minneapolis.
[2] Based on prices of both No. 2 and No. 3 yellow corn.

Cereal Products

Between August 1939 and November 1941, the prices of cereal products were much more staple than those of grains, although price movements of the two groups of commodities were generally parallel in direction. While the following analysis is limited to price changes of the more important cereal products, it is also representative of the price trends of cereal products in general during the Defense Period.

WHEAT FLOUR

The price of wheat flour began to rise after the outbreak of war in Europe, and by December 1939 the composite index of wholesale wheat-flour prices was 28 percent higher than in August. After a slight decline in the winter of 1940, prices recovered and by April were once again 28 percent above the pre-war level. The decline was then resumed and between April and August 1940 the price of

wheat flour fell to a level 4 percent below that of August 1939. In August 1940 flour prices again turned up, following the trend of the general market, and the ensuing 16 months, through December 1941, formed a period of almost continuously rising prices By September 1941 the wholesale price of flour had reached its highest point after the outbreak of the war—36 percent above the August 1939 figure. There was a small decline between September and November 1941, but prices rose again in December to a level 41 percent above the pre-war level.

The price fluctuations of wheat flour tend to parallel those of wheat, because the cost of wheat constitutes from 50 to 60 percent of the total cost of manufacturing wheat flour and represents approximately 90 percent of the cost of materials.[4] Therefore, the causal factors influencing wheat prices, which are described in the preceding section on grains (p. 15), also directly affect the price of flour.

BREAD

Bread prices, which are generally stable, experienced few changes during the war period. Between August 1939 and January 1940, wholesale bread prices remained virtually unchanged. In February 1940, however, they were raised in a number of cities, chiefly in the Northeast, a move attributed by leading bakers to the higher cost of flour. The composite index of bread prices consequently rose 10 percent, remaining at the higher level through October 1940. In November 1940 the increases were rescinded and bread prices fell to their August 1939 level, remaining there through August 1941. This reduction followed the sharp drop in flour prices between February and August 1940. After the sustained increases in flour prices during 1941, bread prices were again raised in many areas in September and October, and, although there was a slight decline in the next 2 months, the December level was still 10 percent above that of August 1939.

The relative stability of the price of bread results in part from its wide distribution as a branded manufactured product. The major baking companies, which control a substantial proportion of the business in the Nation's large bread-consuming centers,[5] widely advertise their trade-marked products, and in common with most other producers of such commodities, change their prices infrequently.

The spread between the retail price of bread and the costs of its ingredients, representing the margin absorbed by the baking and retailing functions, is estimated regularly by the Department of Agriculture.[6] During the first 8 months of 1939, the combined margin of the baker and retailer averaged 5.66 cents, compared with 5.31 cents for the 10-year period 1929–38. Thus, in August 1939 the combined margin was at a relatively high level, comparable to that prevailing during the 1920's. Between August 1939 and January 1940, while retail bread prices remained the same, prices of wheat and wheat flour rose and bakers' margins narrowed somewhat. In spite of this

[4] In 1939, according to the Census of Manufactures, the cost of wheat amounted to 58.5 Percent of the value of product of the flour and other grain-mill products industry.

[5] In 1933 the 10 largest bakers made and sold approximately 31 percent of all the bread produced and sold in the United States. Their share of the business in big cities was undoubtedly greater. (Federal Trade Commission, Agricultural Income Inquiry, 1937, Part I, p. 286.)

[6] Data available upon request to the Consumers' Council Division, Agricultural Marketing Administration, U. S. Department of Agriculture.

decline, however, the margin for the entire year 1939 was 5.51 cents, or 0.20 cents above the 10-year average.

In February 1940, when the retail price of bread advanced 10 percent, bakers' margins increased, becoming still larger in the spring and summer of 1940 when wheat-flour prices were falling. Although margins once more narrowed during the last 4 months of the year, as a result of the rising cost of flour and a 10-percent decrease of retail bread prices from October to November, their 1940 average was 5.59 cents, well above that of the 1929–38 period.

As flour costs continued to rise, bakers' margins generally narrowed from January through July 1941. This led the bakers in July to plan an increase in their selling prices. The intended action was met with a statement from Price Administrator Henderson that the advance in the cost of ingredients warranted a retail-price increase of only ½ cent for a 1-pound loaf. He asked that no increase greater than 1 cent a loaf be initiated. In August, most bakers raised the retail price of bread 1 cent a loaf throughout the East and Middle West. This price advance halted the decline in margins, which widened during the 3 subsequent months and by October had become larger than in August 1939. The average margin for 1941 was 5.41 cents which, although smaller than in 1940, was above the 1929–38 figure. Although the increased price of bread applied to loaves of all sizes, the standard size in most cities was 1 pound. In Omaha, St. Louis, and Milwaukee, where the price was not altered, the size of the loaf was reduced.

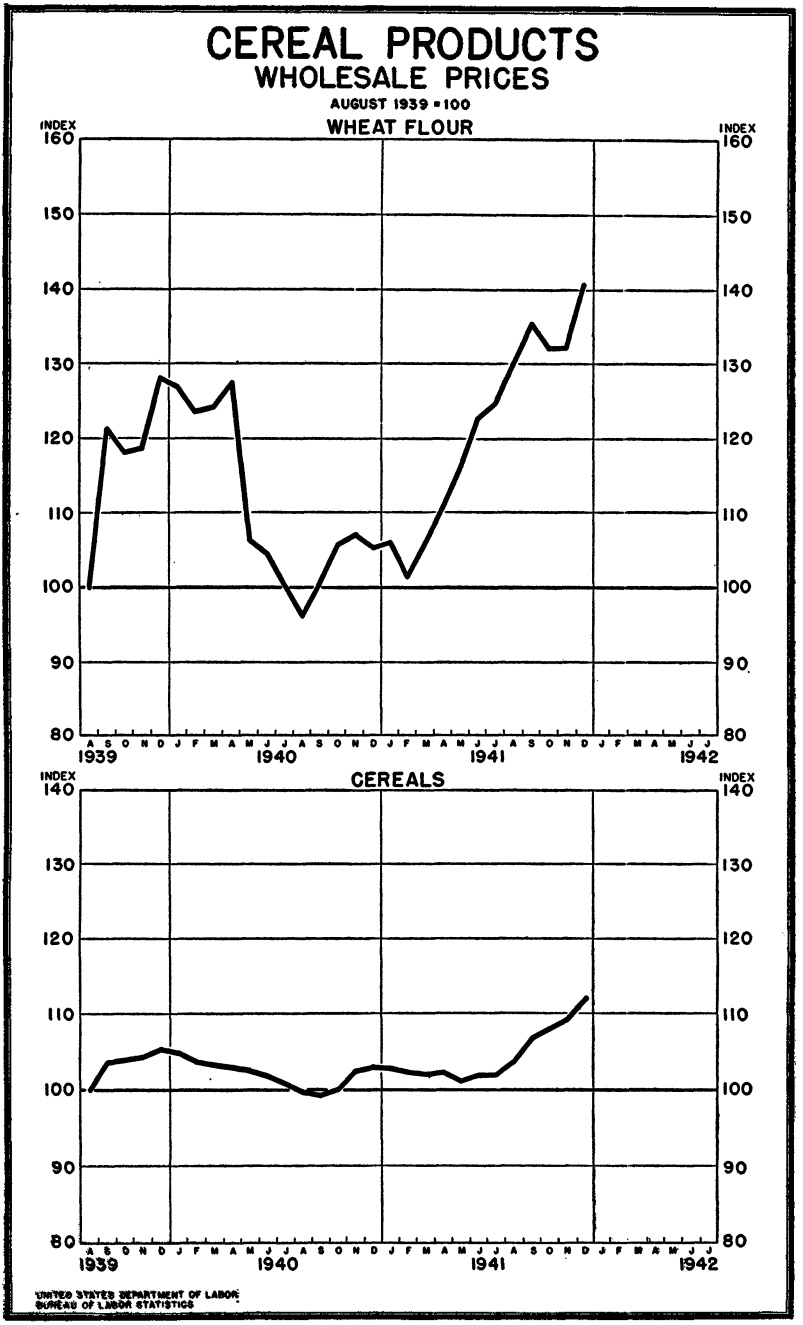
At the annual convention of the American Bakers Association in mid-October 1941, a representative of the Office of Price Administration advised the industry to cut operating and distributing costs, but warned that any attempt to affect such reduction by decreasing the weight of standard products would result in Government action. At the same meeting, a spokesman for the Office of Production Management stated that no priority ratings would be issued to bakers for new smaller baking pans, and that any widespread attempt to make smaller loaves in normal-sized baking pans would be countered by appropriate Government action.[7]

CEREAL BREAKFAST FOODS

Although wholesale prices of cereal breakfast foods are similar in their movements to prices of grains, they fluctuate within a much narrower range. By December 1939 the composite index of cereal prices charged by producers had risen 5 percent. It then declined slowly during 1940 to a level in September about 1 percent below that of August 1939. This drop was followed by 9 months of comparative stability during which the price did not fluctuate more than 3 percent. In the fall of 1941, however, a moderate upturn set in, prices rising by December to a point 12 percent above the pre-war level.

This relative stability was largely due to the fact that breakfast cereals, like bread, are usually branded, advertised products. Moreover, the grains used in their production comprise only a small percentage of their cost. Following the rising cost of grains in 1941, however, the sizes of the 8-ounce and 13-ounce boxes of one widely sold brand of corn flakes were reduced in June to 6 ounces and 11 ounces, respectively, while the price per box remained the same.

[7] New York Times, October 15, 1941.



In June, also, the size of another widely advertised breakfast cereal was decreased from an 8-ounce box to a 6-ounce box, with no change in price.

CRACKERS

The wholesale price of crackers rose moderately after August 1939 and by February 1940 had reached a point 11 percent above the pre-war figure. From January to July it gradually fell, declining to a level 4 percent above the pre-war position, where it remained through September 1941. Following slight increases in the last 3 months of 1941, the price of crackers at the end of the Defense Period was 8 percent higher than in August 1939.

Crackers, like breakfast cereals, are generally branded, advertised products, and prices remain comparatively stable over extended periods of time. Furthermore, as in the case of cereals, the grains used in the manufacture of crackers represent only a small proportion of their total cost.

TABLE 3.—*CEREAL PRODUCTS: Wholesale-Price Indexes, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Wholesale-price indexes (August 1939=100) of—			
	Wheat flour [1]	Bread [2]	Cereals [3]	Crackers [4]
1939				
August	100.0	100.0	100.0	100.0
September	121.3	100.0	103.6	103.7
October	118.1	100.0	103.9	108.4
November	118.7	100.0	104.4	108.4
December	128.1	100.0	105.4	108.4
1940				
January	126.9	99.9	104.8	110.2
February	123.5	109.9	103.7	110.6
March	124.2	109.9	103.3	109.0
April	127.5	109.9	102.9	108.4
May	106.3	109.8	102.5	108.4
June	104.5	109.9	101.8	106.2
July	100.3	109.9	100.8	104.0
August	96.3	109.9	99.7	104.0
September	100.7	109.9	99.3	104.0
October	105.7	109.9	100.0	104.0
November	107.2	99.9	102.5	104.0
December	105.3	99.9	103.0	104.0
1941				
January	106.0	99.8	102.8	104.0
February	101.4	99.8	102.3	104.0
March	106.2	99.8	102.1	104.0
April	111.0	99.8	102.3	104.0
May	116.5	99.8	101.2	104.0
June	122.7	99.8	101.9	104.0
July	124.8	99.8	101.9	104.0
August	130.0	99.8	103.7	104.0
September	135.5	110.0	106.9	104.0
October	132.1	114.0	108.1	104.6
November	132.2	110.5	109.3	105.1
December	140.8	110.3	111.8	107.8

[1] Average of 10 quotations.
[2] Average of 5 quotations.
[3] Average of 3 quotations.
[4] Average of 2 quotations.

Livestock and Meats

Prices of both livestock and meats rose rapidly immediately following the outbreak of war in August 1939, and subsequently declined, until by December they were below their pre-war levels. Livestock prices preceded meat prices in the rise that followed, but by the late spring of 1940 both groups were advancing, and their movements continued to be roughly parallel throughout the remainder of the Defense Period. Despite a seasonal decline during the fall of 1941, the prices of both livestock and meats in November remained substantially above their August 1939 levels.

Wholesale prices of livestock and meats are closely related, as the cost of livestock represents approximately 80 percent of the total cost of producing meats. The prices that meat packers pay for animals in the livestock market and the prices at which the products are sold in the wholesale meat market move together without an appreciable time differential, although the degree of fluctuation in the two markets naturally may differ to some extent. Since the factors affecting livestock and meat prices are essentially the same, price movements of livestock have been briefly summarized below, while the more detailed analysis following is confined to a discussion of wholesale meat prices.

LIVESTOCK

After a rapid upturn at the beginning of the war in Europe, the average price of livestock declined by December 1939 to a point 3 percent below the August 1939 level. The price of hogs, which rose 31 percent—from $5.75 to $7.54 per 100 pounds—between August and September, fell back to $5.15 in December; on the other hand, prices of steers and lambs, which showed relative advances in September only one-half as great as for hogs, remained in December well above their respective pre-war levels of $9.26 and $7.93 per 100 pounds.[8] (See table 4.)

Thereafter livestock prices moved irregularly upward through September 1941, when the average price reached a position 53 percent above that of August 1939, by far the highest point attained during the Defense Period. At that time, prices of hogs were 99 percent and lambs 38 percent above their pre-war levels. Steer prices, although 26 percent above their August 1939 level, were 7 percent below a peak of $12.61 per 100 pounds reached in December 1940.

In October and November, livestock prices fell, a normal behavior at that time of year, in response to seasonally heavy marketings; but the average price remained 37 percent higher in November 1941 than in August 1939. In December, while the price of hogs had dropped back 8 percent from its September peak, steers and lambs reached their highest levels of the period—$12.75 and $11.20 per 100 pounds, respectively.

[8] Prices quoted are for steers, good to choice, Chicago; hogs, good to choice, Chicago; and lambs, native, fair to good, Chicago.

TABLE 4.—*LIVESTOCK: Wholesale Prices and Indexes, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Index (August 1939=100): Livestock [1]	Wholesale prices (per 100 pounds) of—		
		Steers, good to choice, Chicago	Hogs, good to choice, Chicago	Lambs, native, fair to good, Chicago
1939				
August	100.0	$9.263	$5.750	$7.925
September	115.6	10.681	7.544	9.069
October	106.8	10.070	6.970	8.995
November	100.2	9.856	5.950	8.838
December	96.7	10.000	5.150	8.381
1940				
January	101.8	10.435	5.250	8.600
February	99.4	10.525	4.925	8.600
March	101.7	11.344	4.944	9.644
April	103.6	11.215	5.455	9.665
May	105.5	10.894	5.663	9.625
June	98.0	10.331	5.038	10.156
July	105.8	11.015	5.990	9.135
August	108.3	11.325	6.225	8.750
September	109.7	11.465	6.585	8.535
October	107.0	12.094	6.413	8.875
November	105.9	12.206	6.238	8.875
December	110.2	12.610	6.420	9.055
1941				
January	125.8	13.081	7.688	9.775
February	124.9	12.550	7.600	10.094
March	125.0	12.455	7.530	10.290
April	130.6	12.306	8.419	9.875
May	133.3	11.969	8.969	10.438
June	140.9	11.880	9.875	11.125
July	149.9	12.013	10.938	10.750
August	150.0	11.925	10.881	10.875
September	153.2	11.710	11.415	10.975
October	143.2	11.438	10.706	10.625
November	137.3	11.056	10.306	10.569
December	147.6	12.745	10.505	11.200

[1] Includes cattle, hogs, sheep, and poultry.

MEATS

Immediately after the outbreak of the war, meat prices rose, advancing 10 percent between August and September 1939. A reaction followed, beginning in October and continuing through December, when meat prices reached a position 6 percent below that of August 1939, remaining near this level during January, February, and March of 1940. This decline in the composite index of meat prices is explainable largely by a fall in the prices of pork products, accompanying a drop in hog prices, which in March 1940 were 14 percent below their pre-war level. In March 1940, fresh pork at wholesale was 25 percent below its pre-war level, while ham was 17 percent lower and bacon 12 percent lower than in August 1939. The prices of beef and lamb, on the other hand, did not decline to the same extent during the winter, and had recovered somewhat by March 1940, as had the prices of steers and lambs.

The general fall in wholesale meat prices between October 1939 and March 1940 was partly seasonal and partly a result of unusually heavy livestock marketings and correspondingly large meat production during these months. The quantities of cattle, calves, sheep,

and lambs slaughtered were not materially different from those of previous years, but the hog slaughter was by far the largest since 1931–32. This, coupled with the seasonally large fall and winter livestock slaughter, was reflected in the Federal Reserve Board index of meat-packing production. The index attained unusual heights during this period, rising in December 1939 to a point far above that for any previous December since 1924. Inasmuch as nonagricultural income remained comparatively steady between October 1939 and March 1940, the marked decline in meat prices during the period can be attributed primarily to the great volume of meat production. In the case of pork products the decline was more pronounced, and longer continued, because of their greater supply.

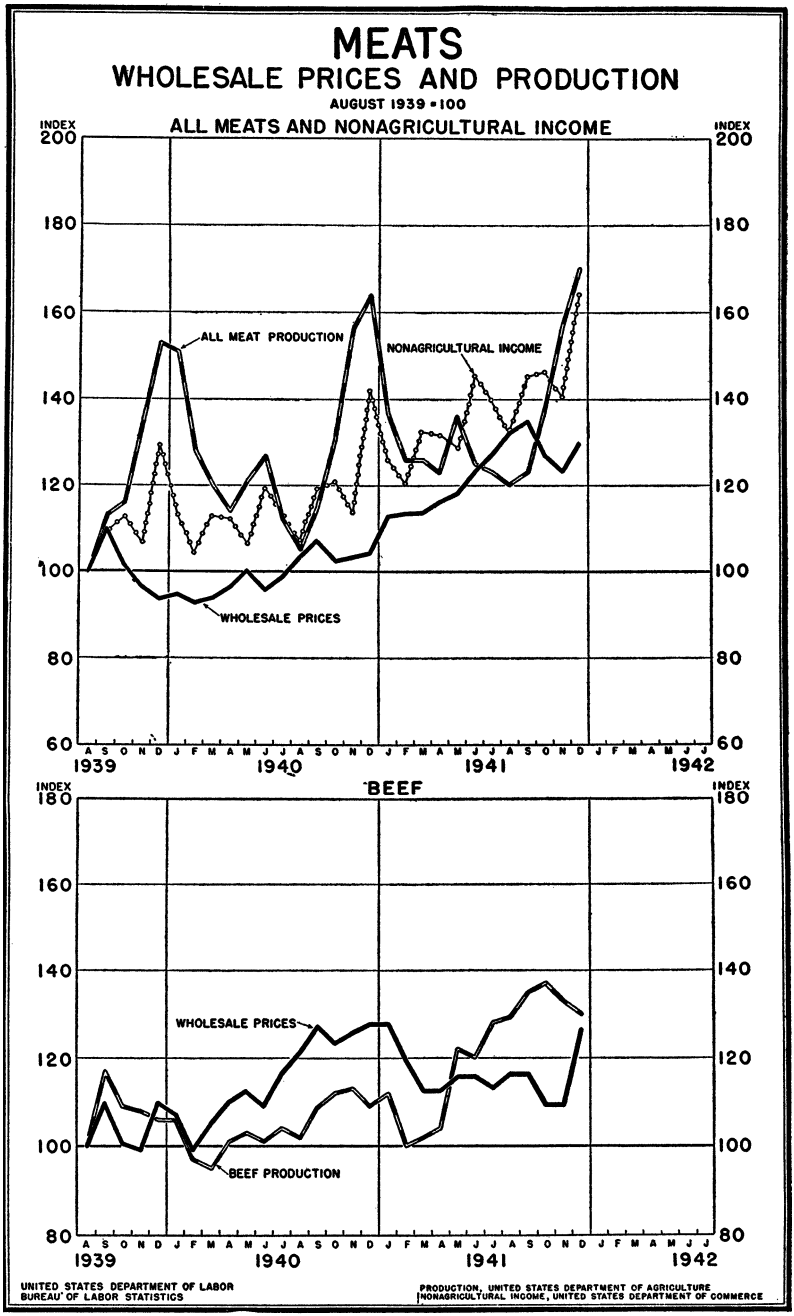
In March 1940 wholesale meat prices began to move upward. The advance continued with little interruption through September 1941, when prices were 35 percent above the August 1939 level.[9] Most of the increase occurred during 1941, and the upward movement was particularly rapid between May and September. This advance resulted chiefly from the rise in consumer incomes which, as reflected by the index of nonagricultural income, rose 27 percent between March 1940 and September 1941. The rate of increase in these incomes, as is evident on the accompanying chart, coincided rather closely with the rate of increase in the average of meat prices.

The advance in meat prices was led by a sharp rise in the price of pork products, which reflected a rise of almost 100 percent in the price of hogs between August 1939 and September 1941. Fresh pork, on the basis of Chicago quotations, was selling for 63 percent more at wholesale in September 1941 than in August 1939; in the same period ham rose 46 percent and bacon 63 percent.

The stimulus to pork prices provided by rising consumer incomes was reinforced by Governmental purchases under the Lend-Lease program, which was inaugurated on March 15, 1941, and applied to hogs and hog products, but not to the other classes of livestock and meats. Early in April 1941, the Department of Agriculture announced that in order to implement the Lend-Lease program and secure adequate pork supplies for both the United States and Great Britain, hog prices would be supported until June 1943, through open-market purchases, at a level of $9 per hundred pounds. Between March 15 and September 27, 1941, the Government bought 537 million pounds of pork products, or approximately 13 percent of the total amount produced during that time, a large part of these purchases being transferred to Great Britain. In addition, the impact of Government purchases upon the prices of pork products was augmented during 1941 by a slight reduction in their supply, the output of hog products during the first 9 months of 1941 being 3 percent less than in the corresponding months of 1940.

The price of beef did not advance in the same degree as that of pork between March 1940 and September 1941. In September 1941, the price of steer carcasses at Chicago was only 17 percent higher than in August 1939. Beef prices reached their peak for the entire period in January 1941, 28 percent above the pre-war level, but declined 12 percent during the next 2 months. Between March and September 1941,

[9] There were small seasonal price declines in the latter part of May and in June of 1940, and also between September and December 1940.



however, a partial recovery occurred, steer carcasses advancing 4 percent.

The weakness of beef prices in 1941, especially from January to March, was the consequence of large marketings of cattle. Between January and September 1941, Federally inspected slaughter was 14 percent greater than in the corresponding months of 1940 and 24 percent greater than the average slaughter for those months during the preceding 5 years. Furthermore, beef prices, unlike pork prices, received no direct stimulus from Government purchases under the Lend-Lease program. The withdrawal of pork supplies from the domestic market and the high prices of pork products, however, undoubtedly strengthened the demand for beef.

TABLE 5.—*MEATS: Wholesale Prices and Indexes, by Product, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Meats	Pork				Beef		Lamb	
	Index[1] (August 1939=100)	Index (August 1939=100): Fresh	Price per pound (Chicago)			Index (August 1939=100)	Price per pound: Fresh, carcass, steers, Chicago	Index (August 1939=100)	Price per pound: Fresh, Chicago
			Fresh[2]	Cured hams	Cured bacon				
1939									
August	100.0	100.0	$0.133	$0.203	$0.153	100.0	$0.151	100.0	$0.158
September	109.9	116.5	.155	.206	.165	109.9	.166	106.3	.168
October	101.6	99.2	.132	.209	.159	100.7	.152	98.1	.155
November	96.6	85.7	.114	.185	.152	99.3	.150	100.0	.158
December	93.8	79.7	.106	.176	.146	109.9	.166	88.6	.140
1940									
January	94.8	78.9	.105	.171	.154	107.3	.162	94.9	.150
February	92.8	76.7	.102	.173	.143	99.3	.150	104.4	.165
March	93.9	75.2	.100	.168	.135	105.3	.159	112.7	.178
April	96.5	80.5	.107	.168	.131	109.9	.166	113.9	.180
May	100.1	86.5	.115	.171	.135	112.6	.170	116.5	.184
June	95.9	80.5	.107	.173	.129	109.3	.165	126.6	.200
July	98.9	89.5	.119	.175	.135	116.6	.176	105.1	.166
August	103.3	99.2	.132	.178	.139	121.2	.183	122.2	.193
September	107.2	105.3	.140	.183	.153	127.2	.192	106.3	.168
October	102.6	92.5	.123	.183	.157	123.2	.186	94.9	.150
November	103.4	92.5	.123	.183	.158	125.8	.190	94.9	.150
December	104.5	94.7	.126	.183	.171	127.8	.193	93.7	.148
1941									
January	112.9	110.5	.147	.200	.189	127.8	.193	103.8	.164
February	113.4	111.3	.148	.218	.200	119.2	.180	103.2	.163
March	113.6	112.0	.149	.218	.203	112.6	.170	109.5	.173
April	116.1	121.1	.161	.238	.210	112.6	.170	110.1	.174
May	118.3	126.3	.168	.248	.224	115.9	.175	119.0	.188
June	123.2	137.6	.183	.256	.233	115.9	.175	138.0	.218
July	127.3	148.1	.197	.275	.236	113.2	.171	125.3	.198
August	132.3	157.9	.210	.285	.243	116.6	.176	123.4	.195
September	134.9	162.5	.216	.296	.249	116.6	.176	122.2	.193
October	127.0	144.7	.193	.272	.234	114.6	.173	115.2	.182
November	123.2	136.7	.182	.265	.225	114.6	.173	113.3	.179
December	129.3	144.4	.192	.271	.234	126.5	.191	120.3	.190

[1] Includes beef, lamb, mutton, pork, veal, and poultry.
[2] Includes hams, picnics, bellies, and loins.

The wholesale price of lamb carcasses between March 1940 and September 1941 generally moved in its usual seasonal pattern, but with an upward trend. Thus, lamb prices reached a seasonal peak in June 1940, a low in December 1940, and another peak in June 1941; by September 1941 they were 15 percent higher than in September 1940, and 22 percent above pre-war levels. No reduction in the supply of

lamb took place during this period. The supply in 1940 was 1 percent larger than the average of the previous 5 years, and, in the months January–September 1941, 9 percent larger than the average for the corresponding months of the previous 5 years. The rising trend in the price of lamb, therefore, was undoubtedly due to the generally improved demand for meats, particularly between March 1940 and September 1941.

TABLE 6.—*MEAT: Production and Nonagricultural Income Indexes, August 1939–December 1941*

[Sources: Production—Federal Reserve Board; nonagricultural income payments—U. S. Department of Commerce]

Year and month	Indexes (August 1939=100) of—				
	Production [1]				Nonagricultural income payments [2]
	Meat packing	Pork and lard	Beef	Lamb and mutton	
1939					
August	100	100	100	100	100.0
September	113	110	117	123	100.6
October	116	122	109	114	102.4
November	135	160	108	113	103.3
December	153	197	106	112	104.5
1940					
January	151	191	106	123	104.3
February	128	157	97	108	103.8
March	120	143	95	102	104.1
April	114	127	101	103	103.9
May	121	138	103	103	105.5
June	127	151	101	102	106.5
July	112	121	104	101	107.1
August	105	108	102	103	108.2
September	115	119	109	116	109.3
October	131	146	112	123	110.6
November	156	195	113	116	111.1
December	164	216	109	113	114.5
1941					
January	137	160	112	128	116.4
February	126	148	100	133	118.7
March	126	146	102	116	120.0
April	123	138	104	114	121.6
May	136	150	122	121	125.2
June	125	133	120	104	128.8
July	123	121	128	113	130.0
August	120	114	129	113	131.4
September	123	113	135	121	131.9
October	138	142	137	118	134.0
November	157	182	133	117	134.9
December	170	212	130	121	140.3

[1] Not adjusted for seasonal variation. [2] Adjusted for seasonal variation.

As is ordinarily the case, the month of September marked a temporary turning point in meat prices; between September and November they fell almost 9 percent in response to the seasonal increase in meat supplies. In spite of this decline, however, meat prices in November 1941 were 23 percent above their pre-war levels and 19 percent higher than in November 1940. This drop in prices was due principally to the seasonal increase in production, since consumer purchasing power and the demand for meats continued to advance.

The price decline from September to November 1941 was greatest in the case of pork, which fell 16 percent, while lamb dropped 7 percent. The price of beef weakened in October, the month of largest cattle slaughter, but recovered during November as the volume of

slaughter decreased. In December, quotations for meats moved upward appreciably, the average price advancing to a level 29 percent above that of August 1939.

Dairy Products and Eggs

DAIRY PRODUCTS

Prices of the different products derived from whole milk [10] are closely related and may be treated together. In general, the price of fluid milk and the prices of the manufactured dairy products (butter, cheese, and condensed and evaporated milk) are determined by the supply of whole milk currently available, by the level of consumer incomes, and (particularly for milk) by the operation of local price-marketing agreements. Egg prices, similarly, are largely affected by the level of consumer incomes. In the case of both dairy products and eggs, production is highly seasonal in character, attaining a maximum in the spring and early summer and tapering off to a minimum during the fall and early winter.

In the first 2¼ years of war, August 1939 to December 1941, the prices of dairy products and eggs moved upward substantially. This general advance, occurring despite an increase in production that carried output to record levels, resulted principally from rising civilian purchasing power and from Government purchases under the Lend-Lease program.

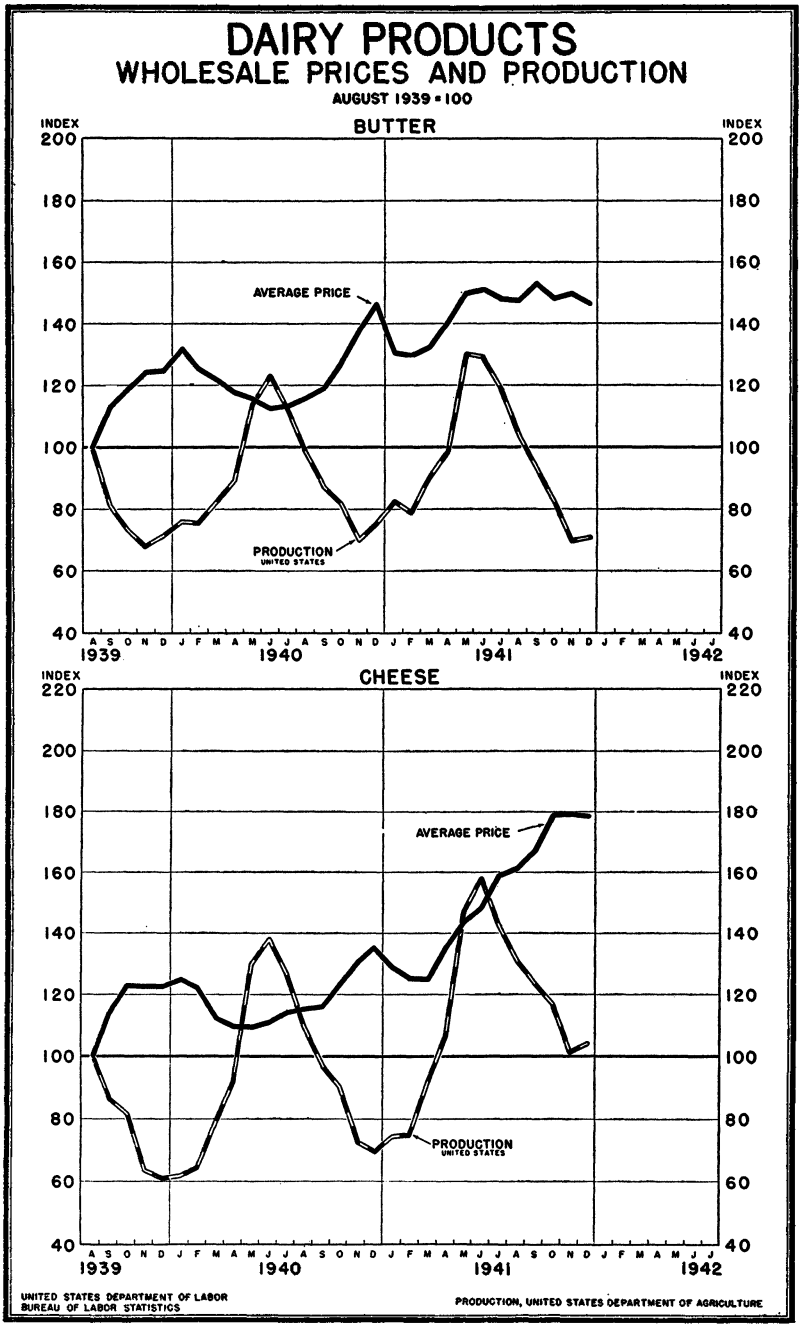
BUTTER AND CHEESE

Between August 1939 and January 1940 butter and cheese prices rose 32 percent and 25 percent, respectively. In both cases the advance, which was more than seasonal, was apparently caused by the rising level of consumption and the reduction of storage stocks from previous record holdings.

In the first half of 1940 butter and cheese prices declined slightly more than seasonally, owing to a slackening of industrial activity and an exceptionally large production of dairy products. This downward movement came to an end in June, and during the last half of the year, butter and cheese prices again advanced in more than seasonal degree. By December butter was 16.8 percent higher than during the previous December and 46 percent above its pre-war level, while the corresponding percentage changes for cheese were 11 percent and 35 percent. (See table 7.) This greater-than-seasonal rise was due not only to the increase in consumer incomes, but also to unusually rapid withdrawals from storage stocks during the previous months to meet a strong demand.

In the first few months of 1941 the prices of butter and cheese began a seasonal decline which ordinarily continues into June, the month of peak production. Between March and June 1941, prices of these two products advanced contraseasonally, despite a record volume of output. This unusual movement, partly owing to a greater consumer demand, was intensified by large purchases of butter and cheese in May, June, and July for storage purposes and by the an-

[10] "Whole" milk should not be confused with "fluid" milk. Whole milk is the raw unprocessed milk sold by the farmer, fluid milk the pasteurized milk sold by the distributor. Whole milk is the raw material from which fluid milk, butter, cheese, and other products are derived.



nouncement on April 3 of a program of Government purchases of "food-for-defense," under the provisions of which very large quantities of dairy products, including cheese, were purchased by the Government for shipment to Great Britain.[11]

The price of cheese continued to advance in July and August, while the price of butter remained at approximately its June level. In August 1941, at the close of 2 years of war, the price of butter was 48 percent higher than in August 1939; the advance in the price of cheese during the same period amounted to 61 percent.

Cheese prices increased further during the fall of 1941, and in December were 79 percent above the pre-war level. This price advance occurred largely because of substantially increased Government purchases which, from March 15 through November 1941, accounted for approximately 19 percent of cheese production. The fact that butter was not purchased by the Government in significant amounts at this time resulted in a proportionately smaller increase in butter prices; in December 1941, they were approximately 46 percent above the August 1939 level.

FLUID MILK

In general, the wholesale price of fluid milk varies with the price paid by distributors to the farmers for whole milk. The basis for the determination of fluid milk prices varies locally to a great extent. In many important milksheds, for example, the price paid to the farmers for whole milk is determined by formulas established under the terms of the Agricultural Marketing Agreement Act of 1937. The large New York and Chicago markets are discussed here as being representative of such milksheds, although the agreements controlling them vary from one locality to another.

In the New York milkshed the marketing agreement provides that the price paid to the farmer for milk used as fluid milk shall vary with the wholesale price of 92 score butter in New York, but shall not fall below a certain minimum. The marketing agreement of the Chicago milkshed stipulates that the price paid the farmer for milk used as fluid milk shall vary with the wholesale price of 92 score butter in Chicago and with the wholesale price of "Twins" or "Cheddars" cheese in Plymouth, Wis.[12] In both milksheds seasonal differentials in the price paid for milk are established.

Since the price of whole milk for fluid use is everywhere generally affected by the prices of butter and cheese, in certain important areas being specifically related to them by formula, the price of fluid milk to distributor and consumers in turn tends to vary with the prices of these two commodities for which trends have already been described.

In three leading cities—New York, Chicago, and San Francisco—for which distributors, prices are reported to the Bureau of Labor Statistics, the rise in fluid milk prices during the fall of 1939 was slightly greater than seasonal, while the approximately seasonal

[11] The prices of butter and cheese have been supported to a slight extent since 1939 by the operations of the Federal Surplus Commodities Corporation (later named the Surplus Marketing Administration) and the Dairy Products Marketing Association. The Surplus Marketing Administration purchases foods for relief distribution. The Dairy Products Marketing Association purchases dairy products when their prices are low and sells them when their prices are high. Purchases and sales by both agencies, however, have been very small in relation to the total volume of these dairy products.

[12] As described subsequently, the basis for computing the price of fluid milk in Chicago was changed on September 6, 1941.

decline, beginning in the early winter and continuing through June 1940, was followed by a more than seasonal upturn during the last half of the year.

Throughout the fall of 1939 and the year of 1940 the production of milk and dairy products was maintained at record levels. The downward influence of the large volume of production on prices was offset by strong consumer demand, by Government purchases of butter, and by the British Purchasing Commission's demand for condensed, evaporated, and dry skim milk.

In the early winter of 1941 milk prices began their usual seasonal decline, which normally continues through June. In that year, however, the decline, as in the case of butter and cheese, was arrested in March when prices began to increase contraseasonally. The rise of Chicago prices and of prices paid to farmers throughout the country continued through June, ordinarily the month of lowest levels. In New York, however, milk prices declined in April and May, owing to a provision in the New York marketing agreement that a seasonally lower price must be paid for milk from April through July. The reduction under this provision outweighed the price increase which, by the terms of the formula, would have resulted from the price advance of butter. In May, however, the New York marketing agreement was amended to allow a rise in the price of milk, beginning in June.

The contraseasonal price advance in the spring of 1941 and the continued steady increase through December of that year, in spite of new high records of production, carried the prices of fluid milk in New York and Chicago to points 27 and 67 percent, respectively, above their pre-war levels. The principal cause of this rise continued to be the strong demand for dairy products resulting both from the steadily rising level of consumer incomes and the increasing Government purchases under the food-for-defense program. Between April and December 1941 large quantities of manufactured dairy products were purchased for transfer to Great Britain at prices designed to increase their production. This program stimulated fluid milk prices in two ways; first, by raising the prices of manufactured dairy products upon which fluid milk prices depend, and second, by reducing materially the supply of whole milk available for fluid use in several important milksheds, particularly in Chicago.

In addition, the demand for dairy products, and thus for milk, was reinforced during the summer of 1941, when prices were seasonally low, by unusually large cold-storage purchases to be held for the higher winter prices. Prices in the Chicago milkshed were further stimulated by an alteration in the marketing agreement. In accordance with the change, the price of fluid milk, as of September 6, was no longer to be dependent directly upon the prices of butter and cheese but instead was to be calculated on the basis of the average price paid to farmers at 18 specified evaporated-milk plants in Michigan and Wisconsin, plus a stated differential. The adoption of the new basis led to a considerable increase in prices, owing principally to the large-scale demand for evaporated milk by the Government, which purchased approximately 14 million cases between March 15 and November 30, 1941.

In the New York milkshed no fundamental change occurred in the marketing agreement, but it was amended as of October 1 in order to

raise the price of fluid milk, and the price of whole milk, thus compensating farmers for increased costs resulting principally from the pronounced shortage of farm labor in the East and from the extended drought.[13]

EGGS

Egg prices, like those of dairy products, undergo wide seasonal fluctuations in response to seasonal changes of production. The production of eggs reaches a maximum in April, declines rapidly thereafter to a low point in November, and then increases again to its April peak. Egg prices, in general, move inversely to the volume of egg production, ordinarily reaching a low point in April and a peak in November.

The price of eggs, as reflected in the Bureau of Labor Statistics wholesale price quotations for "firsts, New York," remained comparatively steady during the first year of the war; the price in August 1940 being only 5 percent higher than the August 1939 level of 16.3 cents per dozen. During this 12-month period the ordinary seasonal price movements prevailed except during the first 5 weeks of 1940, when, as a result of cold weather, production slackened and prices rose contraseasonally.

This relative stability of price resulted from the attainment of a balance between an increasing production of eggs, which was especially large in the spring and summer of 1940, and a generally improved demand for farm products.

In the second year of the war, however, egg prices turned sharply upward, and by August 1941 had reached a level of 28.3 cents per dozen—74 percent higher than in August 1939. The increase in price during the fall of 1940 was greater than seasonal and continued into December, a month longer than usual. The price decline which ordinarily occurs between November and May was, during 1941, interrupted in February and March by contraseasonal price rises. Prices continued to advance sharply in April, May, and June, ordinarily the months during which they are at their lowest levels, while in July and August they rose still further, though at a slower rate.

The extraordinary upturn in the price of eggs during the second year of the war was due to the constant increase in consumer demand, to large-scale purchases for storage, and to a decline in output, the production of eggs being smaller in 1940–41 than in 1939–40. The contraseasonal advance in price during the spring of 1941 was given added impetus in April upon the institution of the "food for defense" program. The Government announced that it would support the prices of eggs and began to purchase them in large quantities for transfer to Great Britain.

Egg prices advanced rapidly from August through November 1941, but this increase was entirely seasonal, resulting from a decrease in production. Nevertheless, wholesale egg prices in November 1941 reached a peak of 36.6 cents per dozen—54 percent above the level of November 1939 and 124 percent above their pre-war figure. In December, a seasonal decline lowered the level to 113 percent above August 1939.

[13] In 1941, 19 out of the 21 Federal milk-marketing orders were amended in order to raise the price of whole milk.

TABLE 7.—*DAIRY PRODUCTS AND EGGS: Wholesale-Price and Production Indexes, August 1939–December 1941*

[Sources: Wholesale prices—U. S. Bureau of Labor Statistics; production—U. S. Bureau of Agricultural Economics]

Year and month	Wholesale-price indexes (August 1939=100) of—					Production indexes (August 1939=100) of—				
	Butter [1]	Cheese [2]	Milk, fluid (New York)	Milk, fluid (Chicago)	Eggs, firsts (New York)	Butter (U. S.)	Cheese (U. S.)	Milk, fluid (New York)	Milk, fluid [3] (Chicago)	Eggs, total receipts (New York)
1939										
August	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-------	100.0
September	113.1	113.7	109.5	112.4	116.7	81.1	86.1	106.2	100.0	87.5
October	118.7	122.8	117.0	116.9	127.4	73.3	81.4	106.9	103.4	72.0
November	124.0	122.4	117.0	119.2	145.4	67.7	63.3	97.9	104.1	68.9
December	124.7	122.4	117.0	109.9	125.9	71.4	60.9	107.4	118.8	88.1
1940										
January	131.8	124.6	117.0	112.7	132.0	76.0	61.7	112.2	127.8	102.2
February	125.2	122.0	117.0	108.2	144.3	75.6	64.4	110.6	127.0	101.4
March	121.6	112.1	117.0	105.4	108.3	82.4	79.3	133.8	142.7	165.8
April	117.8	109.4	117.0	103.0	106.4	89.1	92.2	145.4	144.0	171.6
May	115.8	109.2	104.4	95.9	106.2	113.8	129.9	170.0	152.4	176.1
June	112.5	110.6	104.4	95.5	101.8	122.9	138.3	176.9	160.8	142.6
July	113.4	114.1	104.4	110.6	100.9	112.1	126.5	149.2	143.1	126.5
August	115.8	115.4	104.4	111.5	105.1	98.9	109.3	128.0	129.5	96.9
September	119.1	116.1	104.4	112.7	127.3	87.0	97.0	112.4	122.9	87.1
October	126.7	122.7	104.4	118.1	137.2	81.7	90.3	112.6	123.0	86.9
November	137.9	130.6	111.2	125.6	147.3	69.8	72.8	99.4	116.4	76.8
December	146.3	135.3	111.2	121.5	161.4	75.1	69.6	106.8	132.8	78.4
1941										
January	130.5	128.7	111.2	111.6	119.0	82.3	74.4	112.0	146.7	110.8
February	129.6	125.0	111.2	110.7	108.3	78.9	74.9	106.8	139.5	110.1
March	132.5	124.8	111.2	111.6	118.2	90.3	91.9	134.5	161.0	130.8
April	140.3	135.3	104.4	117.8	138.3	98.6	106.3	151.5	163.4	164.4
May	149.7	143.5	95.9	118.3	145.4	130.0	147.0	183.9	186.3	156.4
June	151.0	148.2	102.7	119.9	158.5	129.3	158.1	177.6	174.8	131.1
July	147.9	158.9	111.2	134.6	166.3	118.6	142.4	132.1	157.6	119.1
August	147.5	161.3	119.0	136.6	173.0	103.4	130.9	132.7	150.7	82.7
September	153.0	166.8	119.1	156.6	184.7	93.1	123.5	122.6	135.3	86.5
October	147.9	178.9	126.8	163.4	196.5	81.9	117.2	120.3	134.0	76.9
November	149.7	179.0	126.8	165.9	223.9	69.5	101.3	108.9	127.2	55.9
December	146.3	178.5	126.8	166.6	213.1	71.1	103.7	116.8	140.8	89.8

[1] Average of 17 quotations.
[2] Average of 3 quotations.
[3] September 1939=100. No figures for previous months available.

Fruits and Vegetables

During the first 2¼ years of war the wholesale prices of fresh and canned fruits and vegetables generally rose as a result of increasing consumer demand and Government purchases for the armed forces and for shipments under the Lend-Lease program. Lend-Lease purchases for the most part offset the loss of export markets, and in some cases provided a net gain in demand or an entirely new outlet.

FRESH FRUITS

Oranges.—After a rise of 17 percent between August and September 1939, the wholesale price of oranges declined sharply and in January 1940 was 25 percent below the pre-war level. (See table 8.) This decline was largely seasonal in character, as large quantities of Florida oranges are marketed during the fall and winter. During the ensuing months the price rose and was 3 percent higher in June 1940 than in August 1939. Until the end of 1940 the price fluctuated irregularly, close to its pre-war level, while at the turn of the year there was

another decline; during 1941 the price of oranges remained near this low level, and in July of that year, after almost 2 years of war, oranges were selling for 1.2 percent less at wholesale than at the beginning of the war. Between July and August 1941, owing to a temporary shortage of market supplies, a sharp rise of 21 percent occurred which carried the price of oranges to a point 20 percent higher than in August 1939; during the fall of 1941 prices fluctuated seasonally and in December were 12 percent below the pre-war level.

Throughout the Defense Period the price of oranges was subjected to the depressing influence of extraordinarily large supplies.[14] Average annual production for the 10 years 1929–38 was 56.1 million boxes. Production in the 1938–39 crop-year was 78.5 million boxes; in the 1939–40 crop-year, 75.7 million boxes; in the 1940–41 crop-year, 84.1 million boxes; and the indicated production for the crop-year 1941–42 was 84.5 million boxes, a new record high.

The large volume of output during this time exerted a downward pressure on the price of oranges which offset the stimulus of strengthening demand provided by the growing purchasing power of consumers and reenforced by Government purchases. Between July 1939 and August 1941 the Government bought approximately 2.4 percent of the combined output of the 1939–40 and 1940–41 crop-years for purposes of relief distribution and for transfer under the Lend-Lease program to countries fighting the Axis.

Lemons.—After rising in the fall of 1939, the wholesale price of lemons declined, and during 1940 and 1941 fluctuated seasonally at levels which were, for the most part, below that of August 1939. The price of lemons in November 1941 was 9.3 percent below the pre-war level.

As in the case of oranges, lemon prices were depressed during these 2 years by record-breaking levels of output. Average annual production for the years 1929–38 was 8.2 million boxes; while production in the 1938–39 crop-year was 11.1 million boxes, in the 1939–40 crop-year 11.9 million boxes, and in the 1940–41 crop-year 17.1 million boxes. The 1941–42 crop-year production was estimated in December 1941 to be 14.6 million boxes.

The effect of these large supplies upon price more than offset the stimulus of rising consumer purchasing power, which during most of the 2¼-year period was not supplemented by any Government purchases of lemons.

Apples.—Between August 1939 and June 1940 the wholesale price of apples advanced 109 percent, a considerably greater than seasonal increase. The rise in price occurred despite a large production, amounting to 143.1 million bushels, in the 1939–40 crop-year (July through June), compared with an average production for the previous 5 years of 125.3 million bushels. Furthermore, exports of apples during this crop-year were only 3.2 million bushels, or about 2 percent of the amount produced, whereas in the previous crop-year (1938–39) approximately 10 percent of the amount produced was exported.

In spite of these large supplies a price rise occurred between August 1939 and June 1940, owing mainly to the ability of consumers to increase their purchases at rising prices. During this time, also, the

[14] The supplies of grapefruit, which compete with oranges for the consumer's dollar, were also very large at this time. The 1939–40 and the 1940–41 grapefruit crops were, respectively, 60 percent and 96 percent greater than the average annual crop for the 10 years 1929–38; the indicated 1941–42 crop was 89 percent greater than the 1929–38 average.

Government, through the Federal Surplus Commodity Corporation, bought 9 million bushels or more than 6 percent of the 1939–40 crop. The loss of export markets was offset to a considerable extent by these purchases.

During the 1940–41 crop-year the usual seasonal price movements took place—a decline in the latter half of 1940 and a rise in the first half of 1941—the price in the 1940–41 crop-year averaging 10 to 15 percent higher than in the previous year. The principal cause of the higher price, other than improved consumer demand, was a 20-percent reduction in the amount of apples produced. Furthermore, Government purchases remained large, amounting to approximately 7 million bushels in the 1940–41 crop-year, and an additional 5.2 million between July and November 1941. The combined effect of these factors more than offset the further loss of export markets. In November 1941 the price of apples was 20 percent higher than in November 1940 and 83 percent higher than at the beginning of the war, and further price increases occurred in early December.

Bananas.—Prices of bananas fluctuated very widely during the Defense Period, in response to changes in the quantity and in the condition of bananas which reached American ports. Throughout most of 1941 price levels were high and in October reached a point 71 percent above that prevailing in August 1939. In November and December the price of bananas dropped sharply.

The shortage of shipping space, which was the chief limit upon supplies in the United States, became more and more pronounced as the National Defense Program progressed. In the year from July 1939 through June 1940, 54.1 million bunches of bananas were imported. This figure was close to the annual average (54.5 million bunches) for the previous 5 years. In the year July 1940 through June 1941, imports were reduced to 51.7 million bunches. Contributing to this decline was the fact that the United Fruit Co. had been forced to terminate its charter of a number of merchant vessels owned by Great Britain.

DRIED FRUITS

The average wholesale price of dried fruit, as represented by the composite price of dried apricots, prunes, and raisins, rose 28 percent between August and September 1939, as consumers, fearing war shortages, bought heavily. After September, however, the price declined steadily and in April 1940 reached its pre-war level, remaining at this level through August 1940. The decline was caused both by the production of ample supplies of dried fruit, especially of apricots and raisins, and by a drastic curtailment of foreign demand beginning early in 1940. Ordinarily about 40 percent of the dried fruit is exported, chiefly to the United Kingdom and to Europe.

From August 1940 to December 1941 a considerable rise occurred in the price of these fruits, amounting to 70 percent in the 16-month period. A number of factors contributed to this increase. The production of dried fruits was sharply curtailed in the 1940–41 crop-year, as is shown in table 8. Furthermore, a combined program of Federal loans to growers and State control of supply limited the amount of prunes and raisins available in commercial channels. Also, in March 1941 the Government began purchasing large quantities of dried fruit, much of it for transfer to England. Between March

15 and August 30, 1941, the Government bought 95 thousand tons of dried prunes, equivalent to about 53 percent of the 1940–41 production; 7,900 tons of dried apricots, approximately 60 percent of the 1940–41 production; and 31,100 tons of raisins, about 18 percent of the 1940–41 output. During the following 3 months (September through November 1941) additional Government purchases of 40 thousand tons of prunes, 887 tons of dried apricots, and 18,376 tons of raisins were made.

CANNED FRUITS

The wholesale prices of canned fruits are, as a rule, much more stable than the prices of fresh fruits. Not only are canned fruits processed and branded products, but the price which the canner pays for his entire year's supply of fruit is fixed in advance by contract, thus enabling him to maintain a stable price for his products. From August 1939 to March 1941 the composite wholesale price of six canned fruits [15] varied within a range of less than 4 percent, and in March 1941 the price was only 3.3 percent higher than in August 1939.

By November 1941, however, the price reached a point 25 percent above August 1939, and by December 1941 it was 31 percent above its pre-war level. This rise was due not only to the stimulus of increased purchasing power, but also to the fact that wholesalers, retailers, and even consumers purchased heavily to build up inventories in anticipation of higher prices. The Government also entered the market to obtain supplies for its armed forces and for transfer to Great Britain.

The advance in the wholesale price between March and December 1941 was especially pronounced in the case of canned apples which rose 49 percent, and canned peaches which increased 54 percent. These two canned fruits were purchased by the Government in largest quantities, particularly for the Army. In July 1941 it was estimated that Army and Navy requirements for canned apples and peaches from the 1941 pack would amount to 10.2 and 4.1 percent, respectively, of the 1940 pack. The resultant rise in their prices was largely responsible for the 1941 increase in the composite price of canned fruits.

FRESH VEGETABLES

During the 2¼ years between August 1939 and December 1941, the composite wholesale price of white potatoes, sweetpotatoes, dry beans, and onions, while experiencing the usual wide seasonal fluctuations, moved generally upward, with the result that in December 1941 it was 52 percent higher than in August 1939. This increase, which occurred despite somewhat larger than average production, reflected both the growth in consumer buying power and the stimulus of Government purchases.

The price movements of fresh vegetables are illustrated below by a description of the behavior of the prices of white potatoes and of dry beans, which together account for 81 percent of the value of these four vegetables included in the Bureau of Labor Statistics index.

White potatoes.—The average wholesale price of white potatoes rose 44 percent between August 1939 and June 1940. The advance during

[15] Apples, apricots, cherries, peaches, pears, and pineapple.

this period was greater in Chicago, where prices rose from $1.09 to $2.01 per 100 pounds, than in Boston, where the increase was from $1.42 to $1.91 for the same quantity. This advance, though largely seasonal, was also due in part to the influence of decreased supplies. During the 1939–40 crop-year, potato production totaled 364.0 million bushels, compared to 371.6 million bushels in the previous year and to an average of 366.9 million bushels during the 10-year period 1929–38.

The price of white potatoes was marked by a greater than seasonal decline during the summer and fall of 1940, after which it remained at unusually low levels throughout the winter and early spring of 1941. An uncommonly large intermediate crop, which came into the market in July 1940, was the principal cause of the sustained low price. Although the total production for the crop-year 1940–41 was only 3.9 percent greater than that for 1939–40 and 3.1 percent larger than the 1929–38 average, the presence of this large intermediate supply exerted a downward pressure upon prices which more than offset the influence of increased consumer purchasing power. The Government, in an effort to support prices, bought 5,275,000 bushels of potatoes between July 1, 1940, and March 15, 1941, and during the winter also paid growers 25 cents per 100 pounds to divert from commercial channels 19 million bushels which were subsequently used for livestock feed and for the manufacture of starch.

Between May and June 1941 the price of potatoes rose 62 percent, prices in both Boston and Chicago reaching their peaks for the Defense Period—$2.23 and $2.21, respectively, per 100 pounds—in June. This advance was so great that, even after a steep seasonal decline in the 2 following months, the price in August 1941 was 16 percent higher than at the beginning of the war. This sharp rise, which came at the turn of the crop-year, was the result of a short intermediate crop, 7 percent below the intermediate crop of the previous year.[16] In addition, prices received moderate support from continued Government purchases, which between March 15, 1941, and November 30, 1941, amounted to 2,292,758 bushels. By December 1941 the price had risen to a level 24 percent above that of December 1939, and 43 percent above the pre-war level.

Dry beans.—From August to September 1939 the wholesale price of dry beans rose 54 percent as consumers, fearing a war shortage of this commodity, made heavy purchases. In October, however, the price lost about half of this gain, and then continued to fall gradually, with little fluctuation, to 15 percent above its pre-war level in March 1941.

The 1939–40 production of 14 million bags of dry beans was moderately above the 1929–38 annual average of 13.1 million bags; the 1940–41 production was considerably larger, 16.9 million bags, or 23 percent more than the 1929–38 average. These large crops were primarily responsible for the gradual decline in the price of dry beans from October 1939 to March 1941. In addition, with consumer incomes steadily advancing, a movement developed toward the purchase of higher priced vegetables. The price of dry beans began to advance rapidly in March 1941, however, and by December 1941 had risen 70 percent to a position 95 percent higher than the August 1939 level. The principal cause of this price advance was the institution in March 1941 of the

[16] The Agricultural Situation (U. S. Department of Agriculture), August 1941, p. 8.

"food for defense" program. Although the Government had bought substantial quantities of dry beans in the months before the outset of this program, under its provisions the tempo of purchasing was accelerated. From March 15 to August 30, 1941, the Government bought 1,794,000 bags of dry beans, or slightly over 11 percent of the 1940–41 crop; from September through November 1941, 196,750 additional bags were purchased. These purchases were made at a price of about $5 per 100-pound bag, approximately $2 to $2.50 above the market price in March. By the end of May the market price had risen to the $5 level,[17] and during the summer and fall it advanced beyond this level to $5.99 in December 1941.

TABLE 8.—*FRUITS AND VEGETABLES: Wholesale-Price Indexes, Fresh, Dried, and Canned, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Wholesale-price indexes (August 1939=100) of—								
	Fresh fruits				Fresh vegetables				
	Oranges	Lemons	Apples	Bananas	Average [1]	White potatoes [2]	Dry beans	Sweet-potatoes	Onions
1939									
August	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
September	117.4	111.0	124.9	107.8	106.4	108.2	153.5	61.5	101.2
October	103.8	106.6	128.1	124.1	98.8	108.5	125.4	45.0	68.6
November	107.5	115.8	130.6	115.7	104.7	114.6	121.1	60.0	69.3
December	91.3	101.7	138.3	135.8	104.7	115.3	122.0	56.3	70.2
1940									
January	75.4	95.4	140.4	98.0	112.8	124.1	130.0	60.8	81.0
February	82.6	89.4	139.3	121.2	111.6	120.0	130.3	60.8	111.6
March	79.6	82.1	147.1	116.5	112.9	120.8	126.6	72.9	96.1
April	93.7	79.8	160.3	103.5	127.3	128.5	125.1	116.2	152.9
May	90.1	77.5	188.2	112.9	139.2	137.7	127.0	128.6	228.3
June	103.2	100.1	209.3	114.2	150.8	143.8	126.4	139.2	353.3
July	99.4	98.4	194.2	103.1	131.9	118.0	124.6	160.0	252.9
August	95.7	95.2	159.2	118.3	113.9	104.6	120.7	136.3	150.8
September	93.7	73.0	160.8	122.0	95.4	94.3	125.8	72.6	103.3
October	98.2	86.2	148.2	125.0	85.0	81.8	125.6	57.8	106.6
November	108.6	89.4	151.9	132.0	89.5	84.0	123.8	79.4	105.4
December	102.5	78.8	162.8	111.3	94.6	85.2	119.2	107.3	115.7
1941									
January	88.9	93.3	156.4	109.1	94.3	84.3	115.6	108.4	127.1
February	82.8	78.3	153.8	[3]	98.3	86.8	114.4	121.4	138.4
March	88.5	75.8	162.8	129.6	98.1	87.7	114.8	112.6	149.8
April	87.5	69.5	177.1	159.5	110.8	96.4	139.7	108.2	240.5
May	86.1	79.6	157.2	160.2	116.5	98.4	162.1	89.5	332.6
June	94.4	97.1	184.8	125.3	166.2	159.7	164.5	105.2	461.8
July	98.8	110.8	177.3	117.6	134.0	127.5	175.9	91.8	247.9
August	119.9	101.7	164.6	131.6	122.7	115.7	175.5	103.7	137.4
September	114.6	86.9	171.9	137.9	124.3	118.2	177.5	98.5	149.6
October	129.2	103.4	180.7	171.0	127.3	122.5	186.3	90.0	171.5
November	120.2	90.7	182.7	107.2	142.7	135.5	193.4	113.3	200.4
December	87.9	114.5	189.1	97.5	151.9	143.3	195.3	127.4	232.2

[1] Includes beans, onions, white potatoes, and sweetpotatoes.
[2] Includes Boston, Chicago, New York and Portland, Oreg., quotations.
[3] No quotation, as no bananas were sold on the wholesale market during February.

[17] See The Vegetable Situation (U. S. Department of Agriculture), July 1941, p. 6.

TABLE 8.—*FRUITS AND VEGETABLES: Wholesale-Price Indexes, Fresh, Dried, and Canned, August 1939–December 1941*—Continued

Year and month	Wholesale-price indexes (August 1939=100) of—							
	Dried fruits: Average [4]	Canned fruits						
		Average [5]	Apples	Apricots	Cherries	Peaches	Pears	Pineapple
1939								
August	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
September	127.7	102.1	100.0	105.8	100.0	105.0	105.0	100.0
October	120.0	102.4	100.0	105.5	100.0	104.5	108.6	100.0
November	113.1	102.9	100.0	106.8	100.0	104.2	111.8	100.0
December	110.0	102.5	100.0	105.8	100.0	104.0	110.2	100.0
1940								
January	107.2	102.2	100.0	105.8	100.0	104.0	107.9	100.0
February	104.3	102.1	100.0	105.8	100.0	104.0	107.1	100.0
March	103.9	101.9	100.0	105.8	100.0	102.9	107.1	100.0
April	100.2	101.5	100.0	105.8	100.0	100.8	107.1	100.0
May	99.9	100.7	100.0	107.3	100.0	101.3	107.1	100.0
June	102.3	103.0	100.0	121.6	100.0	101.9	107.1	100.0
July	100.5	103.3	100.0	130.8	101.1	99.4	107.1	100.0
August	101.4	101.5	100.0	130.8	101.1	95.2	99.5	100.0
September	115.0	101.0	100.0	130.8	101.1	95.6	95.0	100.0
October	116.0	101.5	100.0	130.8	101.1	97.7	96.2	100.0
November	114.3	101.5	100.0	130.8	101.1	97.7	96.0	100.0
December	114.6	101.5	100.0	130.8	101.1	97.7	96.0	100.0
1941								
January	113.6	101.2	100.0	127.7	101.1	97.7	95.6	100.0
February	113.2	103.6	112.5	126.9	101.1	99.5	95.3	100.0
March	114.5	103.3	109.8	126.0	101.1	102.2	93.3	100.0
April	121.0	105.4	116.7	125.5	101.1	105.3	95.7	100.0
May	121.6	108.2	121.2	126.9	101.1	114.5	97.0	100.0
June	124.7	108.4	121.2	122.6	104.7	115.0	97.6	100.0
July	136.3	119.2	133.3	119.7	108.4	139.4	109.8	106.7
August	139.7	127.9	151.5	122.2	120.6	153.4	122.8	106.7
September	143.4	125.2	134.0	123.5	123.2	153.4	122.8	106.7
October	150.9	128.2	149.8	125.0	123.2	153.8	122.8	106.7
November	160.1	128.7	151.5	125.0	123.2	154.0	122.8	106.7
December	171.2	131.2	163.6	125.0	123.2	157.1	122.8	106.7

Year and month	Canned vegetables: wholesale-price indexes (August 1939=100)							
	Average [6]	Tomatoes	Stringless beans	Asparagus	Baked beans	Corn	Peas	Spinach
1939								
August	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
September	105.6	104.7	110.4	100.0	105.7	107.5	103.9	103.6
October	108.0	107.8	113.7	100.0	109.1	110.9	105.1	104.3
November	106.8	107.8	110.8	100.0	104.5	111.4	105.1	104.3
December	106.0	107.8	110.8	100.0	100.0	111.4	105.1	106.6
1940								
January	105.7	107.8	107.3	100.0	100.0	108.3	105.6	107.5
February	105.6	107.8	111.8	100.0	100.0	105.5	105.1	107.5
March	103.2	100.0	110.8	100.0	100.0	103.6	105.1	107.5
April	103.0	98.8	110.8	100.0	100.0	103.6	105.1	110.6
May	102.8	96.9	110.8	103.8	100.0	103.6	105.1	111.5
June	103.4	96.9	110.8	109.6	100.0	103.6	105.1	114.9
July	103.1	95.6	110.8	109.6	100.0	103.6	105.1	114.9
August	102.6	93.8	110.8	109.6	100.0	103.6	105.1	114.9
September	102.2	92.2	110.8	109.6	100.0	103.6	105.1	114.9
October	101.3	88.1	112.5	109.6	100.0	103.6	105.1	114.9
November	101.6	89.1	112.8	109.6	100.0	103.6	105.1	114.9
December	101.6	89.1	112.8	109.6	100.0	103.6	105.1	114.9
1941								
January	101.8	89.1	115.1	109.6	100.0	105.5	105.1	109.2
February	103.6	89.1	125.9	109.6	100.0	112.3	105.1	105.4
March	104.8	89.8	132.5	109.6	100.0	115.3	105.1	[7] 105.4
April	107.8	92.5	141.5	109.6	103.6	120.3	105.1	105.4
May	109.7	98.1	143.2	109.6	104.5	121.1	105.1	105.4
June	114.6	105.9	143.2	137.2	105.7	121.1	105.1	120.6
July	121.6	125.0	144.1	137.4	110.9	121.1	109.7	119.1
August	125.7	125.0	166.0	138.3	113.6	127.0	112.8	119.1
September	126.8	126.6	160.6	138.3	115.5	132.8	112.8	[8]
October	130.6	129.7	170.3	138.3	118.2	136.7	117.9	[8]
November	134.4	129.7	186.6	138.3	120.5	148.4	117.9	110.6
December	135.6	129.7	186.6	138.3	122.7	148.4	123.1	115.4

[4] Includes apricots, prunes, and raisins.
[5] Includes apples, apricots, cherries, peaches, pears, and pineapple.
[6] Includes tomatoes, stringless beans, asparagus, baked beans, corn, peas, and spinach.
[7] No quotations March through May 1941; price pegged.
[8] No quotation, September and October; August price used in average.

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CANNED VEGETABLES

Canned vegetables, like canned fruits, are fairly stable in price, partly because the canners contract in advance for their supply of vegetables. At the outset of the war, however, the composite wholesale price of seven canned vegetables [18] rose 8 percent by October 1939, partly reflecting efforts by consumers to accumulate supplies. Between October 1939 and January 1941 the market gradually declined, and on the latter date the composite price was but 1.8 percent higher than in August 1939. This decline was caused in large part by a weakening in the price of canned tomatoes, the production of which in 1940 amounted to 29.6 million cases, the largest pack on record and well above the 1929–38 average.

From January to December 1941 the price of canned vegetables steadily advanced until in December 1941 it was 36 percent above its pre-war level. This increase was the result of a number of causes, including the general rise in consumer purchasing power and a significant amount of forward buying to forestall future price advances by wholesalers, retailers, and consumers. In addition, the Government not only purchased canned tomatoes for its armed forces, but between March 15 and August 30, 1941, bought 4 million cases, about 13 percent of the 1940–41 supply, for transfer principally to Great Britain. During the following 3 months approximately 1 million additional cases were purchased.

TABLE 9.—*FRUITS AND VEGETABLES: Quantities Purchased by the Government, by Commodity, Specified Periods,*[1] *1939–41*

[Source: U. S. Department of Agriculture, Surplus Marketing Administration]

Commodity	Unit	July 1, 1939, to June 30, 1940	July 1, 1940, to Mar. 15, 1941	Mar. 15, 1941, to Nov. 30, 1941
Fruits:				
Apples, fresh	Bushel	9,070,766	5,939,019	6,336,835
Apricots, dried	Pound	0	0	17,474,316
Apricots, canned	Case	0	0	262,049
Oranges	Box	2,112,505	1,139,292	503,580
Peaches, canned	Case	149,663	0	572,453
Pears, canned	Case	0	0	1,004,890
Prunes, dried	Pound	93,053,040	1,430,000	269,444,000
Raisins	Pound	146,277,160	825,000	106,952,000
Vegetables:				
Dry beans	Pound	28,710,000	110,814,100	199,075,900
Onions	Pound	44,381,980	11,303,750	925,000
Potatoes, white	Bushel	0	5,275,344	2,292,758
Tomatoes, canned	Case	0	0	5,343,143

[1] These commodities are used "for domestic distribution to public-aid families and for free school lunches, to meet requirements of the Red Cross for shipment to war-refugee areas, for transfer to other countries under the terms of the Lend-Lease Act, or for release upon the market when this is desirable."

Sugar

Prices of raw and refined sugar in the United States are determined principally by the extent of domestic demand and by the amount of sugar which the Government allows to be marketed each year.

Approximately 70 percent of the domestic requirement is ordinarily supplied by imports from Cuba, the Philippine Islands, Puerto Rico, Hawaii, and the Virgin Islands. These imports consist chiefly of raw cane sugar which is processed by American companies at their refineries, located at the principal seaports. The remaining 30 percent is supplied by domestic producers who derive their product from American-grown sugar beets and sugarcane.

[18] Tomatoes, stringless beans, asparagus, baked beans, corn, peas, and spinach.

Under the terms of the Sugar Act of 1937, the Secretary of Agriculture estimates the quantity of sugar needed each year by the United States and apportions this quantity among the various producing areas.[19] In this way a limit is placed upon the amount of sugar which each area may produce for sale on the American market and thus upon the total supply of sugar annually available in the United States.

The beet-sugar industry, which is located at inland points, produces about 20 percent of the sugar consumed annually in the United States. The location of the industry "gives it preferential treatment in all markets near beet-sugar producing areas except California, because transportation costs of refined cane sugar from the seaboard are relatively high."[20]

Most of the country's annual consumption (between 60 and 65 percent), however, consists of the sugar that is refined from imported raw cane sugar. The prices of raw and refined cane sugar, while affected by the consumption of beet sugar, are therefore the controlling prices for most of the Nation's sugar supply. Since raw cane sugar represents approximately 80 percent of the cost of refined cane sugar, the prices of the two commodities are closely related and are similar in their movements.[21]

One of the outstanding price movements which occurred at the outset of the war was the increase in sugar prices. In the first days of September 1939 there occurred an increase of 28 percent in the price of refined sugar—from 4.3 to 5.6 cents per pound—while raw sugar rose from 2.9 to 3.7 cents per pound during the same period. These price rises resulted from excessive speculative activity and from heavy purchases by consumers fearing war shortages. On September 11, however, the President suspended the quota provisions of the Sugar Act,[22] thus allowing unlimited imports and marketings of sugar. Prices immediately began to fall, and by January 1940 had dropped to their pre-war levels. (See table 10.)

Although quotas were restored at the beginning of 1940, prices remained near their pre-war levels during most of the year. The failure of the reimposition of the quotas to cause an advance in prices was due to the fact that "stocks of nonquota sugar had accumulated in nearly all positions to such an extent that the quota did not become effective until late in 1940."[23] Furthermore, in the opinion of the sugar industry, the initial marketing quota for 1940 of 6,725,000 tons was larger than necessary and it was twice reduced, in February by 118,000 tons and in August by 136,000 tons. "This trade opinion, coupled with much uncertainty as to the continuance of the quota system beyond December 31, 1940, caused price depression during the greater part of the year."[24]

In the latter part of the year, however, following the second downward adjustment of quotas and the extension of the Sugar Act

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[19] Cuba, the Philippine Islands, Puerto Rico, Hawaii, the Virgin Islands, and the Continental United States beet-sugar and sugarcane areas. These areas are allotted 99.61 percent of the total quota, while the rest of the world's sugar-producing areas combined are allotted only 0.39 percent of the quota. The effect of the quota system is to raise the American price of sugar above the world price.

The act provides for a processing tax of 0.535 cent per pound (raw basis) on all sugar marketed. From the revenues derived growers are paid 0.6 cent per pound for producing not more than the quotas assigned to them and for meeting certain other requirements.

[20] The Agricultural Industries, by D. W. Malott and B. F. Martin (New York, McGraw-Hill, 1939), p. 311.

[21] Sugar Economics, Statistics, and Documents, by M. Lynsky (New York, U. S. Cane Sugar Refiners' Association, 1938), p. 5.

[22] This action automatically caused the duty on Cuban sugar to be raised from 0.9 to 1.5 cents per pound. On December 26, 1939, when the quotas were restored, the duty reverted to 0.9 cents per pound.

[23] The World Sugar Situation (U. S. Department of Agriculture), 1941, p. 5.

[24] Idem, p. 9.

in late 1940, the price of raw sugar began to advance, rising moderately in September and October 1940; refined sugar, however, remained unchanged.

The major characteristic of the sugar market in 1941 was extraordinarily heavy buying on the part of consumers, which was reflected in marked price advances during the spring. Manufacturers using sugar as a raw material, as well as wholesalers and retailers, were especially active in stocking up against expected shortages and price rises. Thus, between January and August 1941, deliveries of refined sugar to wholesalers, manufacturers, and retailers amounted to 1.2 million tons, an amount 25 percent larger than that delivered in the corresponding period of 1940.

A principal cause of this large-scale buying was the widespread fear that shipping costs might be subject to even further increases, or that shipping might at some time be interrupted. The actual rises in shipping costs which did occur provided some justification for these fears.[25]

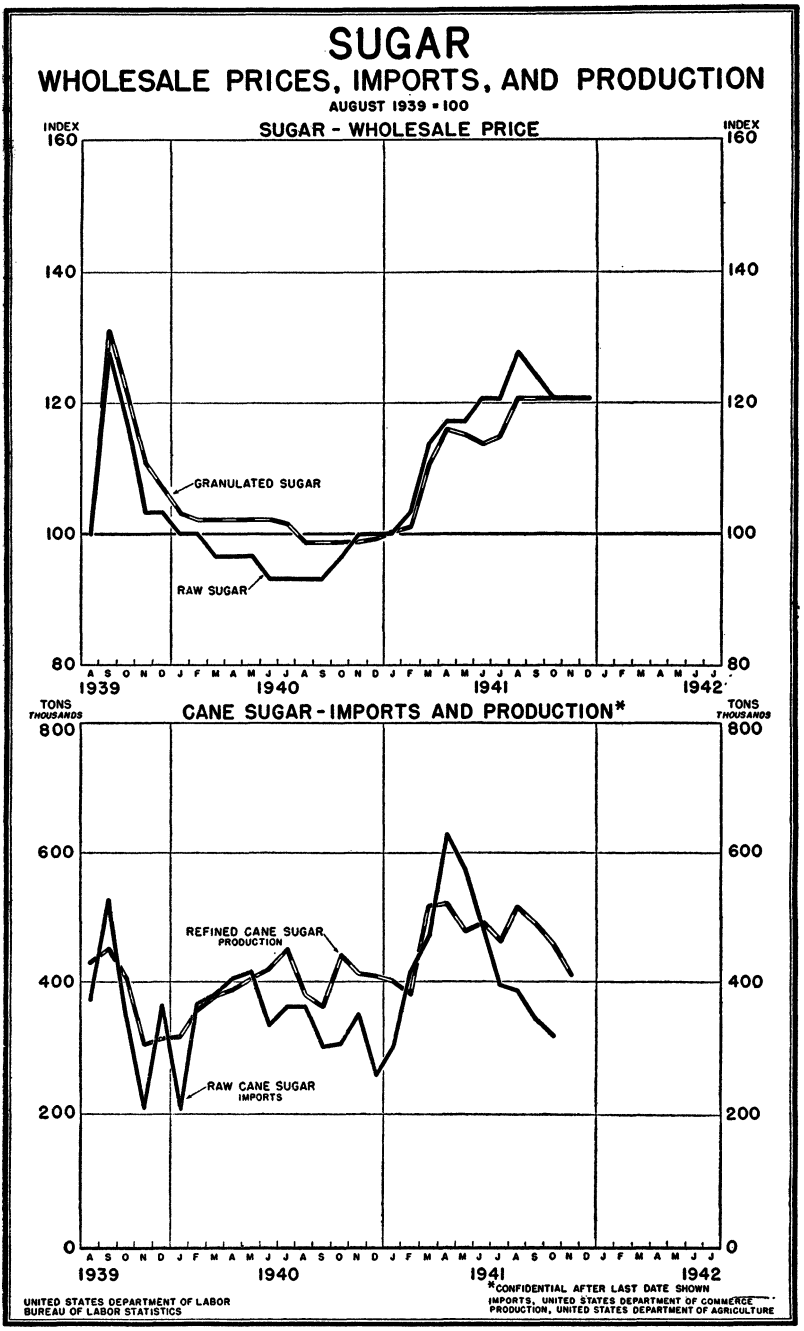
On the other hand, the quota was set at levels designed to bring in large quantities from abroad and to permit larger marketings of continental sugar, and thus relieve the pressure on prices. While the 1941 quota of 6,617,000 tons, as originally established by the Department of Agriculture, was somewhat below the amount of sugar consumed in 1940—a fact which provided a stimulus to prices early in 1941—the Department subsequently raised the quota on five different occasions (ultimately to 9,003,000 tons) in an effort to insure adequate supplies.

These upward adjustments in the quota were partly reflected by advances in imports. Total imports of raw cane sugar between January and July 1941 amounted to 3,280,680 tons, compared to 2,470,489 tons in the corresponding period of 1940, while refined sugar production, as represented by the Federal Reserve Board index of cane-sugar meltings, was 24 percent higher between January and August 1941 than during the corresponding period of 1940.

Increases in imports and production resulting from the higher quota were, however, partially offset in August 1941 by the crisis in the Orient, which threatened to cut off sugar supplied from the Philippines and Hawaii. A speculative upsurge in the sugar market resulted and between July and August the price of raw sugar rose 6 percent while refined sugar advanced 4 percent at wholesale. This upward movement, together with the advance in the spring, had by August 1941 carried the price of raw sugar 28 percent, and that of refined sugar 21 percent, above their August 1939 levels.

The rise in the wholesale price of raw sugar was halted on August 14, when the Office of Price Administration established a ceiling of $3.50 per 100 pounds on duty-paid sugar at New York. By August 13, the price had risen from a June and July level of $3.50 to $3.80. It was hoped that, because of the close relationship between the prices of raw and refined sugar, the establishment of the ceiling on raw sugar would have the effect of establishing an indirect ceiling on refined sugar.

[25] On September 1, 1939, the shipping rate per 100 pounds of raw sugar from northern Cuba to New York City was 12 cents; in the spring and summer of 1941 rates varied between 40 and 60 cents per 100 pounds. In September 1938, the rate per short ton from Hawaii to Atlantic Coast ports was $7.25 per short ton; and in August 1941 the rate was $7.75. The pre-war rate per long ton from the Philippines to Atlantic Coast ports was $6.75; by August 1941 it had risen to $25.



The retail price of sugar continued to rise for some time after the ceiling on raw sugar had been put into effect. When Price Administrator Henderson announced the $3.50-per-100-pounds ceiling on raw sugar—the price current during June and July—he stated that retail prices should likewise remain at their June and July levels. During these months the average retail price for the entire United States was 5.8 cents per pound. Many retailers, however, interpreted Mr. Henderson's statement to mean that a maximum price of 5.8 cents per pound was sanctioned by the Office of Price Administration, and, in localities where the price was below the Nation-wide average, retailers generally advanced to the 5.8-cent figure.

Raw-sugar prices declined in September after the imposition of the price ceiling, but remained above the ceiling level as a result of contracts signed before the schedule was issued. By October, prices of raw sugar had reached the level of the ceiling price (which was 21 percent above the August 1939 price), where they remained through December. The demand for sugar continued to be strong, with deliveries of refined sugar to wholesalers, manufacturers, and retailers amounting to 6.8 million tons from January to October 1941, as compared with 5.7 million tons during the corresponding period of 1940.[26]

TABLE 10.—*SUGAR: Wholesale Prices, Imports, and Production, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; imports—U. S. Bureau of Foreign and Domestic Commerce; production—Federal Reserve Board]

Year and month	Wholesale-price indexes (August 1939=100)		Imports—Raw cane sugar (in short tons)[1]	Production index (August 1939=100)—Refined cane sugar [2]
	Raw sugar	Granulated sugar		
1939				
August	100.0	100.0	372,288	100
September	127.6	130.2	526,889	120
October	117.2	120.9	345,621	101
November	103.4	111.6	210,193	74
December	103.4	107.0	363,169	75
1940				
January	100.0	104.7	208,489	77
February	100.0	102.3	365,719	90
March	96.6	102.3	381,810	92
April	96.6	102.3	407,612	95
May	96.6	102.3	416,008	92
June	93.1	102.3	332,504	113
July	93.1	102.3	361,343	113
August	93.1	100.0	361,170	92
September	93.1	100.0	300,485	99
October	96.6	100.0	305,608	110
November	100.0	100.0	349,789	109
December	100.0	100.0	259,211	95
1941				
January	100.0	100.0	303,130	100
February	103.4	102.3	416,491	102
March	113.8	111.6	472,907	131
April	117.2	116.3	628,296	131
May	117.2	116.3	575,725	114
June	120.7	114.0	486,611	128
July	120.7	116.3	422,864	114
August	127.6	120.9	387,763	132
September	124.1	120.9	328,399	128
October	120.7	120.9	(3)	106
November	120.7	120.9	(3)	111
December	120.7	120.9	(3)	(3)

[1] Includes receipts from Hawaii and Puerto Rico.
[2] Not adjusted for seasonal variation.
[3] Not available for publication.

[26] In 1942 there was a serious supply situation for sugar, owing to the shortage of shipping space, the loss of the Philippine producing area, and growing industrial uses for sugarcane.

Coffee, Tea, and Cocoa

COFFEE

Unlike many other imported foodstuffs, coffee did not rise sharply in price at the outset of the war. An increase of 3 percent, which took place between August and October 1939 in the New York wholesale price of green Brazilian coffee,[27] was followed by a general decline lasting through August 1940, by which time the price had fallen to 10 percent below its pre-war level.

Throughout the first year of the war the price of coffee was depressed, both by the presence of the usual excess supplies in South American producing areas and by the loss of European markets. The disappearance of European outlets was aggravated in the spring of 1940 when the German Army overran Denmark, Norway, Holland, Belgium, and France. Since these countries ordinarily purchase approximately 11 million bags annually, or 45 percent of the South American production, their loss as markets swelled greatly the volume of surplus stocks, driving down the price of coffee in South America and the United States, the sole remaining large-scale markets.

During the second year of the war, however, the downward movement was reversed. In October 1940, the New York wholesale price began a rise which continued without interruption through September 1941 and which was very steep between January and August of that year. This upswing carried the price in September 1941 to a point 76 percent above its pre-war level. (See table 11.)

The establishment in November 1940 of a quota system, allocating the United States coffee market among the Latin American producing nations, was the principal cause of this sharp advance. The Inter-American Coffee Agreement, as the plan is called, was signed on November 28 by the United States and the major Latin American producing countries.[28] It provided that a basic quota of 15.9 million bags could be marketed in the United States during the 12-month period, October 1, 1940–September 30, 1941. Of this total, 9,300,000 bags were allotted to Brazil and 3,145,000 bags to Colombia. A limitation was thus placed upon the total supply available in the United States and upon the amount which could be obtained from each exporting nation.

The signing of the Coffee Agreement gave an immediate impetus to the market, which was further strengthened when Colombia set minimum prices on its coffee exports. The establishment of this minimum-price system in November 1940 was followed by a series of upward revisions in the minimum prices. The importance of these increases to the American market was described as follows in the Journal of Commerce (January 24, 1941):

> Normally the price paid for Brazilian coffee would determine the trend of the market, but Colombia, coincident with the announcement of the quota plan, established minimum prices on coffee for export. Since then, with each progressive advance effected by Colombia, Brazil and other Latin American producers moved up their prices in varying degrees.

[27] Santos No. 4, the basic grade of Brazilian coffee.

[28] The agreement was not ratified by the United States Senate until February 1941, but its provisions were operative as of November 28, 1940, when it was signed. Its purpose was to raise prices and improve conditions in Latin American coffee-growing nations, and thereby to aid in implementing the "Good Neighbor Policy" of the United States. Signatories included the United States, Brazil, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Peru, Nicaragua, and Venezuela.

The effects on coffee prices of this minimum-pricing system and of the quota agreement were summarized in January 1941 by the Journal of Commerce (January 24, 1941), as follows:

> Since the coffee import quota system went into effect on November 28 last, a substantial recovery in prices realized for coffee exports has occurred in Latin American exporting countries. Quotations have returned approximately to the pre-war level, despite the fact that the loss of European markets has created large surpluses that would ordinarily depress prices severely.
>
> Before the quota system went into effect, the basic grade of Colombian coffee was quoted here at 8½ cents a pound. Today the price is 11 cents a pound, or close to the average of 12 cents quoted for August 1939. The minimum-price system for coffee exports established by Colombia may raise quotations further over a period of time.
>
> The price of Brazilian coffee has risen from 6.75 cents for the basic grade to 7.75 cents under the import quota system. The quotation is now above the pre-war price of 7¼ cents a pound.

The expectation on the part of buyers of continued raising of the minimum prices, and the probability that Brazil would follow Colombia's lead, resulted in speculative buying and the accumulation of large inventories. In March 1941, according to the Journal of Commerce of May 15, 1941—

> Leading national roasters and some of the bigger importers * * * took overnight the remainder of Brazil's 9,300,000-bag allotment for the United States. This quantity, which amounted to about 3,000,000 bags, is now being held for higher prices by importers or in the case of the national roasters to keep down their roasted retail price for competitive purposes.

Brazil's quota for the 12-month period, October 1940–October 1941, was thus exhausted in March, and by the third week in May, Colombia's quota was also completely filled.

This filling of the quotas, the fears of a tighter shipping situation, and the desperate attempts to obtain supplies on the part of smaller roasters, who were caught short after their larger rivals had purchased most of the obtainable supplies earlier in the spring,[29] combined to raise the wholesale price of coffee to even higher levels during the first half of 1941. In May the price in the United States for Brazilian coffee was 1½ to 2 cents higher than in Canada, which was not a signatory to the Inter-American Agreement.

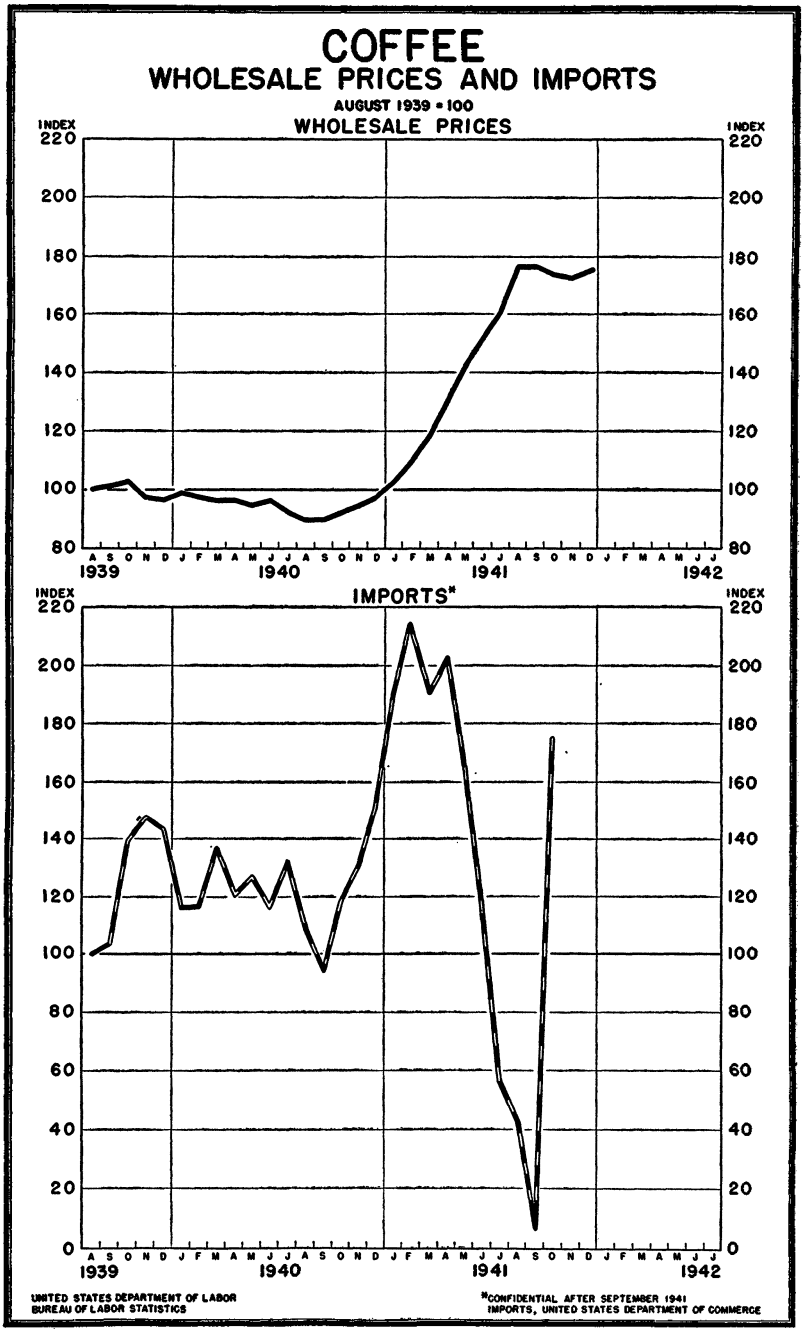
Beginning in May 1941 several steps were taken to restrain prices, which, however, proved ineffectual, quotations continuing to rise month by month until September. The import quota for the year October 1940–September 1941 was raised by 705,000 bags. Although it was specified that these added supplies could not be used until October 1, 1941, their presence in this country temporarily alleviated fears of any shortage due to shipping difficulties.[30] As shown on the accompanying chart, imports of coffee were substantially larger in the months from September 1940 to October 1941 than between August 1939 and August 1940.[31]

The increase of the 1940–41 quota and the accumulation of coffee stocks in this country, however, had little effect in restraining prices. In July, Brazil established minimum prices for its export coffee at levels higher than those prevailing in the market. Since quotations

[29] On July 1, 1941, stocks of coffee held by large roasters, importers, chain stores, and brokers were 60 percent larger than on the same date in 1940. (U. S. Department of Commerce, Industrial Reference Service: The U. S. Tea and Coffee Industries, September 1941 and October 1941, p. 3.)

[30] The monthly size of coffee stocks in the United States between September 1940 and October 1941 averaged 1,600,000 bags, compared with an average of 950,000 bags between August 1939 and August 1940.

[31] The extraordinary drop in imports between May and September 1941 was due simply to the exhaustion of the quotas and consequent prohibition of imports.



for the coffee had lagged considerably behind those of Colombia after November 1940, the price of Brazil coffee (Santos No. 4) rose in New York from 11⅝ to 12¼ cents per pound.[32]

Following this advance, the Inter-American Coffee Board tentatively announced on August 11 that the quota for the ensuing year, October 1941–September 1942, would be raised 25 percent above the basic figure of 15.9 million bags, which had been in effect during the previous year. This announcement eased the market and the average price of coffee in September 1941 remained at the August level, even though Colombia on September 21 increased its minimum export price for the quota year beginning October 1, 1941.[33]

On October 23, the Coffee Board definitely established the quota for 1941–42, 10 percent above that of the preceding year. Although this represented a reduction from the 25-percent increase previously announced on August 11, the definite action of the Coffee Board ended the circulation of conflicting rumors in the market [34] and prices moved slightly downward during October and November, and then up again in December to a level 75 percent above August 1939.[35]

TEA

Immediately after the outbreak of the war, the price of tea at New York advanced sharply, rising 20 percent between August and October 1939. This rise was due to the general expectation of war-induced shortages and to a tendency on the part of sellers to wait for higher prices.

The advance was followed by a period of complete stability, as from November 1939 to April 1940 the price remained unchanged. Supplies were larger, as the International Tea Committee in October 1939 had increased the quota of the exporting countries.[36] The upward revision in the quota, together with the inactivity on the Western Front during the first part of 1940, eased the tension in the market.

However, with the German invasion of the Low Countries and France, and the resultant shutting off of important markets to the tea trade, the price of tea declined. It fell 14 percent between March and June 1940, which brought it 2 percent below the August 1939 level; but in July, the price advanced to the pre-war position where it remained through November. (See table 11.)

The market then began to rise, with the price advancing steadily to a level, in December 1941, 51 percent above that of August 1939. This rise was caused by an increase in consumer demand and by the actions of importing nations augmenting their stocks of tea. In spite of the rising costs and difficulties of shipment, monthly imports into the United States between November 1940 and August 1941 averaged 8,880,000 pounds, as compared with 8,305,000 pounds during the period August 1939 to November 1940.

[32] Wall Street Journal, July 10, 1941.

[33] Journal of Commerce, September 22, 1941. Prices were raised proportionately more on the lower grades in order to discourage their output. Brazil, however, made no change in the minimum export prices which it had established in July.

[34] A provision was included, however, that if the shipping situation appeared to be threatening, producing countries would be allowed to send before September 1942 up to 15 percent of their 1942–43 quotas; the coffee so admitted was to be held in reserve for use in 1942–43.

[35] According to information obtained by the Bureau of Labor Statistics, the rise in shipping costs between the outbreak of the war and November 1941 was responsible for only 9 percent of the increase in the price of coffee.

[36] The Tea Association of India, Ceylon and the Netherlands East Indies—the major exporting countries—are signatories to the International Tea Agreement which provides for the control of production and marketing. The controlling agency, known as the International Tea Committee, determines the annual export quota for each country.

The International Tea Committee authorized the release on August 1 of extra tea for export from Ceylon, India, and the Netherland Indies, thus increasing the amount available for export from 95 to 100 percent of the basic quota. In October the quota was again increased to 110 percent of the basic figure. However, because of war conditions and the shortage of shipping space, it seemed unlikely that either production or imports would increase materially as a result of this action. Furthermore, even if additional supplies became available from these countries, the scarcity of Japan, Formosa, and China tea would offset any increase from other sources.

COCOA

The upswing of commodity prices at the outbreak of the war lifted the price of cocoa beans 47 percent between August and September 1939. This rise, resulting partly from the fear that African cocoa supplies would be curtailed, was followed by a reaction in October and November, when about half of the previous gain was lost. In November, however, the British Government announced that it had purchased the entire 1939–40 cocoa crop of British West Africa and at the same time it was reported that Brazil's exportable supply for 1939–40 was 50 percent below that of the previous year. As a consequence of these two developments, the decline was arrested.

After moderate decreases in January and February 1940, the price of cocoa beans rose in the spring when shipping rates were advanced. By April the price had regained its September 1939 level, rising to a point 40 percent higher than in August 1939. However, with German successes in the spring and summer of 1940, and the consequent curtailment of the world cocoa markets, a decline set in. From April to August the price of cocoa beans fell 30 percent, 2 percent below the pre-war level. (See table 11.)

The second year of the war, however, brought an almost uninterrupted rise in the price of cocoa beans, and in August 1941 the price was 81 percent higher than in August 1939. Trade expectation of a quota agreement similar to that concluded for coffee was a factor in this advance.

At the same time there was a marked rise in imports, resulting from efforts of dealers and producers, particularly chocolate manufacturers, to accumulate sizable inventories. Thus, stocks on May 1, 1941, as reported by the Bureau of the Census, amounted to 4,279,000 bags as compared to 3,275,000 bags on May 1, 1940. The expansion of imports occurred in spite of sharply rising freight rates. In February 1941 the freight rate from West Africa to New York was increased from $20 to $29 per ton; in March a charter rate of $40 per ton was reported. A further advance took place in April when the British suspended dockside delivery of cargoes, thus compelling importers to hire lighters to take delivery from vessels in the harbor.

The price advance halted in June 1941, followed by a slight decline in July, which leveled off in August. This change in trend was due to repeated rumors that the Office of Price Administration would impose a ceiling on the price of cocoa beans. In June, at the request of the Office of Price Administration, the New York Cocoa Exchange lifted margin requirements for nontrade accounts from $300 to $600 per contract, the action being taken "to eliminate unjustified speculative activity."

During the fall of 1941, cocoa-bean prices again moved upward, largely on account of uncertainty regarding shipping space, and by December were 116 percent higher than in August 1939. The Maritime Commission stated in October that it could not give definite assurance that adequate cargo space from West Africa would be available, since metals were being given priority.[37] In November, after a shipping company had requested permission to add two Norwegian ships to its South American fleet which would carry full cargoes of cocoa, the Office of Production Management announced that full cargoes of cocoa would no longer be allowed, and that shipping space from South America would be allocated with regard to the requirements for strategic defense materials.[38]

TABLE 11.—*COFFEE, TEA, AND COCOA: Wholesale-Price and Import Indexes, August 1939–December 1941*

[Sources: Wholesale prices—U. S. Bureau of Labor Statistics; imports—U. S. Bureau of Foreign and Domestic Commerce]

Year and month	Indexes (August 1939=100) of —					
	Coffee		Tea		Cocoa beans	
	Wholesale price	Imports	Wholesale price	Imports	Wholesale price	Imports
1939						
August	100.0	100.0	100.0	100.0	100.0	100.0
September	101.3	103.7	109.9	97.4	146.5	58.8
October	102.6	139.1	119.7	102.1	123.3	116.7
November	97.4	147.7	119.7	132.7	120.9	121.7
December	96.1	143.1	119.7	159.4	134.9	73.1
1940						
January	98.7	116.0	119.7	159.0	130.2	98.5
February	97.4	116.3	119.7	118.2	125.6	132.6
March	96.1	136.6	119.7	107.4	130.2	63.8
April	96.1	120.6	114.1	115.1	139.5	51.0
May	94.7	126.8	98.0	65.6	125.6	86.3
June	96.1	116.1	98.3	86.8	116.3	95.6
July	92.1	131.9	100.0	97.6	109.3	176.7
August	89.5	108.7	100.0	95.7	97.7	151.8
September	89.5	94.1	100.0	103.8	104.7	107.0
October	92.1	118.1	100.0	120.4	104.7	128.9
November	94.7	131.2	100.0	124.9	114.0	129.0
December	97.4	152.0	111.3	125.2	123.3	173.9
1941						
January	102.6	190.0	114.1	104.5	118.6	145.0
February	109.2	214.0	114.1	118.2	134.9	118.5
March	118.4	190.5	125.4	82.6	165.1	138.2
April	130.3	202.2	124.5	103.9	167.4	134.3
May	142.1	163.9	133.8	149.2	186.0	154.6
June	151.3	115.1	135.8	130.0	186.0	147.5
July	160.5	56.0	141.1	142.4	179.1	108.2
August	176.3	42.0	145.1	103.6	181.4	72.2
September	176.3	6.8	145.1	92.2	188.4	104.1
October	173.7	(1)	145.1	(1)	186.0	(1)
November	172.4	(1)	145.1	(1)	200.0	(1)
December	175.0	(1)	150.7	(1)	216.3	(1)

[1] Not available for publication.

Edible Fats and Oils

Because of the interchangeability among edible fats and oils, the prices of the various products in the group are closely related. Lard, the principal shortening, is a competitive product of compounds and

[37] Wall Street Journal, October 11, 1941.
[38] Journal of Commerce, November 7, 1941.

vegetable cooking fats which are composed largely of cottonseed oil and soybean oil.[39] The wholesale-price movements of lard, cottonseed oil, and soybean oil during the 2¼ years of war may therefore be analyzed together.[40] The prices of oleomargarine and of imported oils, such as olive oil, are subject to special influences and are treated separately.

LARD, COTTONSEED OIL, AND SOYBEAN OIL

Between August and September 1939, sharp advances occurred in the wholesale prices of lard, cottonseed oil, and soybean oil, which rose 38, 28, and 25 percent, respectively. These resulted largely from speculative buying in anticipation of improved demand and from the curtailment of imports of fats and oils which ordinarily comprise approximately 15 percent of domestic requirements.

Between October 1939 and October 1940, however, the trend was reversed. During this time the price of cottonseed oil dropped 21 percent to a point 3 percent below the pre-war level. Concurrently, the price of soybean oil fell 21 percent and in October 1940 was 2 percent lower than in August 1939, while lard prices declined until mid-December 1940, falling 28 percent to a point 17 percent below their pre-war level of 6 cents per pound.

Contributing largely to this general decline was the pressure of the largest production and supply of fats and oils on record. The volume of output, which during the 10 years 1929–38 averaged 8.1 billion pounds, reached a high of 8.9 billion pounds in 1939, and attained another new record of 9.5 billion pounds in 1940.[41]

A substantial part of the increased supply of fats and oils in 1940 resulted from the large output of lard in the October 1939–September 1940 hog-marketing year, when commercial production reached 1.69 billion pounds, the largest since 1933 and 272 million pounds more than in the previous year. This sharp increase in supply was responsible for the fact that the price of lard fell more than the prices of cottonseed oil and soybean oil.

In addition, wholesale prices of fats and oils were depressed in the spring of 1940 by the slackening of business activity, and in the summer and fall by the sudden curtailment of important export markets following the German conquests. At the close of 1940, prices of fats and oils were said by the Department of Agriculture to reflect—

> the record large output of tallow, grease, and soybean oil this year, the large supplies of lard available for domestic consumption as the result of the loss of export markets, and the existence of large supplies of low-priced vegetable oils in the Philippines, Netherlands East Indies, and other surplus-producing areas cut off from European markets.[42]

The decline in the prices of fats and oils came to an end, however, late in 1940. Cottonseed oil and soybean oil realized moderate gains in November and December, while lard began to advance in the latter part of December. These price rises were accelerated during 1941. By August 1941 lard was selling at wholesale for 10.3 cents per pound—72 percent above its pre-war level—while soybean oil was 94 percent

[39] In 1940 cottonseed oil and soybean oil together comprised 86.5 percent of the total weight of the fats and oils used in the manufacture of compounds and vegetable cooking fats. (Fats and Oils Situation (U. S. Department of Agriculture), July 1941, p. 16.)

[40] Other oils, such as corn oil and peanut oil, are of only minor importance. The changes in their prices are similar to the changes in the prices of cottonseed oil and soybean oil and do not require separate treatment.

[41] Total supply, which includes domestic production and net imports, was 9.5 billion pounds in 1939, and 10.0 billion pounds in 1940, compared with an average of 8.7 billion pounds in the 1929–38 period.

[42] The Agricultural Situation (U. S. Department of Agriculture), November 1940, p. 6.

higher and cottonseed oil 116 percent higher than in August 1939. (See table 12.)

These advances occurred despite an increase in output, factory production of fats and oils in the first half of 1941 being 9 percent higher than in the first half of 1940. Primarily responsible were the rise in consumer purchasing power, a decline in imports of fats and oils during the first 7 months of 1941, higher shipping costs, speculation, and heavy buying by dealers and large consumers to accumulate inventories. Moreover, following the passage of the Lend-Lease Act, the Government purchased large quantities of lard for shipment to England. Between March 15, 1941, when the Lend-Lease program was inaugurated, and November 30, 1941, Government purchases of lard comprised approximately 35 percent of the volume produced.

The increase in fats and oils prices, was particularly rapid during the first 6 months of 1941. In July the market was checked by a warning from the Office of Price Administration that a ceiling might be placed on cottonseed oil at a level below the existent price. In August, cottonseed oil made only a small advance, while lard and soybean oil declined slightly.

At the end of August 1941, the Office of Price Administration issued an order designed to restrain speculation in the fats and oils market[43] and also announced that for the time being it would not impose a ceiling on cottonseed oil. At the same time, however, a movement was started in other quarters to encourage cotton farmers to hold their cottonseed until it reached $60 per ton, the current price at that time being about $50.

Shortly thereafter, prices of fats and oils again turned upward, cottonseed-oil prices rising to new high levels by the middle of 1941, the movement gaining strength because of a small cottonseed crop. This advance occurred in spite of the institution by the Commodity Exchange Administration of a new reporting system under which any person holding five or more cottonseed oil futures contracts was required to report daily to the Exchange Administration, a regulation which was tightened later in the month and extended to include all fats and oils.

In October and November, cottonseed-oil prices declined seasonally, but were supported to some extent by the announcement that the Surplus Marketing Administration intended to buy "considerable quantities" of cottonseed oil shortening for relief distribution and Lend-Lease purposes, and rose again in December to a level 138 percent above August 1939.

Lard prices also advanced in September 1941, reaching a level of 11.1 cents per pound—their peak for the Defense Period. This advance reflected large consumer and Government demand. The usual seasonal decline in prices occurred in October and November, with the arrival of the heavy hog-slaughtering and lard-producing season. This decline, however, was lessened by the announcement that at least 25 percent of the 1942 lard production was destined for Great Britain, with an unspecified amount expected to be purchased for shipment to Russia. In December 1941, lard prices were 76 percent higher than in August 1939.

[43] Four corrective measures were adopted to eliminate speculative practices: (1) Speculative purchases for resale prohibited, (2) deliveries against future purchases to be completed within 45 days of commitment, (3) guaranties by sellers against futures declines eliminated, and (4) circulation of fictitious price quotations prohibited.

OLEOMARGARINE

The price of oleomargarine is relatively stable, reflecting the fact that it is a branded, advertised product. In addition, the bulk of oleomargarine is manufactured by 24 companies, the 4 largest firms producing nearly half of the industry's output.[44]

Between August 1939 and December 1940, the wholesale price of oleomargarine declined steadily until in the latter month it was 15 percent below its pre-war level. This decline was coincident with the fall in the prices of lard and the vegetable oils, and was due to the same general causes; namely, the loss of foreign markets and the large supplies of fats and oils resulting from record production.

TABLE 12.—*EDIBLE FATS AND OILS: Wholesale-Price Indexes, by Commodity, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Wholesale-price indexes (August 1939=100) of —					
	Lard	Oleomargarine	Cottonseed oil	Soybean oil [1]	Corn oil	Olive oil
1939						
August	100.0	100.0	100.0	100.0	100.0	100.0
September	138.2	91.7	128.1	125.0	118.3	117.9
October	118.5	90.7	122.6	123.3	120.3	128.6
November	111.5	94.8	117.0	120.1	110.9	120.7
December	116.7	88.9	124.5	120.7	110.5	114.3
1940						
January	110.0	88.9	124.5	123.3	110.9	114.3
February	111.0	88.9	125.2	123.8	110.5	114.3
March	104.7	88.9	121.9	125.0	112.2	109.7
April	109.2	88.9	123.2	121.3	112.2	105.7
May	100.5	88.9	115.0	119.6	112.9	108.0
June	100.7	88.9	108.9	108.5	108.5	120.0
July	105.8	88.9	109.1	104.3	107.3	131.4
August	92.2	87.4	100.9	100.3	101.4	135.4
September	91.7	85.2	102.0	97.8	99.2	149.3
October	85.8	85.2	97.3	97.8	99.6	166.4
November	87.5	85.2	103.4	104.6	100.5	177.1
December	83.2	85.2	106.2	111.1	109.8	185.7
1941						
January	95.7	87.4	116.1	120.7	118.1	185.1
February	104.0	88.9	112.5	113.8	122.8	184.3
March	115.8	92.6	128.6	124.8	117.8	201.4
April	137.5	96.3	156.5	154.1	140.6	234.3
May	158.2	96.3	190.0	176.9	164.5	274.3
June	168.5	98.1	207.6	193.5	181.3	266.4
July	174.0	103.7	213.2	203.6	196.7	310.7
August	171.5	103.7	216.3	194.4	191.8	310.3
September	184.8	103.7	245.7	211.6	202.6	300.0
October	173.2	103.7	233.5	211.7	200.3	305.7
November	173.8	103.7	225.2	206.3	191.8	305.7
December	176.3	107.4	237.9	213.6	193.5	312.1

[1] Domestic, refined.

Along with other fats and oils, oleomargarine rose in price between December 1940 and December 1941. This advance of 26 percent carried the price to a point, in December 1941, 7 percent above the pre-war level, and reflected the same general influences as those affecting other fats and oils. The rise was also stimulated by the Government's "food for defense" program, under the provisions of which large purchases of dairy products were made. These purchases con-

[44] In 1937 the 4 largest firms in the industry manufactured 48.9 percent of the value of all oleomargarine produced. (The Structure of Industry, 1941 (T. N. E. C. Monograph No. 27), p. 423.)

tributed to an increase in the price of butter, for which oleomargarine is a substitute, and in that way tended to raise the price of the latter product.

OLIVE OIL

Between August 1939 and December 1941, the price of olive oil was affected primarily by war developments. After a 29-percent rise from August to October 1939, the price of olive oil declined moderately through April 1940, then mounted rapidly, following Italy's entrance into the war and the consequent closing of all Mediterranean areas. The shortage of supply was subsequently aggravated by an increasingly difficult shipping situation. Imports into the United States between January and October 1941 amounted to only 8.9 million pounds as compared to 46.5 million pounds in the same period of 1940. The effect of this curtailment was such that the wholesale price of olive oil in August 1941 was 210 percent higher than in August 1939. A slight decline occurred in September, but by December prices were 212 percent above the pre-war level.

Chapter III.—Hides and Leather Products

Summary

The sharp rise in consumer purchasing power was the principal factor affecting prices of hides and leather products during the Defense Period, although military demand for Lend-Lease and for United States armed forces was important in markets for certain types of leather. Prices of hides and skins rose 50 percent on the average between August 1939 and December 1941; for leather, the average advance amounted to 21 percent; for shoes, in the manufacture of which 85 percent of all leather is consumed, the advance was 20 percent. The average increase for prices of all hides and skins, leather, and manufactured leather products as a group was 24 percent.

The sharp increase for hides and skins was in keeping with the usual behavior of these prices, which fluctuate widely. Produced as a byproduct of the meat-packing industry, the supply is governed by the demand for meat and other conditions affecting the rate of animal slaughter. During the Defense Period, cattle slaughtered in the United States increased by considerably more than 20 percent. In addition, a large quantity of South American hides and skins formerly exported to Europe was made available to American tanners when German victories closed most European markets to Western Hemisphere imports. However, the demand for hides and skins in the United States rose even more sharply than the supply, and price increases probably would have been even greater had not official maxima been imposed by the Office of Price Administration and Civilian Supply in June 1941.

As regards leather, prices are subject to the unsettling influence of widely fluctuating raw-material prices on the one hand, and the stabilizing influence of relatively inflexible shoe prices on the other. During the Defense Period, however, conventional "price lines" for shoes were varied much more than is customary and there were also indirect price increases resulting from changes in quality. The increase in leather production between August 1939 and late 1941 amounted to about 30 percent and in shoe production to more than 20 percent. Despite the great demand, the advance in prices was restricted somewhat by the availability of various leather substitutes, competition within the leather industry, and the fact that production costs other than those for raw materials were relatively stable.[1]

Manufacturers' prices of shoes are fixed on a seasonal basis, usually twice a year, and are normally kept fairly stable by the general practice among retailers of adhering to conventional price lines, particularly for women's shoes. However, price lines for shoes of all kinds were revised upward sharply during the Defense Period. Although increases on a percentage basis between August 1939 and December 1941 were roughly the same for leather as for shoes, a comparison on this basis actually understates the relative increase for the finished product. Since the cost of leather on the average con-

[1] Thus, unit labor costs rose less than 3 percent from 1939 to 1941. See Productivity and Unit Labor Cost in Selected Manufacturing Industries, 1919–40, and 1941 supplement (U. S. Bureau of Labor Statistics, mimeographed report).

stitutes from about one-half to two-thirds of the total cost of producing shoes,[2] it is apparent that margins between material costs and prices received by shoe manufacturers widened.[3]

In addition, there were widespread changes in the quality of many shoes, particularly in the case of women's and children's shoes sold in popular price lines. Leather soles were often replaced by composition; fabric uppers replaced leather, and cheaper leathers were substituted for more expensive materials.

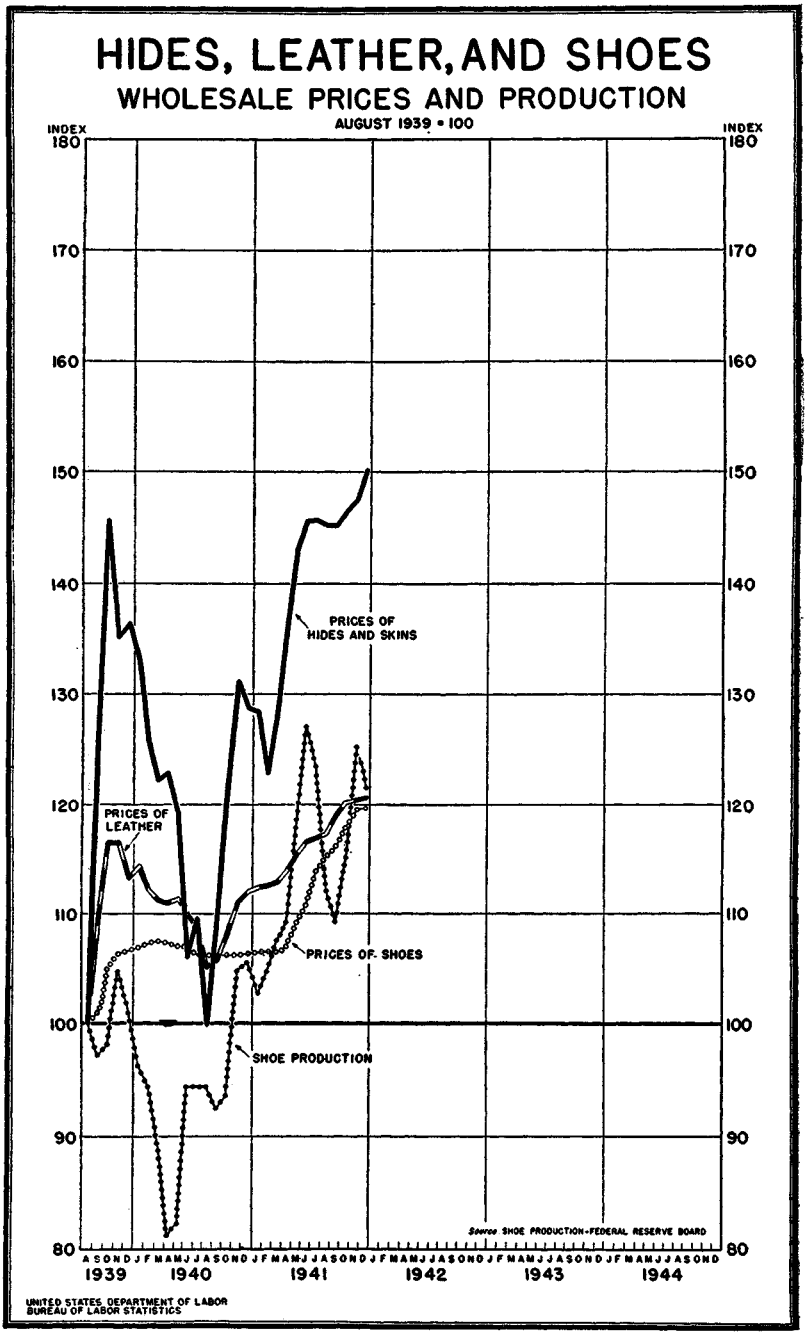
Prices of hides and leather products participated vigorously in the sharp rise for all commodities, largely speculative, which immediately followed the outbreak of war in Europe in August 1939. By the end of 1939 the average advance amounted to 12 percent. In this over-all increase, however, shoe prices shared only moderately, advancing 7 percent. The average increase for leather amounted to 13 percent and for hides and skins, 36 percent. Price movements for hides and skins paralleled closely those for leather during 1940, when quotations for both groups declined more or less steadily to reach their "trough" in August. This low point corresponded roughly with that for most other commodities and also with a sharp increase in hide and skin imports from South America. Beginning in September of 1940 prices of both hides and leather advanced steadily, the pace accelerating through early 1941 and continuing at a somewhat slower rate through the rest of the year. (See table 13.)

In general, price movements for shoes lagged behind those for the raw and semifinished materials. The advance in shoe quotations continued through early 1940, then eased later in the year. Through early 1941, shoe prices were nearly stable but increased sharply later. Prices of other leather products—of considerably less importance than shoes—behaved in a somewhat similar way. One important exception, however, was leather suitcases, prices of which rose very sharply in late 1941 to reach a level (by December) 47 percent above that prevailing in August 1939. In the case of luggage, however, leather constitutes only about 20 percent of the total cost of raw materials used; the other 80 percent includes linings (cotton fabrics, silk, rayon, etc.), metal hardware (locks, buckles, hinges, corners), fittings (hangers, compartments, etc.), and zippers and other closures. For many of these materials, cost increases were greater than those for leather.

The increase in prices for hides and skins and their products from August 1939 to December 1941 was considerably less than in the corresponding period of World War I. By the end of 1916, a period comparable to the end of 1941 in the present conflict, prices of leather had increased more than 100 percent, hides and skins about 90 percent, and shoes more than 40 percent. The sharp increase in prices of these products, and particularly of leather, which began in mid-1916, accompanied a general price rise for all raw materials and manufactures, and was essentially speculative, although affected somewhat by the beginning of heavy Allied purchases. The average advance for all hides and skins and their products in World War I, up to late 1916, amounted to about 60 percent, appreciably more than

[2] Census of Manufactures, 1940 (U. S. Bureau of the Census); American Shoemaking, April 23, 1941, p. 11; and Shoe and Leather Reporter, April 26, 1941, p. 9.

[3] The increase in unit labor costs in the boot and shoe industry was small compared with price advances, and amounted to 4½ percent between 1939 and 1941. (Productivity and Unit Labor Cost in Selected Manufacturing Industries, 1919–40, and 1941 supplement. U. S. Bureau of Labor Statistics, mimeographed.)



the increase during the same period in the general level of prices, as measured by the Bureau of Labor Statistics comprehensive wholesale price index.

TABLE 13.—*HIDES AND LEATHER PRODUCTS: Wholesale-Price and Production Indexes, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939=100) of—				
	Wholesale prices			Shoe production [1]—	
	Hides and skins	Leather	Shoes	With seasonal adjustment	Without seasonal adjustment
1939					
August	100.0	100.0	100.0	100.0	100.0
September	126.2	109.5	101.0	97.2	95.9
October	145.6	116.4	104.9	98.1	88.4
November	135.1	116.4	106.3	104.7	80.2
December	136.3	113.3	106.6	100.9	75.2
1940					
January	132.9	114.3	106.9	96.3	81.8
February	125.6	112.1	107.3	94.4	90.1
March	122.1	111.3	107.5	88.8	87.6
April	122.8	111.0	107.3	81.3	75.2
May	119.4	111.4	107.0	82.2	71.1
June	106.1	110.0	107.0	94.4	73.6
July	109.6	108.8	106.2	94.4	81.0
August	99.9	105.1	106.2	94.4	94.2
September	108.8	105.8	106.2	92.5	91.7
October	121.5	108.2	106.2	93.5	84.3
November	131.1	111.0	106.2	104.7	79.3
December	128.6	112.0	106.3	105.6	78.5
1941					
January	128.4	112.4	106.5	102.8	87.6
February	122.8	112.5	106.5	104.7	100.0
March	128.4	112.9	106.5	107.5	105.8
April	135.6	113.8	106.9	109.3	101.7
May	142.9	115.4	109.2	117.8	102.5
June	145.6	116.5	110.8	127.1	98.3
July	145.7	116.8	113.8	123.4	105.8
August	145.3	117.3	115.2	112.1	111.6
September	145.2	119.0	116.1	109.3	108.3
October	146.5	120.1	117.9	115.0	103.3
November	147.7	120.4	119.5	125.2	95.0
December	150.1	120.6	119.7	121.5	90.1

[1] Based on indexes published by Federal Reserve Board.

Hides and Skins [4]

Prices of hides and skins rose sharply immediately following the outbreak of war in Europe, weakened subsequently until August 1940 and then rose rapidly again. Speculation entered as an important factor in these price movements early in the Defense Period; later, however, growing consumer purchasing power in addition to Army and Lend-Lease demand for shoes gave a firmer base to the advance. In June 1941, Office of Price Administration ceiling prices were imposed on the major types of cattle hides and certain skins, and 2 months later were in part revised upward. Net price increases from August 1939 to December 1941 ranged from 27 percent for packers' heavy Texas steers to 115 percent for packers' sheepskins.

[4] The distinction between the terms hide and skin is merely one of weight. Hide generally refers to cattle hides, and skin to the lighter weight kipskins (16 to 25 pounds), calfskins (10 to 15 pounds), goatskins, etc.

Ordinarily the demand for hides rests primarily upon consumer buying power as reflected in increased purchases of shoes. Similarly, a rise in consumer income results in greater purchases of meats, and thus, usually in an increase in animal slaughtering, the factor immediately controlling hide and skin supplies.[5]

During the Defense Period, the prices of hides and skins were influenced materially by a number of additional factors. The most important of these relating to demand—aside from the increase in civilian purchases of shoes and other leather products as buying power advanced—was the placement of large orders for shoes by the United States Government for its armed forces. Large-scale purchases of hides by the Russian Government also contributed to demand. In regard to supply, the most important development, aside from the increase in animal slaughtering, was the rise in imports of hides from South America during 1941. Before the war, imports supplied about 10 percent of domestic consumption; during the year 1941 this proportion had grown to about 50 percent.

Prices of domestic cattle hides are subject to marked seasonal influences, reaching peak levels during the late summer and early fall and dropping to a low point in February.[6] The seasonal price behavior of imported hides, coming principally from the River Plate district of Argentina and Brazil, is approximately the reverse of that for the domestic product, and tends to level out the course of prices somewhat. In the case of calf, goat, and sheep skins, seasonal price movements are relatively small and not so clearly defined.

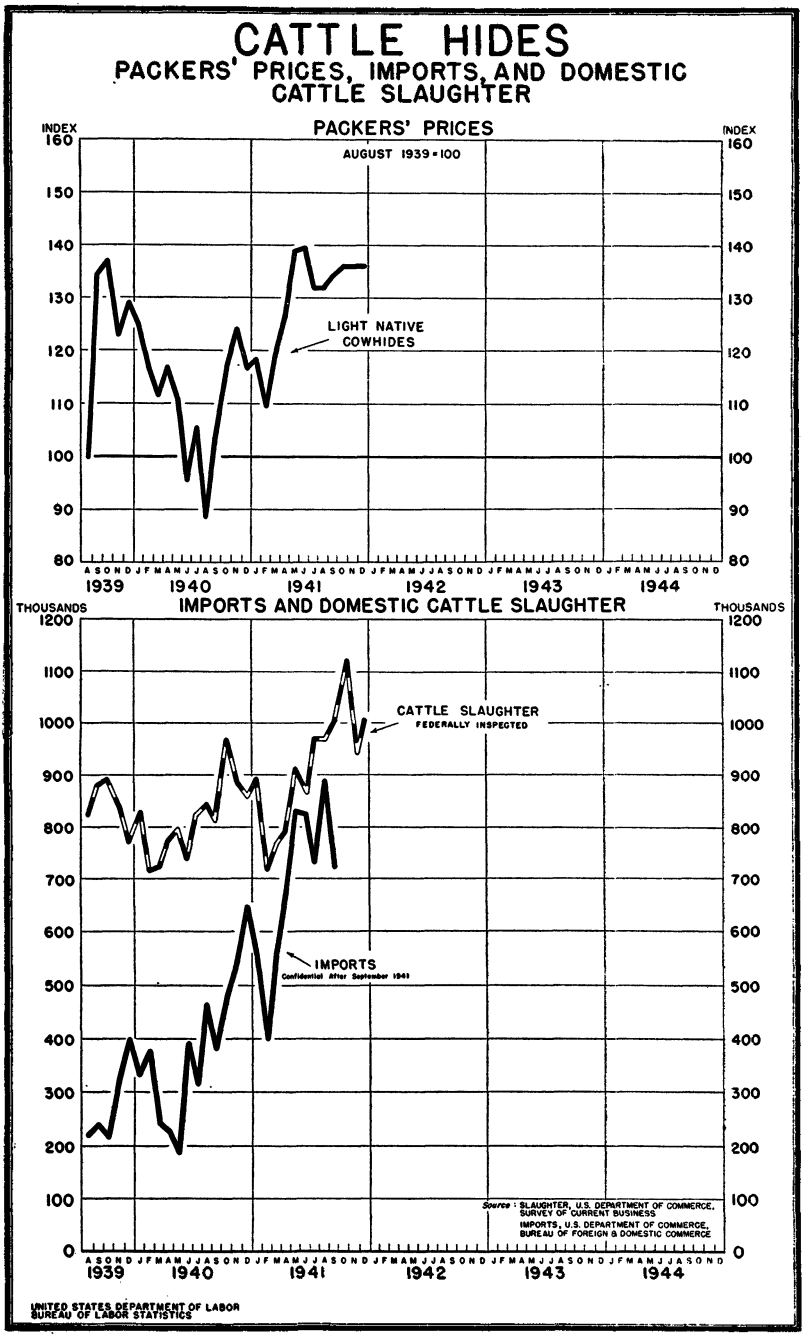
THE 1939 ADVANCE

Following the outbreak of the war in 1939 and through almost all of 1940 the price of cattle hides fluctuated more widely than usual for the season; sometimes these movements were contraseasonal. Although the price of light native cow hides usually rises very slightly between August and September, it jumped 34 percent (from 11.4 to 15.3 cents per pound) between these months in 1939, just after the outbreak of the war. Heavy native steers rose from 11.6 to 14.6 cents, and heavy Texas steers from 11.4 to 14.4 cents. (See table 15.) After a decline in November, the price of light native cows once more turned up, contraseasonally, reaching a level 30 percent above the pre-war figure. Calfskins and goatskins followed the same general trend, rising from 16 to 24 cents and from 41.4 to 56.6 cents, respectively, between August and October, declining in November, and—in the case of calfskins—rising again slightly in December. Sheepskins rose 78 percent—from 8.45 cents per pelt in August to $1.50 in November—and declined for several months thereafter.

This general increase in hide and skin prices was due largely to speculative buying in the futures market in anticipation of heavy Government orders. It was also supported by an increased rate in the actual consumption of leather, as indicated by the decrease in

[5] Most leather is manufactured from hides and skins of animals killed for meat; conversely, hides and skins taken from meat animals are, with very few exceptions, made into leather, regardless of the need for leather. Thus, hides, skins, and leather are essentially byproducts of the meat-packing industry.

[6] Paradoxically, the peak month of the seasonal price movement, September, is also one of the peak months of production, the slaughter of cattle and sheep reaching the highest levels in September and October, while the low point usually falls in February. That prices tend to increase rather than decline as more hides enter the market is because of the fact that the hides taken off during July, August, and September are of a superior quality, chiefly because of their shorter hair and comparative freedom from grubs.



leather stocks (all kinds, in process and finished) from 8,876,000 equivalent hides at the end of August to 8,666,000 at the end of October.

PRICE RECESSION—JANUARY–AUGUST 1940

During the first 8 months of 1940 prices of hides and skins weakened appreciably from their high speculative levels, following the general market trend, and did not strengthen again until the defense program was well under way later in the year. In the first 4 months of the year, the price of light native cows did not depart widely from the normal seasonal pattern, a decline in the first 2 months being partially offset by a seasonal advance between March and April. But, late in April, a decline set in which carried the price steadily downward during the next 2 months. This drop, which was sharply contraseasonal, was accelerated by unusual weather conditions; a severe and prolonged winter had depressed the usual market for spring shoes. The total production of boots and shoes fell from 31 million pairs in April 1940 to 29 million in May and to 28 million in June, as compared to 33 million, 33 million, and 32 million for the corresponding months of 1939. In addition to its effect on market conditions, the prolonged winter adversely affected the quality of hides; for example, the hair on the hides was unusually heavy, thus reducing their value.

Hide prices rose in accordance with the normal seasonal trend between June and July, the movement gaining strength from requests during June for bids on Army shoes and from an expression of Government interest in gloves, jerkins, and other leather products.[7] This was followed, however, by another contraseasonal decline in the next month, which was related both to the unusual spring weather and to the chaotic state of foreign markets. Thus, by August the price of light native cows had fallen to 10.1 cents per pound, a level nearly 11 percent below the August 1939 figure. The price of heavy native steers had fallen to 10.2 cents and of heavy Texas steers to 9.2 cents.

During this same period, January through August 1940, prices of calf, goat, and sheep skins also followed a general downward trend. The decline for calfskins was punctuated by slight upward movements in March, May, and July, but continued to a low of 15.3 cents in August 1940, 31 percent below the high of 22.3 cents in January. Goatskins, which are almost entirely imported, principally from Brazil, moved continuously downward until September 1940 when the price was 37.3 cents, 34 percent below the peak which had been reached in October 1939 and a few cents below the August 1939 level. The price for sheepskins dropped to $1.26 in June, rose to $1.34 in July, then dropped again to $1.33 in August, about 11 percent below its high of $1.50.

RESUMPTION OF THE ADVANCE, FALL OF 1940

August 1940 marked the end of the broad downward movement; the price of hides and calfskins rose sharply in the next 3 months, and goatskins and sheepskins increased in October, November, and December. These increases were in some cases contraseasonal and resulted in large part from the depletion of finished leather stocks, which in July and August had reached the lowest figure in 20 years,

[7] Journal of Commerce, June 19, 1940.

owing to "greater activity in the leather trade." [8] In addition, the movement in prices was strengthened by large Russian purchases of leather and by the prospect of heavy orders to be placed by the United States Government.

In December the prices of hides turned down in accordance with the normal seasonal trend. This downward movement was accentuated by the resistance against buying on the part of tanners. The Shoe and Leather Reporter, December 28, 1940 states:

> They [tanners] find it difficult * * * to get any very attractive prices from the Army shoe orders and shoe manufacturers have already priced their spring shoes without asking any advance, consequently it is going to be difficult for tanners to get much of an advance in leather, so [they] hesitate to pay any advances whatever for hides.

The position of the tanners was strengthened by the substantial increase in hide imports, a large part of which had formerly gone to European markets (closed as a result of the war).[9] The total of United States imports rose from 397 thousand pieces in December 1939 to 645 thousand in December 1940. (See table 14.) As a result, the price of light native cowhides declined from a level in November 24.5 percent above the pre-war figure to only 10 percent above in February 1941. Heavy native and Texas steers followed the same trend, while smaller declines occurred for calf, sheep, and goat skins.

THE 1941 PRICE RISE

However, prices of all hides and skins began to rise again late in February. This upward movement—far greater than the usual seasonal advance for hides and for most skins at that time of the year—was stimulated by the passage of the Lend-Lease Act on March 11, 1941, leading to expectations that large quantities of hides, leather, and perhaps shoes, would be sent to Britain. In an attempt to arrest the advance, Price Commissioner Henderson on March 16, 1941, issued a statement to the effect that price increases after the middle of February appeared "to be speculative and not warranted by actual supply conditions":

> These figures [statistics on increased visible supplies of cattle hides and imports] do not indicate any present danger of a shortage of hides.
>
> The net additional demand for leather due to Army shoe orders is only a small percentage of total leather consumption and cannot cause any difficulty in supplying normal leather requirements.[10]

Despite this statement, the price continued steadily upward. Fears that sporadic shortages of shipping space for imports might become permanent combined with rising consumer demand to strengthen the market. Thus, on April 17, 1941, the New York Times reported:

> With shoe production running higher, spring take-offs improving quality of domestic hides and Argentine markets virtually closed temporarily to American buyers because of lack of ship space, domestic spot hide trading has improved sharply this week.

PRICE CEILINGS

The Government again expressed its opposition to the price advances on May 9, when J. P. Davis of the Office of Production Management

[8] Hide and Leather and Shoes, October 12, 1940, p. 11.
[9] Journal of Commerce, July 17, 1940, and December 19, 1940.
[10] New York Times, March 17, 1941.

informed tanners, that, if necessary, the Federal Price Administrator could peg the prices of hides.[11] Two and a half weeks later the Government took two separate actions. The Purchasing Division of the Office of Production Management on May 27 announced that all bids on shoes for the Army and the Civilian Conservation Corps had been rejected, chiefly because the bids were considerably higher than those submitted on a large order placed in March. At the same time, the Office of Price Administration and Civilian Supply announced that it would shortly issue a maximum price schedule for cattle hides, kipskins, and calfskins. Imposition of a ceiling was explained by the agency on the grounds that recent price increases had been purely speculative and were causing an unnecessary rise in the cost of leather and thus of shoes. The ceiling went into effect on June 16, 1941, with the top price for cattle hides set at 15 cents per pound (compared with a price of 16½ to 17 cents for light native cowhides in the first 2 weeks of June 1941 and of 11.4 cents in August 1939), f. o. b. Chicago, freight equalized. No provisions were made for grade or seasonal differentials.[12] Ceilings were established for calfskins in the same market at 20½ to 27 cents per pound, depending on size; for calfskins in the New York market, at $1.30 to $4.60 a hide, depending on weight; and for kipskins, at 20 cents per pound. Ceilings applied to the futures as well as the spot market.

As a consequence of the ceiling order, some of the large meat packers began tanning hides and skins taken off in their own plants and selling leather instead of raw hides.[13] But, more important, mixed grades of hides and of skins were sold in combination lots at the top price.[14] While not prohibited by the order, the latter practice increased tanners' costs substantially, since combination lots sold at ceiling prices often included low grades which could not be used by purchasers.

Within less than a month the Price Administrator was compelled to yield to this pressure by permitting payment of higher than ceiling prices in certain cases (e. g., where leather tanners required premium grades), although permission was to be granted only upon specific application to the Office of Price Administration and Civilian Supply. At the same time Mr. Henderson warned against ignoring grade and quality differentials, which ordinarily prevailed, and declared that "the trade itself bears the primary responsibility for maintaining the established practices of selecting and grading, * * * OPACS expects it to meet that responsibility." [15]

In mid-August of 1941, the OPACS announced that it was studying goatskin prices and would put them under ceiling if any unwarranted advances occurred. This was apparently taken as a warning by the trade, and goatskin prices were lowered from 61.6 to 58.3 cents in August and September. The warning issued previously with regard to observing differentials in hide and calfskin trading was not heeded, however, and by September, 10 of the 12 grades of packers' hides were selling at the ceiling price. Therefore, on September 13 an amendment was put into effect raising the ceiling price to 15½ cents for packers' No. 1 native steers and cows, and scaling prices of the

[11] New York Herald-Tribune, May 10, 1941.
[12] In announcing the maximum price schedule, the Office of Price Administration stated: "* * * the development of differentials and seasonal adjustments" will be left "to the normal operation of the market below this ceiling price." (OPA Release No. PM 561, June 14, 1941.)
[13] Wall Street Journal, June 17, 1941, p. 1.
[14] U. S. Department of Commerce, Industrial Reference Service, No. 25, August 1941, p. 4.
[15] Journal of Commerce, July 10, 1941.

poorer grades downward to 10 cents per pound for No. 2 branded bulls. Calf- and kip-skin maxima were not changed, but new classifications were added. The trade practice of tare allowance was recognized and a clause was added prohibiting evasive practices, such as upgrading.

The ceiling order, however, did not cover the prices of imported hides, which were becoming an increasingly important element in United States supplies. Imports rose materially in the latter part of 1941, totaling 8,733,000 hides for the year as compared to 4,584,000 in 1940. In December the number of pieces imported exceeded the number of cattle slaughtered (Federally inspected) in this country.

Prices of this important element of supply had been sent upward largely as a result of competitive bidding between the United States, England, Russia, and Japan. By December the finest South American hides—Frigorificos—were selling in the New York market at 18 cents a pound, 2½ cents a pound higher than the price of domestic native steer hides, the usual premium being 1¼ cents.[16]

TABLE 14.—*CATTLE HIDES: Imports and Domestic Cattle Slaughter, August 1939–December 1941*

[Source: U. S. Department of Commerce—Bureau of Foreign and Domestic Commerce, and Survey of Current Business]

Date	Imports (thousands of pieces)	Cattle slaughter, Federally inspected (thousands of animals)	Date	Imports (thousands of pieces)	Cattle slaughter, Federally inspected (thousands of animals)
1939			*1940*—Con.		
August	219	823	November	542	848
September	238	880	December	645	858
October	214	893			
November	317	837	*1941*		
December	397	773	January	559	891
			February	400	717
1940			March	560	766
January	333	827	April	665	792
February	375	715	May	828	908
March	242	721	June	823	867
April	226	774	July	731	968
May	188	796	August	888	968
June	391	738	September	721	1,004
July	314	822	October	839	1,119
August	463	842	November	607	941
September	383	812	December	1,112	1,004
October	482	968			

The "upward pull" on domestic prices exerted by these relatively high import prices, and the uncertainties concerning shipping space, in addition to the very existence of the price ceiling—which like all ceilings tended, under conditions of strong demand, to become a "floor"—were the principal factors causing domestic prices to remain stable during the last 3 months of 1941, instead of declining in accordance with the normal seasonal trend. The prices of goatskins, which were still uncontrolled, rose again in October and November to 62.8 cents per pound, 52 percent above August 1939. Sheepskins, which were also uncontrolled at that time, had been rising from June and reached $1.82 cents per pelt in November, a level 115 percent above that of August 1939.[17]

[16] Journal of Commerce, December 22, 1941.

[17] On December 12, 1941, the OPM took control of the entire shearling (sheepskin) supply to assure the air forces of suits, jackets, and coats.

TABLE 15.—*HIDES AND SKINS: Packers' Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Hides: Packers' prices per pound (Chicago) of—					Skins: Packers' prices	
	Packers' light native cows		Packers' heavy steer		Packers' calf [1]	Brazil goat [2] (per pound, New York)	Packers' sheep [3] (per pelt, Chicago)
	Index (August 1939 =100)	Price	Native	Texas			
1939		*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	
August	100.0	11.4	11.6	11.4	16.0	41.4	$0.85
September	134.4	15.3	14.6	14.4	21.1	47.0	1.06
October	137.1	15.6	16.5	15.9	24.0	56.6	1.48
November	123.4	14.0	14.6	14.1	21.4	55.3	1.50
December	129.5	14.7	14.4	14.4	22.2	55.1	1.48
1940							
January	125.1	14.2	14.0	14.0	22.3	54.9	1.38
February	117.3	13.3	12.9	12.9	21.4	53.9	1.35
March	112.1	12.7	12.6	12.5	21.6	50.1	1.35
April	116.8	13.3	12.7	12.6	21.2	48.8	1.35
May	110.9	12.6	12.3	12.3	21.4	45.0	1.34
June	95.9	10.9	10.5	10.3	18.7	41.7	1.26
July	105.3	12.0	11.4	10.5	18.8	39.1	1.34
August	89.3	10.1	10.2	9.2	15.3	37.8	1.33
September	103.8	11.8	12.3	10.9	16.6	37.3	1.33
October	117.6	13.4	14.0	12.1	20.3	38.1	1.47
November	124.5	14.1	14.6	13.4	21.8	42.8	1.60
December	116.8	13.3	13.3	13.0	21.3	45.5	1.67
1941							
January	119.0	13.5	13.3	13.1	21.6	45.0	1.63
February	109.9	12.5	12.4	12.4	21.6	41.5	1.65
March	119.4	13.6	12.9	12.4	22.5	44.1	1.73
April	126.9	14.4	13.7	13.0	24.0	49.1	1.75
May	138.8	15.8	14.7	14.1	24.5	51.7	1.75
June	139.9	15.9	15.3	15.0	23.4	55.5	1.72
July	132.2	15.0	15.0	15.0	21.8	61.6	1.75
August	132.2	15.0	15.0	15.0	21.8	60.6	1.75
September	134.9	15.3	15.3	14.8	21.8	58.3	1.78
October	136.6	15.5	15.5	14.5	21.8	60.9	1.80
November	136.6	15.5	15.5	14.5	21.8	62.8	1.82
December	136.6	15.5	15.5	14.5	21.8	68.3	1.83

[1] Northern native, (15–25 lbs.) green salted.
[2] Cereas, dry salted. Price paid by tanner to broker or importer.
[3] Shearlings, No. 1.

Leather

Prices of leather are affected by the same primary factors which influence prices of hides and skins; between one-half and two-thirds of a tanner's total expenses are represented by costs of the principal raw material. However, price changes for leather are considerably narrower than those for hides and skins. Between August 1939 and December 1941, prices for leather as a group rose 21 percent. During the same period, the average price of all hides and skins (included in the Bureau of Labor Statistics wholesale-price index) rose somewhat more than 50 percent. Aside from the fact that the other costs of producing leather, such as labor, are relatively stable, there are two factors outside the industry which tend to limit somewhat the amplitude of price movements for this commodity: (1) competition from substitute materials, and (2) the relative inflexibility of shoe prices.

In the fall of 1939, the speculative advance which occurred in the prices of hides and skins and many other commodities also affected the various types of leather. Between August and October the price of chrome calf rose 19 percent, from 37.4 to 44.6 cents per square foot (see table 16); the price of side upper leather rose 29 percent, oak-

tanned sole bends and backs 28 percent and 23 percent, respectively. The price of glazed kid leather from Brazil goatskins rose 11 percent.

In November and December prices of leather, except for glazed kid, began to decline, but in January there was a slight upturn, apparently prompted by a report that the French were seeking to place orders for several million feet of upper leather and for one thousand tons of sole. The size of this prospective order, however, appears to have been exaggerated,[18] and prices resumed their downward trend in February. With tanning activity and shoe production well below expectations, this decline continued for most types of leather until the autumn of 1940. By August and September 1940 prices of sole leather were slightly below, and side leather only slightly above, levels prevailing before the war in August 1939. However, glazed kid and calf leather were affected only moderately by this general weakness: the former because of its almost exclusive use in women's shoes, prices of which are considerably steadier than those of other types of footwear; the latter because of the firmness of calfskin prices, which in turn resulted from difficulties in importing enough skins to supplement the inadequate domestic supply.

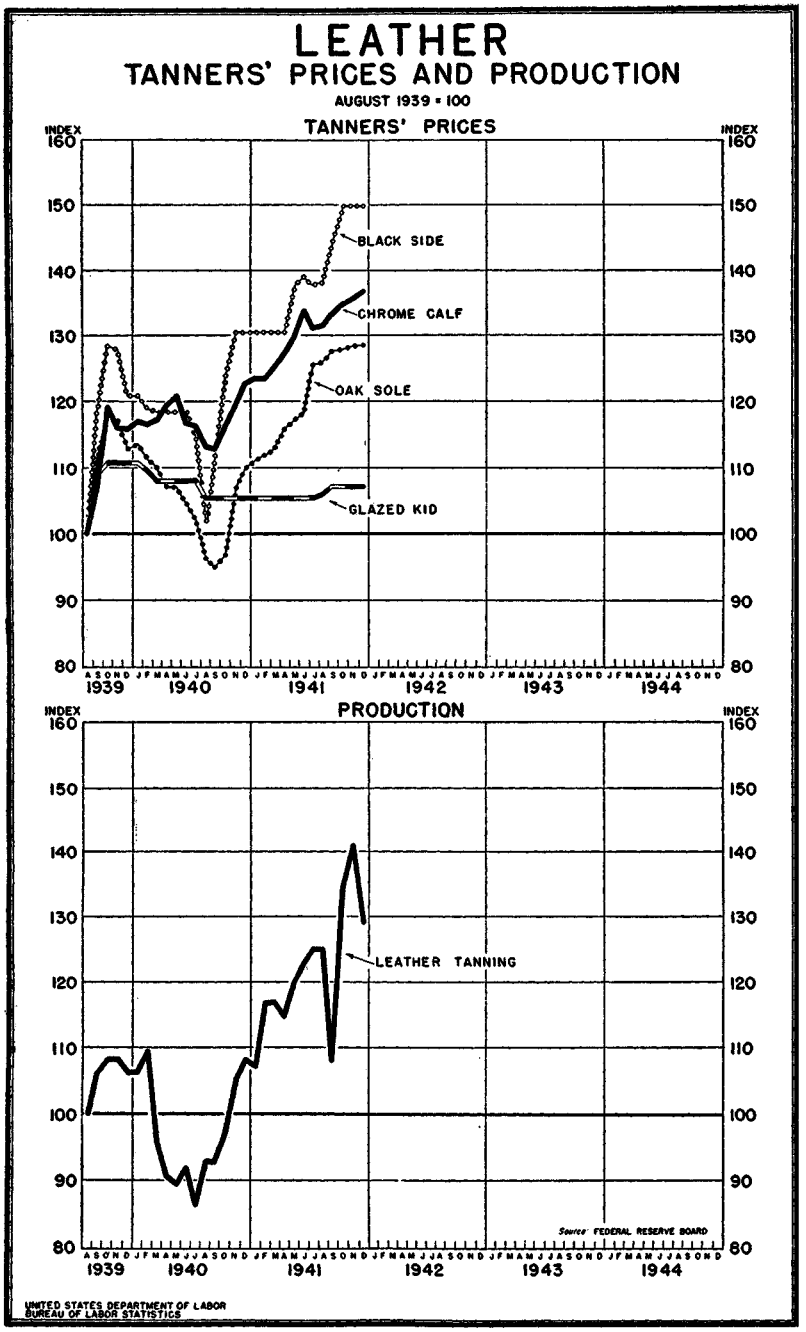
Early in the fall of 1940, as expanding defense activities resulted in increased consumer purchasing power, a general feeling of optimism began to spread among leather manufacturers. Leather production and sales were accelerated, and the prices of leathers followed hides and skins in their sharp upward movements. The price of glazed kid was an exception, remaining at 59 cents per square foot from August 1940 through July 1941.

The minor declines in hide and skin prices between November 1940 and February 1942—accentuated by a price war between tanners and packers [19]—were not reflected by declines in the various leather prices, which either remained the same or continued gradually upward. In November 1940 the prices of calf leather were withdrawn temporarily as a conservation measure to prevent depletion of United States stocks by export purchases, inasmuch as the British Government had been buying heavily.[20] Most domestic shoe manufacturers had placed orders to cover their needs before this step was taken. In December tanners began to experience difficulty in getting imported tanning materials; the cod oil supply was decreasing, and prices of hard grease and curriers' wax were rising.[21]

In February 1941, both calf and kip leathers were placed under export control and by Executive order the export licensing system was extended to sole and belting leather. Although the latter order was principally intended to conserve sole leather, sole and belting leather are for a number of purposes interchangeable.[22]

During the spring and early summer of 1941, hide prices moved upward sharply and leather prices also continued rising. Aware that the OPACS was closely observing developments, however, the tanners attempted to prevent a run-away market by limiting sales and accepting delivery dates no further ahead than 60 days.[23]

[18] New York Times, June 14, 1940.
[19] See p. 66.
[20] New York Times, November 15, 1940.
[21] Hide and Leather and Shoes, December 14, 1940.
[22] Shoe and Leather Reporter, March 1, 1941.
[23] Journal of Commerce, April 12, 1941, and New York Times, April 17, 1941.



At the 1941 spring meeting of the Tanners' Council of America, an industry representative declared that "tanners do not want high prices, since they are fully aware that higher prices encourage substitution and that every cycle of mounting prices has eventually brought disastrous results." Another spokesman asserted that the peculiarities of Army specifications for shoes had actually resulted in increasing the supply of leather available for commercial use, and explained:

> The sharp increase in Army needs resulted in a demand upon tanners for larger quantities of upper chrome retan. Only a proportion of the hides purchased will make this leather, and there are important problems in grading and selection which complicate the price and cost equation. Producers of retan must dispose of those hides which will not meet Army specifications and prices received for such leather will affect the price of the Army leather.
>
> In the case of commercial nine-iron and up-sole leather used for Army soles, only 15 percent or less of the hide can meet the applicable sole leather specifications, and here, too, prices the tanner obtains for soles depend upon what the other parts of the hide will bring.[24]

J. P. Davis of the OPM, present at the same meeting, assured tanners that "the Government expects the industry to make a fair and reasonable profit and it will not attempt to force continued sales at previous low levels." [25]

Imposition of the ceiling on hides and skins in June 1941 resulted only in a brief pause in the advance of leather prices. The price of scoured backs dropped 0.5 cent in June but rose in July from 37.0 to 41.5 cents and remained at that level during the rest of the Defense Period (see table 16). The price of chrome calf decreased from 50 to 49 cents in July, but rose thereafter to 50.8 cents in November and 51.2 cents in December. Side leather dropped a fraction of a cent in July, then advanced between August and October to 31 cents. Oak bends advanced continuously from March through September 1941, from 37 to 44 cents per pound. The only increase in glazed kid prices in 1941 occurred in August and September and amounted to 1 cent.

Prices of some leathers—side, sole, and calf—continued rising even after the September revision of the hide and skin ceiling had successfully stabilized raw material prices. These increases were due partly to the sharp advance in prices of imported skins and Frigorifico hides. Fine South American hides commanded a premium of 2½ cents [26] over comparable domestic hide quotations, compared with the usual differential of between 1¼ and 1½ cents.[27]

Accordingly, Price Administrator Henderson warned tanners that if maximum prices were established for leather, they would be based on ceiling prices of domestic hides and skins and not upon prices prevailing for imports. He declared:

> If tanners are willing to buy foreign hides at higher prices than those at which domestic hides are selling under the ceiling, leather prices must be too high. I still hope that OPA action on the prices of leather and leather products will not be necessary. However, it is quite clear that increased raw material costs arising from the use of foreign hides purchased at substantial premiums over domestic hide prices will generate pressure for advances in prices of leather and leather products. Further advances in the prices paid for imported hides is almost certain to result in action on leather prices by this office.

[24] New York Times, May 9, 1941.
[25] New York Herald Tribune, May 10, 1941.
[26] See p. 68.
[27] Hide and Leather and Shoes Encyclopedia (Hide and Leather Publishing Co.), 1941, p. 135.

TABLE 16.—*LEATHER: Tanners' Prices, by Kinds of Leather, and Production Indexes, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Tanners' prices of—					Leather tanning index [6] (August 1939=100)
	Chrome calf [1] (per sq. ft., tannery)	Glazed kid [2] (per sq. ft., Boston)	Black side [3] (per sq. ft., Boston)	Oak sole (per pound, Boston)		
				Bends [4]	Scoured backs [5]	
1939	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	
August	37.4	56.0	20.7	32.8	30.5	100.0
September	40.2	61.0	24.5	38.4	34.8	106.2
October	44.6	62.0	26.6	42.0	37.4	108.3
November	43.5	62.0	26.5	41.8	36.8	108.3
December	43.4	62.0	25.0	39.0	35.5	106.2
1940						
January	43.8	62.0	25.0	41.0	35.8	106.2
February	43.6	61.3	24.6	40.0	34.8	109.4
March	43.9	60.5	24.5	39.0	34.5	95.8
April	44.7	60.5	24.5	39.0	34.5	90.6
May	45.1	60.5	24.5	38.5	34.4	89.6
June	43.6	60.5	24.5	37.0	34.0	91.7
July	43.5	60.6	23.7	35.7	32.5	86.5
August	42.3	59.0	21.1	32.9	30.5	92.7
September	42.1	59.0	23.0	31.5	30.0	92.7
October	43.4	59.0	25.6	33.6	31.2	96.9
November	44.7	59.0	27.0	36.0	34.3	105.2
December	45.9	59.0	27.0	37.0	34.5	108.3
1941						
January	46.2	59.0	27.0	37.0	35.5	107.3
February	46.2	59.0	27.0	37.0	35.5	116.7
March	46.8	59.0	27.0	38.0	35.5	116.7
April	47.6	59.0	27.0	38.6	36.7	114.6
May	48.5	59.0	28.5	41.5	37.5	119.8
June	50.0	59.0	28.8	42.0	37.0	122.9
July	49.0	59.0	28.5	43.0	41.5	125.0
August	49.0	59.3	28.6	43.1	41.5	125.0
September	49.8	60.0	29.8	44.0	41.5	108.1
October	50.5	60.0	31.0	44.0	41.5	134.4
November	50.8	60.0	31.0	44.0	41.5	140.6
December	51.2	60.0	31.0	44.0	41.5	129.2

[1] Average of B and C grades.
[2] Top grade, from Brazilian skins.
[3] Chrome tanned, B grade.
[4] Tannery run, steers.
[5] Heavy, civilian trade.
[6] Based on indexes published by Federal Reserve Board.

The premium prices on the imported hides and skins continued to press against leather quotations, but it was not until 3 weeks after Pearl Harbor, on December 29, 1941, that a ceiling for leather was established.[28]

Shoes

Between August 1939 and December 1941 prices of shoes rose nearly 20 percent on the average, a substantial increase in view of the price stability ordinarily characteristic of these markets. The main reason for the relative inflexibility of shoe prices is the adherence to the practice of maintaining "price lines" by chain and other large volume retailers. These large retailers effectively dominate a considerable part of both the productive and distributive branches of the industry. Pressures making for higher prices, however, were so great during the

[28] On December 25 the leather ceiling was announced, and on December 29 it went into effect restoring prices to "the highest price contracted for or received by the seller * * * between November 6, 1941, and December 6, 1941, inclusive," and it further stipulated that prices could not be raised by shifting to the purchaser transportation or other charges which would not have been borne by him during that period.

Defense Period, that, both in the fall of 1939 and more particularly again in mid-1941, manufacturers raised prices by substantial amounts.

The sharp rise in hide and leather prices immediately following the outbreak of war in Europe was reflected promptly in price increases for shoes of many types. In men's work shoes, where adherence to "price lines" is less strict, the increase amounted to nearly 16 percent between August and November 1939. Increases during the same period were smaller for other types of footwear, amounting to 6½ percent for men's dress and street shoes, 4 percent for women's shoes, and 8 percent for children's. (See table 17.)

TABLE 17.—*SHOES: Manufacturers' Prices (by Kind of Shoes) and Production Indexes, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Price indexes (August 1939=100) of—				Production index [5] (August 1939=100)—	
	Men's shoes		Women's shoes [3]	Children's shoes [4]	With seasonal adjustment	Without seasonal adjustment
	Dress and street [1]	Work [2]				
1939						
August	100.0	100.0	100.0	100.0	100.0	100.0
September	100.9	104.8	100.1	103.2	97.2	95.9
October	103.2	114.8	104.1	107.0	98.1	88.4
November	106.4	115.7	104.2	108.3	104.7	80.2
December	106.5	114.6	104.3	108.7	100.9	75.2
1940						
January	106.5	112.7	104.6	108.7	96.3	81.8
February	106.5	110.5	105.0	108.7	94.4	90.1
March	106.5	109.8	105.0	108.7	88.8	87.6
April	106.5	109.8	105.0	108.7	81.3	75.2
May	106.5	109.8	105.0	108.7	82.2	71.1
June	106.5	109.8	104.5	105.1	94.4	73.6
July	106.5	109.8	104.5	101.9	94.4	81.0
August	106.5	109.8	104.5	101.9	94.4	94.2
September	106.5	109.8	104.5	101.9	92.5	91.7
October	106.5	109.8	104.5	101.9	93.5	84.3
November	106.5	110.9	104.5	101.9	104.7	79.3
December	106.7	111.3	104.5	102.7	105.6	78.5
1941						
January	107.0	111.3	104.5	103.2	102.8	87.6
February	107.0	111.3	104.5	103.2	104.7	100.0
March	107.0	111.8	104.5	103.2	107.5	105.8
April	108.2	113.9	104.5	104.5	109.3	101.7
May	112.4	118.6	105.1	106.6	117.8	102.5
June	114.5	125.2	106.5	109.9	127.1	98.3
July	116.8	128.0	108.7	113.3	123.4	105.8
August	117.4	131.6	109.9	114.7	112.1	111.6
September	118.0	134.9	110.7	116.2	109.3	108.3
October	120.3	137.9	112.1	119.4	115.0	103.3
November	121.4	139.9	114.7	123.9	125.2	95.0
December	121.6	141.8	114.7	126.1	121.5	90.1

[1] 9 series included.
[2] 2 series.
[3] 6 series.
[4] 4 series.
[5] Based on indexes published by Federal Reserve Board.

This initial spurt of activity in shoe markets was shortlived. Shoe production slumped through the first half of 1940, dropping in June to a level nearly 40 percent below that prevailing before the war. After a slight recovery in July and August the level of production continued down through November. Leather prices, as a group,

declined steadily through the first nine months of 1940. Shoe prices remained for the most part unchanged throughout the year with the main exception of children's shoes, which dropped by about 6 percent. The general inactivity in shoe markets was described in the July 31, 1940, issue of American Shoemaking, as follows:

> For weeks now, even for months, the expectation has been for larger volume. It can fairly be said that this has been the attitude since last September * * *. * * * Hand-to-mouth buying has * * * been the procedure in leather buying for months, and is attributed by most of the authorities consulted to one factor—uncertainty * * *.
>
> Early in the year it was overproduction of 1939 that supposedly delayed activity; then it was price, then it was "wait for the June shows;" and, of course, always, the war.

Some makers of higher grade shoes established new and lower price lines in order to boost sales volumes.[29]

In late 1940, leather prices strengthened considerably and the demand for shoes also began to increase. Although shoe prices remained for the most part unchanged, by March 1941 there were rumors of many impending increases. A statement [30] by Miss Harriet Elliott, consumers commissioner of the National Defense Advisory Commission, that such increases were not justified by market conditions evoked a reply from the trade that producing costs had risen considerably, both because of higher wage payments and higher raw material prices.

On March 27, 1941, a group of shoe manufacturers met with Miss Elliott and other Government representatives. At the meeting's conclusion it was announced that—

> 1. Shoe prices will advance only in proportion to increased costs. 2. Supplies of hides are sufficient for both military and civilian requirements. 3. Military demand, only a small percent of available productive capacity, will disturb consumer markets very little. 4. Recent advances in shoe prices have resulted largely from unwarranted apprehension over the supply situation.[31]

Beginning in April 1941 there were increases in prices of almost all shoes. As prices rose, Marshall Field, executive secretary of the New England Shoe and Leather Association of Boston, declared:

> The costs of manufacturing women's novelty shoes have advanced so materially as to require a fundamental shift in the long established fixed price brackets, or a marked lowering in quality standards * * *.
>
> When one realizes that upper leather and soles alone represent more than 50 percent of the factory value of women's shoes, there can be no question that either higher retail prices are necessary for fall or the quality of the shoes will have to be greatly cheapened—and this is virtually impossible now for the $2 shoes. Leather prices for the women's $4 retailers are up today as compared with a year ago 10 percent on colored calf, 11 percent on colored suede kid, 20 percent on gabardine, and 12 percent on leather soles.[32]

He added that costs of other materials and of labor, as well as overhead and taxes, had also risen and attributed the increase in labor costs to the "35-cent minimum wage and overtime payments due to the maximum workweek." [33]

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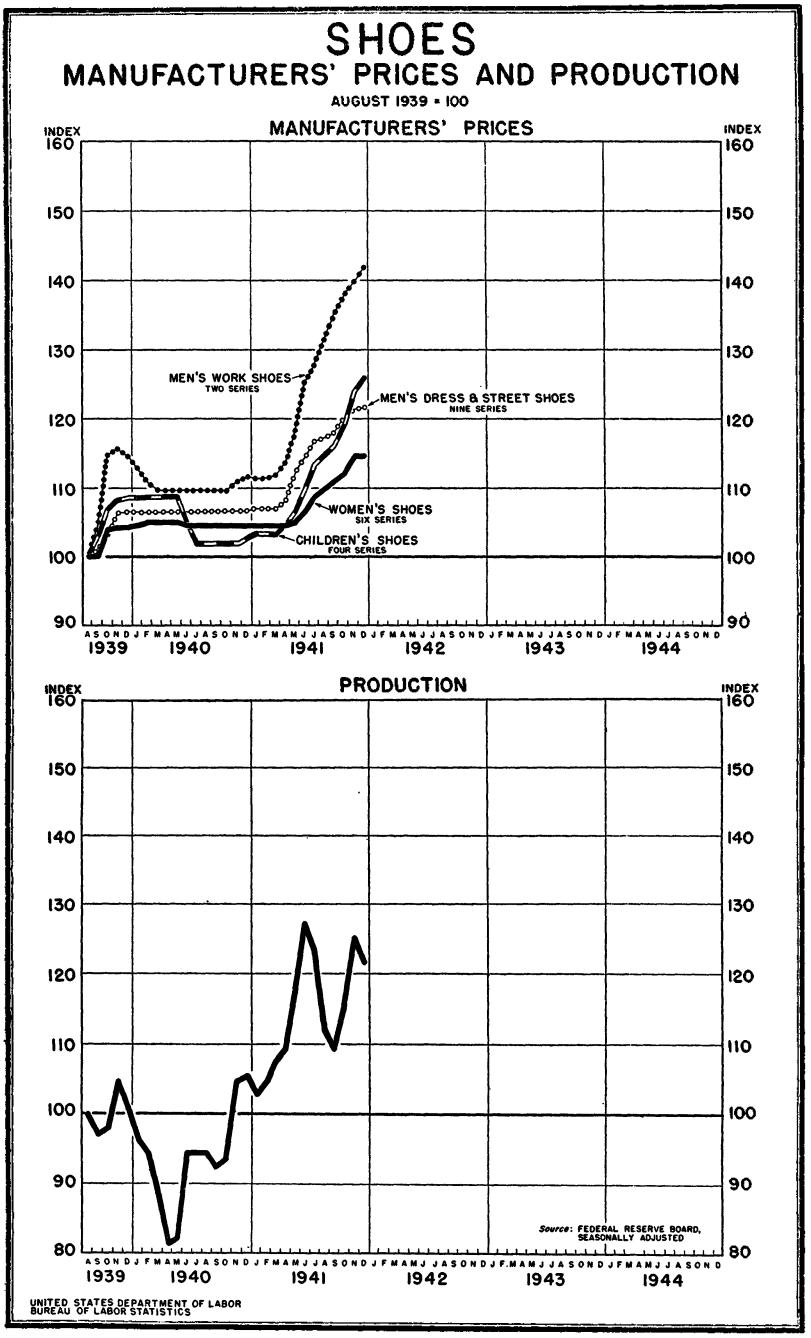
[29] American Shoemaking, October 9, 1940, p. 7.
[30] National Defense Advisory Commission. Release No. PM 133, March 6, 1941.
[31] Idem. Release No. PM 207, March 28, 1941.
[32] Shoe and Leather Reporter, April 26, 1941.
[33] Between August 1939 and December 1941, hourly earnings in the shoe industry as a whole increased 23 percent. Average unit labor costs in 1941 as compared with 1939 rose 4½ percent.



Through succeeding months the opposition of retailers to any change in their price lines gradually weakened, and the pace of the price advance increased, even in markets for women's shoes where the stabilizing influence of large retailers was most pronounced. Meanwhile the increase in consumer buying power enabled retailers to raise the level of their price lines without impeding the considerable rise which was taking place in sales volume. By December 1941, manufacturers' prices of men's work shoes were about 42 percent above their level of August 1939. Men's dress and street shoes had advanced 22 percent; women's shoes, 15 percent; and children's, 26 percent.

The particularly sharp rise for work shoes was attributable to the fact that the more desirable upper and sole leathers they required were in heavy demand for use in Army and other service shoes. In the case of women's and children's shoes, and even of some men's shoes, the price advance had been retarded somewhat by changes in construction which had reduced production costs and in some cases had reduced quality. Thus, composition soles had been substituted for leather soles in some children's shoes, and in women's shoes, fabrics such as gabardine came into greater use, with various changes made in style. In men's street shoes some producers substituted kip, elk, and side leather for calf uppers.

Chapter IV.—Textiles

Summary

The broad advance in prices of textile fibers and products during the Defense Period was attributable in large part to the military demands arising from defense preparations, together with a substantial rise in civilian purchases. Between August 1939 and December 1941, nearly all prices rose substantially, although the extent of these movements varied widely. The average advance for the entire group was 35 percent. Raw cotton increased nearly 90 percent; cotton yarns, 40 to 60 percent; and grey goods, 80 to 90 percent. Prices of raw wool and wool tops rose 55 to 70 percent. Raw silk was 17 percent higher, the rise being moderated by early Government control. The price of burlap (used primarily in bagging agricultural and other products) more than doubled. While prices of rayon yarn and fiber were characteristically stable, rayon grey goods were from 25 to 30 percent higher. These broad advances were reflected in apparel markets through changes in quality and, particularly in late 1941, in sharp price increases.

The first prices to move upward immediately after the outbreak of war in Europe were those for commodities obtained in whole or in part from abroad. Between August and November 1939, prices of burlap doubled; raw wool rose 50 percent; and silk, 29 percent. As the war progressed, all these products were affected by shipping difficulties. In the case of burlap, limited shipments combined with growing demand kept prices high and rising almost throughout the Defense Period, until a maximum-price schedule was issued by the Office of Price Administration and Civilian Supply in August 1941. The shortage of burlap became pronounced particularly in 1941 as the growing demand for commercial bagging material was supplemented by rising military requirements for sandbags and camouflage; meanwhile, the problem of supply was aggravated by the rise of prices in the Calcutta market to levels at times higher than the maxima allowed in New York.

The price of silk during the Defense Period was affected primarily by the course of developments in United States-Japanese political relations. With the outbreak of war, the price of silk rose sharply, declined in 1940, and advanced again early in 1941. The latter rise was cut short at its height by a series of Government orders in July and August when stocks of silk were frozen, trading in this commodity suspended, and maximum prices established by the Office of Price Administration and Civilian Supply. These measures were taken concurrently with the rupture of trade relations with Japan.

Wool prices were affected mainly by the supply situation, and, especially in the early months of the Defense Period, were strengthened by the loss of imports; in September 1939, the entire Australian clip was purchased by Great Britain for the duration. Later, shipments from South America and South Africa compensated for this loss, but in the fall of 1940, prices turned up again as the result of heavy Army orders and growing civilian demand. The rate of consumption of apparel wool in the United States in 1941 reached the highest level

ever recorded. Price increases for wool tops were even greater than for raw wool, because of the early development of a bottleneck in the wool-combing industry.

In contrast to imported fibers, prices of domestic textile products participated in no very sharp or sustained advance until 1941. This advance, when it finally occurred, was stimulated by rising consumer purchasing power and growing military demand, especially for goods of better quality. Between October 1940 and May 1941, prices of raw cotton rose 33 percent; cotton yarn, from 42 to 57 percent; and cotton grey goods, 47 percent. Maximum prices were established on combed yarn in May; later ceilings were also fixed for carded yarns and grey goods, and subsequently these ceilings were in all cases tied to prices of raw cotton.

Rayon yarn and fiber prices remained stable or rose only moderately during the Defense Period, in keeping with the general stability of prices in this industry. The shortage which developed in 1940 and 1941, however, was reflected in the more flexible prices of grey goods. Between September 1940 and August 1941, price increases ranged from 30 to 60 percent and when voluntary methods failed to halt the rise, ceilings on representative grey goods constructions were fixed by the Office of Price Administration in August at levels about 10 percent below those then prevailing.

In contrast to the broad movements in the fiber markets, the majority of apparel prices remained stable until the latter part of 1941. Only work clothing, competing with military demand for heavy cotton fabrics, reflected promptly the price changes in the primary markets. Durability is the prime requisite of work clothing; hence, substitution of cheap constructions in order to retard retail price advances was not as easy an alternative as in the case of style goods. Prices of overalls rose 13 percent between August 1939 and June 1941, while work shirts advanced 10 percent. For most other types of apparel during the period, established price lines were maintained unchanged, although the quality of many goods was altered considerably. For example, the advance in the price of wool led to the increased use of cotton and rayon blends with wool, while rapid advances in cotton goods prices resulted in substitutions of lower constructions. In addition, standards of workmanship were often lowered.

By July 1941, the accelerated price rise in the fiber markets and the rapidly increasing consumer demand began to be reflected in sharply higher retail prices for apparel. For example, retail prices of business shirts advanced less than 2 percent between August 1939 and June 1941. An increase of 11 percent was reported between June and December 1941. In the same manner, prices of women's percale dresses stood 34 percent higher in December 1941 than in June of that year. As a result of increased consumer demand and growing fears of anticipated shortages of consumer goods, retailers tended to build up their apparel inventories toward the latter part of 1941, and in October the value of stocks was estimated at about 30 percent higher than in the corresponding period of the previous year. This accumulation of stocks, of course, tended to increase pressure further upon prices at wholesale and in primary markets.

Cotton

Following a slight decline in September and October 1939, the price of raw cotton advanced until January 1940, fell between February and October to 2 percent above its pre-war level, and then began a steady and sharp rise which lasted until September 1941. In October and November 1941, prices again eased slightly, but the average price in the latter month remained 78 percent above its August 1939 level.

Between November 1939 and January 1940, cotton prices rose almost 15 percent, principally as a result of increased foreign and domestic demands. During this period exports, stimulated by Government subsidies and by heavy forward buying on the part of foreign nations, reached a total of 2,425,780 bales,[1] an advance of 113 percent over the same months a year before. In the United States, improved business conditions and efforts of consumers and manufacturers to build up stocks sent cotton-mill consumption in November 1939 up 14 percent above the pre-war level.

Nevertheless, the November 1939–January 1940 price advance did not reflect any shortage of supply. Although the 1939–40 crop was 12 percent below the previous 10-year average, the available supply exceeded by 300,000 bales that of the preceding crop-year because of a record carry-over of 13 million bales.[2] A large part of this carry-over was in the hands of the Government, which through its cotton loan program either owned or held in security against loans approximately 11 million bales.[3] However, between August 1, 1939, and January 31, 1940, the market price of cotton rose above the combined loan rate of 8.74 cents per pound and carrying charges, and as a result 800,000 bales of cotton were redeemed and added to market supplies.[4]

In February 1940 cotton prices began a decline—gradual until July, rapid thereafter—which carried them by October to a point 13 percent below the January level. Several factors contributed to this weakening of the cotton market: Severe curtailment of exports, a drop in the rate of cotton-mill operations, slackening of business activities, and the general decline in commodity markets early in 1940. Moreover, British rationing of cotton products and reduction of shipping space allotted to cotton cargoes in April, followed by the loss of markets in Nazi-dominated countries in the early summer reduced United States cotton exports by about 2 million bales annually. Thus, the January 1940 exports were 67 percent higher, while the July 1940 exports were 50 percent lower, as compared with the preceding 10-year average for the same months; and the exports for August, September, and October 1940 were between 77 and 85 percent lower.

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[1] Export figures from U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce. Raw cotton excluding linters.

[2] The cotton crop-year runs from August 1 of a given calendar year through July 31 of the following calendar year. Thus, the 1939–40 crop-year began on August 1, 1939, and ended July 31, 1940. Most cotton is picked and ginned from August through December, but its marketing continues through the following July. The total supply available during any crop-year is equivalent to the carry-over from previous crops available at the beginning (August 1) of that crop-year plus the amount of cotton grown during that same crop-year.

[3] The purpose of the loan program is to assure the orderly marketing of crops and especially to prevent undue price declines during the marketing season by enabling farmers to withhold supplies from the market. Thus, if the price is above the loan rate, farmers sell their cotton in the market; but if the price falls below the loan rate they pledge their cotton to the Government as security for loans, thereby reducing the amount of cotton flowing into commercial channels. The pledged cotton is gradually redeemed by farmers and sold in the market if the price rises to a level above the loan rate (plus carrying charges).

[4] This loan rate, and others referred to subsequently, apply to middling 15/16-inch spot cotton. Differentials are allowed for other types of cotton.

Domestic cotton consumption, after a steady decline from January to June 1940, began to advance, following the initiation of the defense program, and by October had risen above the December 1939 level. This recovery of cotton-mill activity, coupled with a new Government loan on the 1940 crop, compensated in part for the loss of foreign markets; and, after their customary seasonal decline from July to October, prices rose again as the new crop reached the market.

The 1940 loan, announced in August as 9.3 cents per pound, compared with 8.74 cents per pound on the 1939 crop, brought 1.2 million bales of the new crop under loan and tended to steady the market.[5] The 1940 crop of 12.6 million bales exceeded the 1939 crop by about 750,000 bales, but the 1940 carry-over was smaller by 2½ million bales than that of 1939. Furthermore, nearly 8.7 million bales of the 1940 carry-over were held by the Government, leaving only 1.8 million bales of "free" cotton.

Reduction in the free supply stimulated the 82-percent increase in cotton prices which began in October 1940 and continued through September 1941, when prices were 86 percent higher than in August 1939. This substantial advance resulted chiefly from wartime business expansion. While cotton exports between October 1940 and September 1941 were only 20 to 30 percent of the preceding 5-year averages for those months, domestic cotton consumption reached record levels owing to increased consumer purchasing power, forward buying by manufacturers and consumers, and large Government purchases for military purposes.[6] In November 1940, cotton consumption was 18 percent above the August 1939 level. By May 1941 it had risen to 46 percent above the pre-war figure, remaining close to this level during subsequent months.

In addition to this rise in consumption, a further increase in the loan rate stimulated cotton prices in 1941. Anticipation of such an increase was an important factor in the market for some time before its actual announcement, according to the Department of Agriculture, which reported in April 1941:

> The price rise which has been in progress since mid-October is attributed largely to speculation that the price will be supported at higher levels next season than this by higher Government loan rates on the 1941 crop and to greatly improved domestic demand.[7]

Enactment in mid-May of legislation providing a mandatory loan of 85 percent of the parity price on the 1941–42 crop was followed by a rapid advance in the price of cotton. Large purchases by speculators, cotton merchants, and other buyers, accelerating the price rise, widened the margin by which the price of cotton, between January and July 1941, exceeded the loan rate of 9.30 cents effective in the 1940–41 crop-year. Four and one-half million bales of cotton were redeemed during the period from January through July, with the result that on July 31 the Government held only 350,000 bales of loan cotton.[8]

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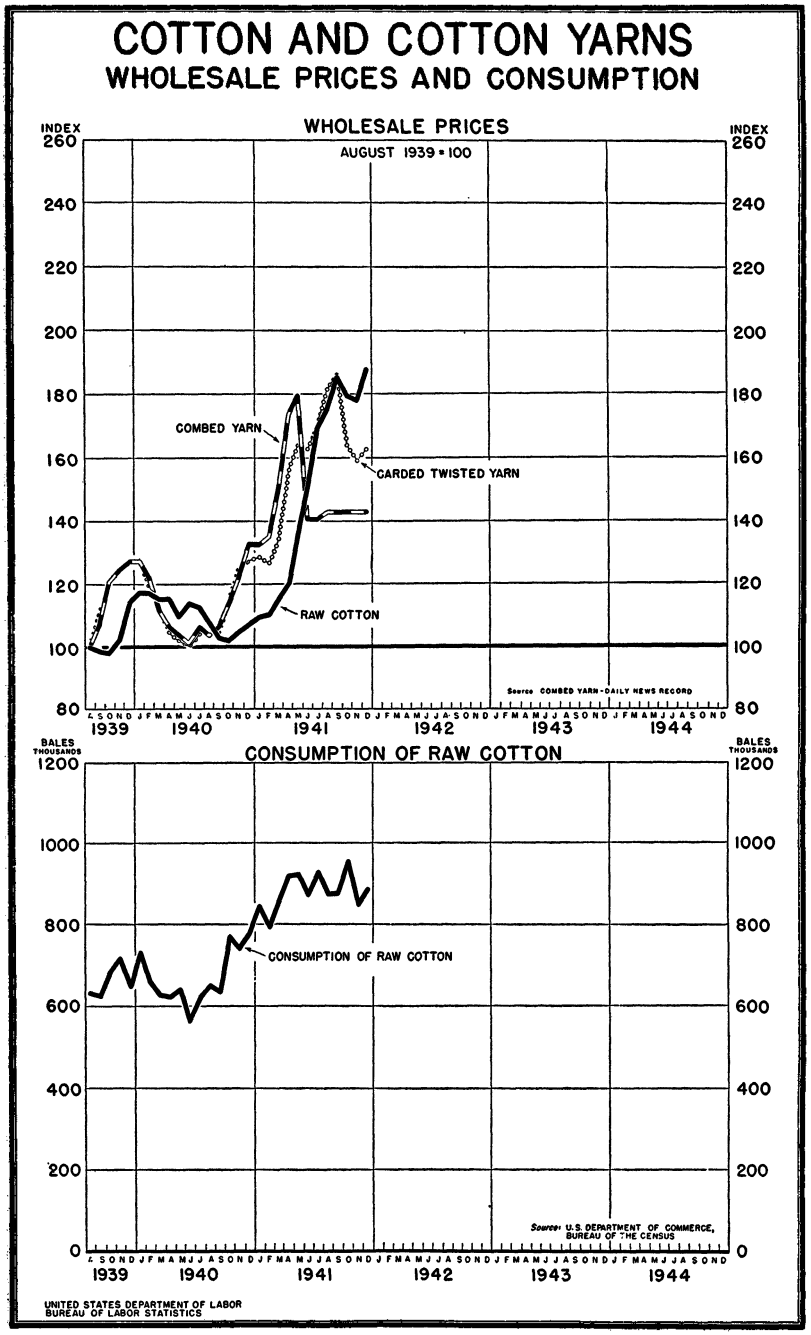
[5] The movement of cotton into loan occurred even though the average price on the 10 spot markets was higher than the average loan rate on these markets in each month. The explanation of this apparent paradox lies in the fact that in some localities, particularly in the important Texas and Oklahoma cotton areas, the specified loan rates applicable to their markets were above the market prices. Furthermore, the premiums established by the Department of Agriculture for certain types of cotton caused the loan rate for these types to be higher than their market prices. In addition, farmers expected a rise in the price of cotton and desired to hold it for sale at a later time.

[6] See discussion of cotton yarns, p. 84.

[7] The Cotton Situation (U. S. Department of Agriculture), April 1941, p. 2.

[8] Not including 6.1 million bales owned outright, as of August 1, 1941, by the Commodity Credit Corporation.



The new loan rate of 14.33 cents per pound on the 1941–42 crop, computed on the basis of the parity price of cotton in July, went into effect August 4, 1941. Although this rate was substantially higher than that of the preceding year, the price of cotton on the domestic market already exceeded it, having risen in July to an average of 15.58 cents per pound. (See table 18.) This increase reflected expectations of a small 1941–42 crop, owing to reduced acreage and to generally unfavorable weather and insect conditions. On August 1, 1941, a crop of only 10.8 million bales was indicated and on September 1 this estimate was lowered slightly to 10.7 million bales.

During October crop prospects improved, the estimate rising to 11 million bales. With the August 1, 1941, carry-over of 12 million bales, this indicated a total supply for 1941–42 approximately equal to that of the previous year. Coupled with rumors of an impending price ceiling for new cotton, this situation brought about a price decline in October of 4 percent from the average September level.

During November the price of cotton again declined slightly, but still averaged 78 percent higher than in August 1939. Weakness of cotton prices in November was due principally to continued discussion of ceiling prices for cotton, unsettled conditions abroad, and large supplies of "free" cotton resulting from the relatively light movement of the 1941 crop into loan.

TABLE 18.—*RAW COTTON: Wholesale Prices (per Pound) and Consumption (in Bales), August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; consumption—U. S. Bureau of the Census]

Year and month	Price (per pound)[1]	Consumption (in bales)	Year and month	Price (per pound)[1]	Consumption (in bales)
1939	*Cents*		*1940*—Continued	*Cents*	
August	9.20	630,667	November	9.66	741,170
September	9.09	624,183	December	9.86	777,482
October	9.03	686,451			
November	9.43	718,719	*1941*		
December	10.54	650,123	January	10.10	844,839
			February	10.13	793,428
1940			March	10.58	854,767
January	10.80	731,793	April	11.09	920,250
February	10.80	661,771	May	12.44	923,518
March	10.60	627,194	June	13.79	875,812
April	10.62	623,098	July	15.58	929,782
May	10.11	641,636	August	16.14	874,113
June	10.48	565,416	September	17.10	875,682
July	10.38	622,723	October	16.49	953,600
August	9.91	650,888	November	16.38	849,743
September	9.48	638,235	December	17.26	887,326
October	9.38	770,832			

[1] Average price of 15/16-inch middling cotton on 10 spot markets.

Cotton Yarns

Cotton yarns are of two main types—carded, which comprises about three-fourths of the industry's output, and combed. Carding, which is the first step in bringing the fibers into parallel order, removes dirt and some short fibers from raw cotton, while combing involves further processing, use of better grade cotton, and removal of all fibers below a certain length.[9] In recent years, the difference in cost be-

[9] Cotton from Raw Material to Finished Product (New York, Cotton-Textile Institute, Inc., 1940), p. 39.

tween the two types has fluctuated from 2½ to 8 cents per pound, some traders estimating the average additional cost involved in producing combed yarn at about 5 cents per pound.[10]

Prices of both carded and combed yarns rose rapidly between August 1939 and January 1940, declined by June 1940 almost to their pre-war levels, and in September began a sustained advance which by May 1941 had carried carded yarns to 64 percent, and combed yarns to 79 percent, above their August 1939 figures. In May 1941 the Office of Price Administration and Civilian Supply issued a schedule setting ceiling prices for combed yarns at well below current market rates. The schedule was revised upward in July and August, combed yarn prices thereafter remaining stable. Carded yarn prices rose steadily, reaching in September a level 86 percent above that of August 1939. In October 1941 a ceiling schedule was issued pegging prices of carded yarns to the market price of raw cotton.

Fluctuations of cotton yarn prices between August 1939 and September 1940 roughly paralleled those of raw cotton. After a speculative advance of 27 percent between the outbreak of war and January 1940, yarn prices declined sharply for 3 months, then remained relatively stable until September 1940 at levels less than 7 percent above the pre-war figures.

In October, however, cotton yarn prices began a sustained upward movement, which was particularly pronounced in October and November as the War Department went into the market on an enormous scale to obtain clothing supplies for its rapidly expanding Army.[11] Since specifications for most military purchases required combed yarns, manufacturers began as early as August to accumulate stocks of the needed types. Despite an increase of almost 12 percent in production from July to September, deliveries from yarn mills had by October become very tight, and industrial buyers found it almost impossible to secure yarns of the counts demanded by the Army and Navy. To ease the pressure on the market, the Army in November revised specifications for khaki fabrics to allow the use of carded yarns.[12] Carded yarn was also substituted for combed in some knitted underwear for the civilian trade. Nevertheless, Army and Navy demand for combed yarns remained so great that, at the end of 1941, stocks were at a record low and several counts were sold months in advance.[13]

This extreme tightness of the market carried the price of combed yarn from 6 percent above the pre-war level in September to 32 above in December. At the beginning of 1941, prices of both combed and carded yarn were above their January 1940 levels, although the price of raw cotton had declined 6 percent during the same period.

Prices of cotton yarn, which rose steadily in late 1940 and the early months of 1941, increased at a much faster rate than raw cotton prices,

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[10] New York Times, May 27, 1941.
Yarn count is measured on the basis of the number of hanks of 840 yards required to weigh a pound. Thus, yarn designated as "30's" counts 30 hanks to a pound. Single yarn is described as "30/1," and ply yarn as "30/2" for two-ply, "30/3" for three-ply, etc. (Cotton-Textile Institute, Inc., op. cit., pp. 9–10.)

[11] The persistence of this strong military demand is indicated by the fact that in December 1941 the trade estimated that about one-half the combed yarn production of sales spinners was going into defense orders; the corresponding percentage for carded yarn was estimated at not more than 15 percent (Journal of Commerce, December 3, 1941).

[12] Daily News Record, November 26, 1940.

[13] Journal of Commerce, December 26, 1940.

which also began to advance in February. Wage increases apparently accounted for only a relatively small proportion of this advance.[14]

In April 1941, the price of two-ply combed yarns, for which military demand was greatest was almost 64 percent above the August 1939 level. The price of two-ply carded yarns, affected by increased consumer demand for textiles, rose 57 percent during the same period. The greater demand for combed yarn was reflected in an increase in the price differential between carded and combed yarn—from 6.4 cents in August 1939 to 12.5 cents in April 1941.

As a result of this rapid increase, Price Administrator Henderson issued a warning to the industry on May 1, 1941, that ceiling prices for combed cotton yarns would be instituted in the near future if "current fictitious levels" were not corrected.[15] As prices continued to rise in May, reports that Government control would be imposed were so widespread that contracts made for combed cotton yarn included clauses guaranteeing a reduction in price if a ceiling were established before date of delivery.[16]

On May 19, Mr. Henderson announced that a ceiling schedule based on a price of 40 cents a pound for 30's single ply combed yarn (then selling for around 52 cents a pound) would be issued in the near future.[17] Trading in both carded and combed yarns virtually halted until the schedule was issued on May 24. The price ceiling was established for combed yarns only, on the basis of 42 cents a pound for 30's single ply. Prices for other counts were related to this price and premiums were allowed on yarn made from better-than-ordinary grades of cotton. In issuing the ceiling, Mr. Henderson stated:

> The ceiling prices established take full account of raw material and manufacturing costs at the present time. The mill margin or spread between cotton costs and yarn prices in recent weeks has been the highest for many years.[18]

Although no price ceiling was set for carded yarns, the Office of Price Administration and Civilian Supply expressed the hope that prices of such yarns would adjust themselves to those of combed yarns. However, carded yarn prices declined only fractionally between May and June, and then began to rise sharply.

Immediately upon establishment of the ceiling, the industry began to attack it; one of the principal criticisms concerned the differential for coarse count yarns. It was argued that the trade had commonly accepted a margin of ¼ cent between counts from 24's to 10's,[19] while the differential set by the Government was ½ cent per count. As a consequence, many producers went so far as to refuse orders on the coarse counts. Accordingly, on June 20, the ceiling was amended retroactively with the differential on coarse yarns changed to ¼ cent per count.[20] At the same time, combed yarn for export was granted retroactive exemption from the ceiling.

Despite these readjustments, combed yarn spinners continued to protest the basic figure of 42 cents a pound for 30's single ply yarn. The price of raw cotton rose 25 percent between May and July, while a power shortage in the South caused intermittent curtailments of

[14] See Hours and Earnings in Manufacture of Cotton Goods, September 1940 and April 1941, in December 1941 issue of Monthly Labor Review. See also Productivity and Unit Labor Cost in Selected Manufacturing Industries, February 1942. (U. S. Bureau of Labor Statistics, mimeographed report.)
[15] Release No. PM 350, May 1, 1941.
[16] New York Times, May 18, 1941.
[17] Release No. PM 410, May 19, 1941.
[18] Price schedule No. 7, Release No. PM 443, May 24, 1941.
[19] Journal of Commerce, May 28, 1941.
[20] Release No. PM 582, June 20, 1941.

operations, particularly in Georgia.[21] On July 19, the Office of Price Administration and Civilian Supply announced that the price schedule would shortly be revised upward in order to cover increased costs.[22] The new schedule, issued on July 21, added 3 cents a pound to the ceiling price for single ply in all counts and 1 cent a pound to that for two-ply in all counts.[23]

At the end of July, cessation of imports of silk from Japan increased the demand for fine combed cotton yarns for hosiery manufacture. In order to increase output of this type of yarn, which is produced at higher cost than coarser counts, the price schedule was further revised on August 2. The new amendment increased the ceiling prices for superfine yarns (86's and higher) by amounts ranging from 11 to 24 cents a pound.[24]

Shortly after the July revision of the combed yarn schedule, prices of carded yarns rose 1 cent. A conference of carded yarn spinners and the Office of Price Administration and Civilian Supply officials was held at the end of July, but no formal action was taken.[25] Carded yarn prices continued to increase at a rapid rate, while combed yarns, reflecting the adjustments in the ceiling, advanced very slowly, until by the end of August some carded yarn was selling above the corresponding size in combed yarn.[26] Consequently, on August 22, when carded yarn prices were 81 percent above the levels prevailing at the outbreak of the war, the OPACS announced that a ceiling on carded yarns would be issued shortly to "restore carded yarns to their normal relationship with the prices for combed cotton yarns." [27]

On October 4, a schedule was issued by which the price of carded cotton yarn was tied to the price of raw cotton, as measured by the average closing price of $^{15}/_{16}$-inch middling grade on 10 spot markets for the previous day.[28] A base price of 15.99 cents a pound for raw cotton (the average price on 10 spot markets on July 19, 1941, when ceilings were established for combed yarn and cotton grey goods) was selected, and the schedule set maximum prices ranging from 35 to 55 cents a pound for single carded yarn and from 39 to 60 cents for numbers of two or more plies. These prices (which were 3 cents below those for the corresponding numbers of combed yarn) were to fluctuate one-half cent per pound with each upward or downward movement of 44½ points in the spot price of raw cotton. Once a contract had been signed, however, it was to be completed at the agreed price regardless of future fluctuations in raw cotton prices.[29]

When the sliding-scale price ceiling was issued for carded cotton yarns, it was also announced that preparations were being made to place combed yarn under a similar type of ceiling, but by December

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[21] Journal of Commerce, July 19, 1941.
[22] Release No. PM 757, July 19, 1941.
[23] Release No. PM 761, July 21, 1941.
[24] Release No. PM 851, August 2, 1941.
[25] Daily News Record, July 28, 1941.
[26] Journal of Commerce, August 20, 1941.
[27] Release No. PM 993, August 22, 1941.
[28] Price Schedule No. 33, Release No. PM 1307, October 4, 1941. Contracts made before October 6 were to have their prices changed to those related to raw-cotton prices on the day before the contract was signed. Carded yarn producers protested against this retroactive clause and on November 7 Price Administrator Henderson announced that the schedule would be amended in respect to contracts made before July 21, 1941, at which time the spot price of cotton was 15.99 cents per pound. This change was made on November 26, 1941, and allowed the filling of contracts entered into on or before July 21 at maximum prices related to the base spot price of cotton. (OPA releases T 41, November 7, 1941, and T 54, November 27, 1941.)
[29] The schedule covered only carded yarn of the ordinary commercial quality, but it was announced that special grades should sell at the ordinary differential above or below these prices, and that a list of fixed differentials would be subsequently issued by the Office of Price Administration.

no such action had been taken.[30] Between October and December, the price of carded cotton yarn remained approximately the same, dropping slightly in November and recovering later in response to changes in the price of raw cotton.

TABLE 19.—*COTTON YARN: Wholesale Prices, and Production Indexes, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; production (cotton spindle activity, operations, percent of capacity)—U. S. Bureau of the Census]

Year and month	Wholesale price per pound of—		Production index (August 1939 =100)	Year and month	Wholesale price per pound of—		Production index (August 1939 =100)
	Combed yarn [1]	Carded yarn [2]			Combed yarn [1]	Carded yarn [2]	
1939	*Cents*	*Cents*		*1940*—Con.	*Cents*	*Cents*	
August	38.5	32.1	100.0	November	47.0	39.9	124.4
September	41.5	35.9	108.7	December	51.0	40.9	123.4
October	46.5	38.8	115.0	*1941*			
November	48.0	39.9	119.0				
December	49.0	40.7	118.3	January	51.0	41.3	131.7
1940				February	52.0	40.7	133.9
January	49.0	41.0	120.8	March	58.0	43.0	137.1
February	47.0	38.5	117.2	April	63.0	50.5	140.5
March	43.0	36.0	111.2	May	69.0	52.6	143.1
April	41.0	33.6	108.1	June	54.0	52.2	142.8
May	40.0	32.8	105.1	July	54.0	54.5	144.5
June	39.0	32.2	103.3	August	55.0	58.2	147.8
July	41.0	33.5	101.8	September	55.0	59.7	145.4
August	40.0	33.3	106.2	October	55.0	52.6	147.8
September	41.0	33.7	113.6	November	55.0	51.1	152.1
October	44.0	36.9	121.4	December	55.0	52.2	145.7

[1] Combed cotton yarn, 2-ply 40's, middling, 1⅛-inch staple.
[2] Carded cotton yarn, 40/2, twisted, weaving.

Cotton Grey Goods

Cotton grey goods consist of "fabrics made from unprocessed yarns, as distinguished from yarn-dyed goods which are made from dyed, bleached, or mercerized yarns." [31] Roughly 40 percent of all goods woven by the cotton-textile industry is sold in the grey goods market concentrated in Worth Street, New York City.[32]

Following a 20-percent rise between August and October 1939, the average price of cotton grey goods eased until September 1940, then began an advance which, by June 1941, carried it almost 73 percent above its pre-war level of 20.71 cents per pound. Price ceilings established in June 1941 at 15 percent below current market rates for leading types of grey goods were adjusted upward in July and August, and in October were replaced by a sliding-scale ceiling schedule which pegged grey goods prices to those of raw cotton. Except for slight declines in July, October, and November, the average price of grey goods rose steadily throughout the summer and fall of 1941, reaching in

[30] On October 8, however, a change was made in the schedule for combed yarn; the Office of Price Administration announced that the new price ceilings would apply to yarn delivered freight prepaid to the purchaser's point of business; the phrase "purchaser's customary receiving point" had been interpreted by certain combed yarn manufacturers as referring to the seller's mill, with freight charges being added to the ceiling price.

[31] The Marketing of Textiles, by Reavis Cox (Washington, The Textile Foundation, 1938), p. 117.

[32] Of all woven goods, approximately one-fourth is yarn-dyed, one-fourth never finished, and one-half produced in the grey and subsequently finished. Of the last type, about one-fifth is finished by weavers themselves and the remainder sold in the grey. (Ibid., pp. 117–118.)

While this chapter deals primarily with grey goods which are later finished, reference is also made occasionally to certain types of yarn-dyed cloth and to cotton goods which are used in the grey.

December a level of 37.68 cents per pound—82 percent above that of August 1939. (See table 20.)

During the Defense Period, cotton grey-goods prices were influenced largely by the same factors which affected prices of cotton yarn. Until the fall of 1940, the average price of grey goods showed two major movements, a 20-percent increase between August and October 1939, and a decline which began in November and lasted throughout the summer of 1940, when the price dropped to 3 percent above its pre-war level.

The price of print cloth—a leading type of grey goods—followed the same pattern, rising from 3.5 to 4.1 cents per yard between August and October 1939, easing during the winter and spring of 1940, and then remaining stable at 3.6 cents per yard—3 percent above its pre-war level—until September, when it once more began to advance. Prices of duck—another important class of grey goods—fluctuated at relatively higher levels than those of print cloth during this period. Rising from 26.3 cents per yard in August 1939 to 33.9 cents in December, the price of duck remained at its December level through February 1940 and, although it fell 11 percent between February and May, recovered in July to a level of 35.7 cents per yard, 36 percent above the pre-war quotation.

Increased military and civilian demand as well as higher prices for raw cotton contributed to a sustained rise in the price of cotton grey goods, beginning in September 1940. The price of duck, which had been at a high level during the summer of 1940, remained stable during September and October and in contrast to the general trend, eased slightly in November. However, early in 1941 duck prices, like those of other grey goods, began to rise steadily.

By February 1941 the average price of grey goods was 27 percent above its August 1939 level and mill margins[33] had risen from 11.42 cents to 16.00 cents per pound. The Advisory Commission to the Council on National Defense was reported to be seriously concerned about this rise, but direct Government intervention was not expected by the industry.[34]

The Textile Fabrics Association, at its annual meeting in April 1941, received telegrams from members of the National Defense Advisory Commission urging that no further price increases be instituted in cotton textiles.[35] By May, however, the average price of grey goods was 61 percent above its August 1939 level, while mill margins had advanced to 20.85 cents per pound. At this time, the Office of Price Administration and Civilian Supply received a formal protest from the president of the House Dress Institute against rising cotton grey-goods prices.[36]

[33] Mill margins represent the difference between the price of cloth obtainable from a pound of cotton and the price of the cotton. The prices used in computing the mill margin are for 17 standard constructions unfinished (not including fine cloth) in the New York market, taken from the International Textile Apparel Analysis. Unfinished (grey) cloth is cloth that has not been bleached, dyed, or colored. Price per yard was converted to price per pound on the basis of approximate quantity of cloth obtainable from a pound of cotton with adjustment for salable waste. The number of yards of cloth obtainable from a pound of cotton varied, for the 17 constructions included, from 2.0 to 8.2 according to the construction. Raw cotton prices are based on the average price of ⅞ middling cotton in 10 spot markets adjusted for premiums and discounts for grade and staples as quoted in 6 markets. However, this is not necessarily the price paid by mills, for transportation and handling charges from central markets to manufacturing markets have not been included. Mill margins are compiled by the U. S. Department of Agriculture, Agricultural Marketing Service and published in Survey of Current Business, U. S. Department of Commerce.

[34] Daily News Record, February 11, 1941.

[35] New York Times, March 16, 1941.

[36] Idem, May 15, 1941.

On May 24, 1941, a price ceiling was fixed for combed cotton yarns, but in succeeding months prices of cotton grey goods continued to rise, particularly those made from combed yarns, which were still exempt from control. In June, duck and print-cloth prices were, respectively, 59 and 77 percent above the pre-war quotations, while the average price of grey goods had reached a level almost 73 percent above that of August 1939. Mill margins had almost doubled in the same period, rising from an average of 11.42 cents to 21.84 cents per pound. Only a small part of this increase in spread could be attributed to higher labor costs; average hourly earnings in the industry had risen only 18 percent since the outbreak of the war in Europe.[37]

Widespread rumors that a price ceiling would soon be established had by June 21 virtually halted all trading in the grey-goods market, as the trade awaited a definite announcement.[38] On June 28, the Price Administrator announced the schedule establishing ceiling prices, f. o. b. seller's point of shipment, for six leading types of cotton grey goods at levels approximately 15 percent below the current figures. In announcing the schedule, Mr. Henderson stated: "The price ceilings take into account the current price of raw cotton and at the same time make adequate allowance for operating costs of mills." [39]

The ceiling prices were to become effective June 30, 1941, applying to existing as well as future contracts. With regard to the scope of the schedule, Mr. Henderson said:

> Ceiling prices are mandatory only as to the types of grey goods specified. It is expected, however, that ceilings on these six types will establish a basis for prices of other constructions and that normal interplay of market forces will bring the others into line. If this does not happen the ceilings will be extended to cover specifically other types of grey goods.[39]

The Worth Street market vigorously protested various features of the ceiling schedule, especially the retroactive clause. Deliveries of grey goods at previously contracted, above-ceiling prices were reported, while many mills refused to quote prices on new contracts at ceiling levels, adopting instead the practice of making deliveries at above-ceiling prices with the provision that if the schedule proved valid, excess over the ceiling price would be refunded.

As a formal expression of protest by the trade, a Cotton Textile Advisory panel was created to advise the Office of Price Administration and Civilian Supply on matters pertaining to textile prices.[40] After a series of meetings with this group, the Office of Price Administration and Civilian Supply announced on July 19, 1941, that ceiling prices for cotton grey goods would be raised because of the increases in cotton prices and the added costs resulting from third-shift operations, training of learners, and intermittent power shutdowns.[41]

On July 21, the revised price schedule was issued, effective retroactively to June 30, adjusting upward the prices of all previously covered types of cotton grey goods. The increases ranged from 10 to

[37] Average hourly earnings figures (as regularly reported to the U. S. Bureau of Labor Statistics, Wage and Hour Division) include cotton broad woven goods, cotton yarn, and cotton thread. According to the Census of Manufactures, wages in the cotton woven broad fabrics industry, constituted about 26 percent of the value of the product in 1939.

[38] Daily News Record, June 19, 23, 25, 26; New York Times, June 20, 21, 23, 25, 29; Journal of Commerce, June 21, 23, 24, 1941.

[39] Price schedule No. 11, Release No. PM 637, June 28, 1941.

[40] Daily News Record, July 14, 1941; Release No. PM 720, July 13, 1941.

[41] Release No. PM 757, July 19, 1941.

28 percent.[42] Producers were permitted to carry out contracts made before June 30 involving prices lower than the new ceiling levels, irrespective of whether they were above those permitted by the original schedule.[43]

The effect of the June ceiling and the July and August revisions on grey goods in general is indicated by the behavior of the average price of grey goods. (See table 20.) The June 30 ceiling affected July sales of those grey goods not covered by the retroactive provisions of the July 21 revision. The average price of grey goods fell from 73 percent above the pre-war level in June to a July figure 68 percent above that level. After the August revisions, the average price rose to about 80 percent above the August 1939 figure, its highest level after the outbreak of the war. Concurrently, the margin, affected both by the ceiling orders and by the rise in the price of cotton, fell from 21.84 cents a pound in June to 19.06 cents in July; and rose in August to 20.53 cents.

Even after this increase in ceiling prices, trading in grey goods continued slow. Some mills were said to be sold up until October, while others were refusing orders in the expectation that the continued rise in cotton prices would induce the Government to set still higher maximum prices for grey goods.[44] In an attempt to stimulate sales of cotton grey goods, the Office of Price Administration and Civilian Supply on August 9 issued a further amendment to the ceiling, granting restricted exemptions to wholesalers, jobbers, and retailers who sold grey goods for use in unfinished form to industry or private consumers.[45]

On August 22, 1941, price ceilings were extended to include several other types of grey goods.[46] Contracts already made for such goods at higher than ceiling prices were not to be filled without specific permission of the Office of Price Administration.

Extension of the ceiling was accompanied by a decrease in mill activity. Cotton-mill consumption, which had recovered in July, was lower again in August and September; in May, before the price-ceiling action, it was 46 percent above the August 1939 level; by September it had fallen to 39 percent above the pre-war figure.

In September 1941, Office of Price Administration officials and cotton grey-goods producers held a series of meetings for the purpose of completely revising grey-goods ceiling prices. On September 19, Price Administrator Henderson announced that a ceiling would soon be established under which grey-goods prices would fluctuate with the

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[42] The ceiling prices for print cloth and carded broadcloth were raised from 39 to 43 cents a pound. The combed broadcloth ceiling price became 61 cents a pound instead of 54 cents. The maximum prices for three classes of sheetings were increased from 30, 32, and 33½ cents to 35½ cents, 36½ cents, and 38 cents a pound. Part-waste osnaburgs were divided into two classes and ceiling prices of 29 and 32 cents were set according to the yarn numbers involved; this replaced the former single figure of 25 cents. Tobacco cloth received a ceiling price of 46 cents a pound in place of the old level of 39 cents.

Other changes concerned differences in quality. A premium of 1 cent per pound was to be allowed for fabrics made with "feeler motion," which assures better than ordinary quality. In addition, a further premium of 1 cent per pound could be charged for fabrics of shade cloth quality.

[43] This provision was amended on November 27 to allow completion of deliveries under contracts made before July 1, 1941, at maximum prices based upon a spot price of 15.99 cents per pound.

[44] Daily News Record, August 7, 1941.

[45] Release No. PM 904, August 9, 1941.

[46] Maximum prices, expressed on a yardage rather than a poundage basis, were announced for combed lawns (10¼ cents), dimities (10¾ cents), voile (9 cents), and two constructions of high grade broadcloth (15⅞ cents and 17 cents). Other changes announced at this time were a ruling that "seconds" and "shorts" of all materials should not exceed 95 percent of the ceiling price for such goods, and a provision that no "feeler motion" premium was to be allowed for combed broadcloths, since all such cloths are made in this fashion. (Release No. PM 993, August 22, 1941.)

price of raw cotton. This schedule, according to Mr. Henderson, was expected to "facilitate the flow of textiles under the price ceiling."[47]

No action was taken by the Government for a month,[48] while trading in grey goods continued to be restricted as the industry awaited a definite announcement. The new schedule, issued on October 20, covered a wide range of cotton grey goods, including various types of print cloths, sheetings, denims, and colored yarn cloths, the prices of which, like those of cotton yarn, were to fluctuate according to changes of designated amounts in the price of raw cotton.[49] At this time, it was estimated that price ceilings covered approximately two-thirds of all primary cotton textiles manufactured in the United States.[50]

After the issuance of the new schedule, the rate of activity in the grey-goods market tended to vary directly with the movement of raw-cotton prices. These prices rose substantially in December, with a resultant increase in ceiling prices of cotton goods. The average price of grey goods, which had declined fractionally in October and November, rose in December to a point 82 percent above the August 1939 level. Duck prices in November were 92 percent and print-cloth prices 74 percent above their pre-war levels. Mill margins, which had remained relatively stable during August, September, and October, continued at about the same level—slightly above 20 cents a pound—as compared with 11.42 cents in August 1939.

On November 28, 1941, the House of Representatives passed and sent to the Senate the price-control bill, including provisions granting special treatment to agricultural commodities. However, this action had been expected by the market, and the price of raw cotton rose only 13 points, with a corresponding slight increase in the price of cotton grey goods. Early December was apparently a period of inventory speculation, as producers anticipated further advances in the price of raw cotton.

While the intervention of the Office of Price Administration and Civilian Supply at the end of June failed to prevent further advances in grey-goods prices entirely, it did succeed in substantially retarding their pace. In fact average mill margins in December were lower than in June, though they remained far above the figures prevailing in August 1939.

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[47] Release No. PM 1197, September 19, 1941.

[48] Except an amendment on October 5, allowing a premium on combed lawn meeting the requirements of the U. S. Marine Corps for poncho material. (Release No. PM 1313, October 5, 1941.)

[49] As measured by the prices in 10 spot markets. (Price Schedule No. 35, Release No. PM 1393, October 20, 1941.) On November 27 the schedule was amended to allow premiums on certain varieties of fine goods. (Release T 54, November 27, 1941.)

[50] Daily News Record, October 20, 1941.

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TABLE 20.—*COTTON GREY GOODS: Prices and Mill Margins, August 1939–December 1941*

[Sources: Duck and print cloths—U. S. Bureau of Labor Statistics; average price and estimated mill margin, 17 standard constructions—U. S. Department of Agriculture, Agricultural Marketing Service]

Year and month	Price per yard of—		Composite of 17 constructions	
	Duck [1]	Print cloth [2]	Average price [3] per pound	Estimated mill margin [4] per pound
1939	*Cents*	*Cents*	*Cents*	*Cents*
August	26.3	3.5	20.71	11.42
September	30.3	4.0	23.75	14.58
October	32.1	4.1	24.94	15.83
November	33.4	4.1	24.51	15.02
December	33.9	4.1	24.38	13.72
1940				
January	33.9	4.1	24.25	13.36
February	33.9	3.9	23.14	12.25
March	33.4	3.8	22.29	11.59
April	31.4	3.8	22.12	11.40
May	30.3	3.7	21.58	11.37
June	32.1	3.6	21.26	10.68
July	35.7	3.6	21.48	11.00
August	35.7	3.6	21.24	11.23
September	35.7	3.7	21.83	12.26
October	35.7	3.9	22.79	13.31
November	35.4	4.1	24.00	14.24
December	35.6	4.1	24.48	14.50
1941				
January	35.6	4.2	25.16	14.94
February	39.5	4.4	26.27	16.00
March	39.5	4.9	28.90	18.17
April	39.5	5.4	31.05	19.81
May	39.6	5.8	33.42	20.85
June	41.9	6.2	35.74	21.84
July	43.5	5.5	34.74	19.06
August	45.4	5.7	36.78	20.53
September	47.4	5.7	37.22	20.01
October	50.4	5.9	37.06	20.45
November	50.4	6.1	36.84	20.34
December	50.4	6.2	37.68	20.30

[1] Wide No. 8, 46 x 28, 36", 0.8888 yards per pound, carded yarn, f. o. b. mill.
[2] 27", 64 x 60, 7.60 yards per pound in the grey, unmercerized, f. o. b. mill.
[3] Unfinished (not including fine cloth) in the New York market, converted to a price-per-pound basis.
[4] Difference between the price of cloth obtainable from a pound of cotton and the price of raw cotton; the price of raw cotton is the average price of ⅞-inch middling cotton in 10 spot markets, adjusted for grade and staple premiums and discounts.

Wool

RAW WOOL

Raw wool may be divided into two broad classes—apparel wool and carpet wool. Price movements of the latter are described in the chapter on housefurnishings. The following analysis deals solely with apparel wool, from which most woolen and worsted clothing is made.

During the 10-year period 1930–39, domestic production of apparel wool averaged 431 million pounds annually, approximately 87 percent of average yearly consumption in the United States, the balance being made up of imports from Australia and Uruguay and, to a lesser extent, from New Zealand, Argentina, the United Kingdom, and South Africa.

Marketing of apparel wool begins with sales by growers to local dealers, buyers for large central market merchants, or cooperative

organizations.[51] Sales are made for cash when the wool is sold at shearing time, or on consignment to a central marketing agency, or by contract made prior to the shearing season. Most wool eventually arrives at one of the four large central markets—Boston (which is by far the most important), Chicago, St. Louis, and Philadelphia, where it passes into the hands of large wool merchants who grade, classify, store, and finally sell it.

The price of domestic wool in the Boston market rose 58 percent between August and October 1939, declined almost 22 percent during the next 7 months, and remained within 25 percent of its pre-war level of 72 cents per pound until September 1940. In the fall of 1940 the price again turned up and although a period of marked stability occurred during the summer of 1941, by the end of the Defense Period the price was about 57 percent above its pre-war level.

When war broke out in August 1939, wool supplies appeared adequate. The quantity of wool shorn in the United States for the year beginning April 1939 was estimated to be about 376 million pounds, 1 percent over 1938,[52] apparel wool stocks amounted to 244,862,000 pounds,[53] and apparel wool consumption in the preceding month had been 54,208,000 pounds.[54] (See table 21.) Nevertheless, between August and October 1939 the price of domestic wool (territory, staple, fine and fine medium, scoured basis) in the Boston market advanced 58 percent to $1.14 per pound—its peak for the Defense Period—while Australian wool also rose 58 percent.[55] This increase reflected primarily the relative smallness of domestic stocks and the purchase by Great Britain in September of the entire Australian wool clip for the duration, making imports of Australian wool and its selling price in the United States dependent upon decisions of the British Government. Total imports of apparel wool, which rose in September to 161 percent above their August level, fell off somewhat in October but remained more than twice the August figure.

Following this initial advance the price of domestic wool dropped steadily from October 1939 to April 1940, falling 22 percent. The controlled price of Australian wool fell 13 percent in the same period. The decline in domestic wool prices reflected a 64-percent drop in mill consumption, from 74 million pounds in October 1939 to 27 million in April 1940, and an increase in total wool supply resulting from exceptionally large imports from South Africa and South America.

The downward trend in domestic prices was checked in April 1940 when the rate of woolen and worsted mill operations was sharply accelerated. From April to August 1940, the price of domestic wool in the Boston market remained practically unchanged, although Australian wool prices declined moderately. During this period, con-

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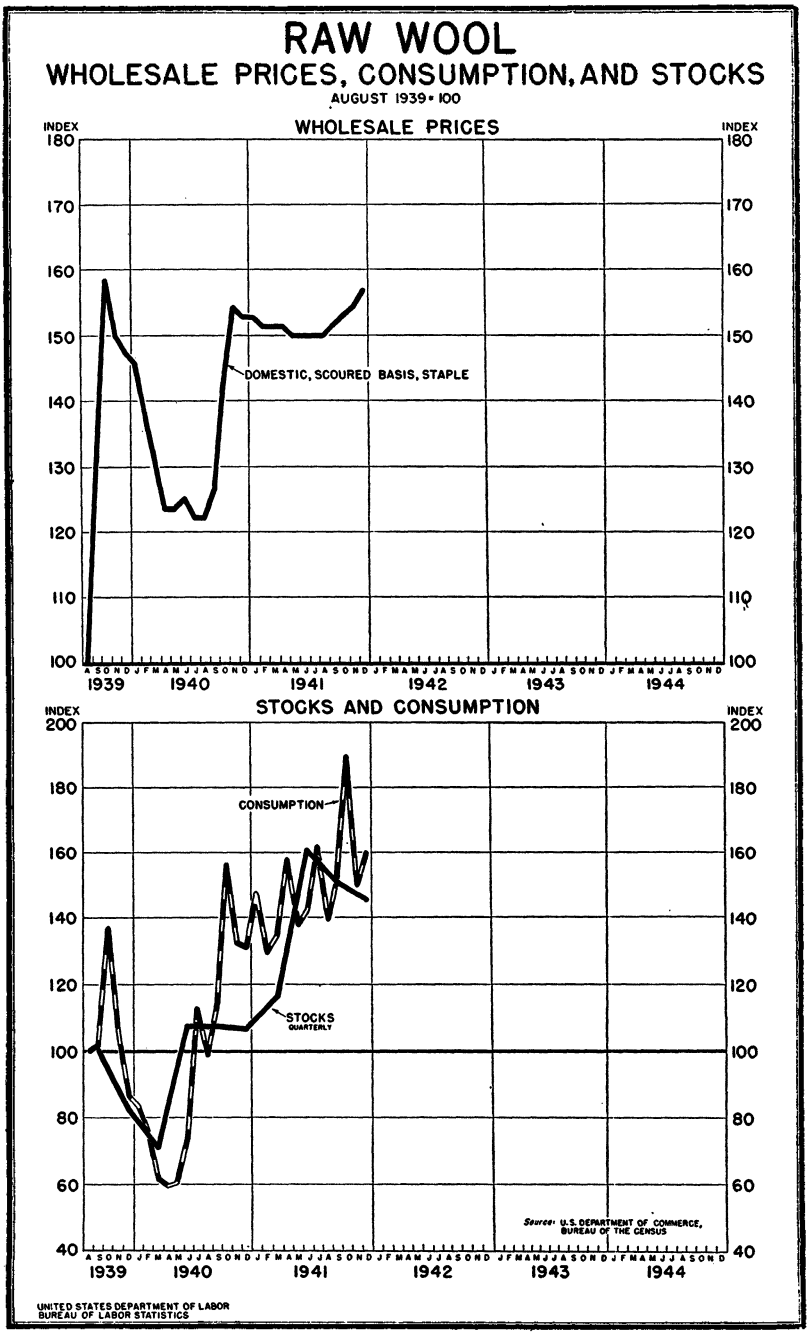
[51] Raw wool at all stages of marketing is usually sold "in the grease," which is the wool as it comes off the sheep, containing animal grease, dirt, briers, and other foreign matter which comprises about 55 percent of the weight. After these foreign materials have been removed, causing considerable shrinkage, the product is known as "scoured" wool. All references to quantity in this discussion are in terms of pounds of wool, grease basis. However, prices for wool which is still in the grease are quoted on a scoured basis, which involves an estimate of the amount of shrinkage which will occur in the scouring process.

[52] The Agricultural Situation, September 1939 (U. S. Department of Agriculture).

[53] Grease basis, September 1939. Compiled by the U. S. Bureau of the Census, and representing "stocks of apparel-class wool held by and afloat to between 95 and 99 percent of all dealers (including commission houses, pullers, and cooperatives), top-makers, and manufacturers who usually hold significant stocks of wool."

[54] Grease basis. Compiled by the U. S. Bureau of the Census.

[55] Prices of Australian wool (Sydney, 64-70's scoured, in bond, Boston) compiled by U. S. Department of Agriculture, Agricultural Marketing Service, and published in "Survey of Current Business (U. S. Department of Commerce)."



sumption, stimulated by improved business conditions and, beginning in June, by Army orders, rose 98 precent. At the same time imports of apparel wool fell off sharply from the high levels of the previous months. The bulk of the 1939 wool clip in Argentina and Uruguay had been sold by the end of February, with the result that exports from those countries began to fall off early in March. Sales of wool in the Union of South Africa—the other major source of United States imports at that time—also were small after February as supplies became exhausted. In addition, imports from both South America and South Africa were delayed by lack of ocean shipping space. Exports from the Union of South Africa were reported to be much smaller than the amount of wool sold, as large supplies were held at ports awaiting shipment.[56]

The domestic wool market strengthened further between August and November 1940, the price rising to 54 percent above its pre-war level. Heavy Government purchases for the rapidly expanding Army, at a time when there was a shortage of fine domestic wools upon the market, were principally responsible for this advance. The extent of Government demand is indicated by the fact that Army requirements alone, during the fiscal year 1940–41, were estimated by the Department of Agriculture to be 244 million pounds of apparel wool, approximately 50 percent of the country's average annual peacetime consumption. Since manufacturers of worsted goods for the Army were prohibited, until November 1940, from using foreign wools, the full stimulus of buying for military orders was felt by the domestic wool market. In addition, civilian demand for woolen and worsted goods was rising with the increase in consumer purchasing power. At the end of the year, England raised the price of Australian wool to a level nearly as high as the peak quotation of October 1939.

The advance in domestic wool prices was halted in November, principally by a decision of the Army to allow its contractors to use foreign wools, which led to a substantial increase in imports from South America. Between November 1940 and December 1941 the price fluctuated within a range of less than 5 percent. The price of Australian wool in the United States rose 9 percent between November and December 1940 and remained relatively stable during 1941, declining moderately in the second half of the year and rising in December to a point approximately 4 percent above the November 1940 level.

This price stability was partly due to the importation of unprecedented supplies, particularly from South America, thus balancing the rapidly growing demand. In 1941, the total supply of apparel wool was slightly more than 1 billion pounds, grease basis, domestic production reaching a record level of 455 million pounds (greasy shorn and pulled); imports for consumption during the first 9 months of the year totaled 491 million pounds, as compared with 133 million pounds in the corresponding months of 1940 and an average level of 64 million pounds for those months in the preceding 5 years.[57] The increase of

[56] The Wool Situation (U. S. Department of Agriculture), May 10, 1940.
[57] Idem, December 1941 and April 1942.

shipments from Australia, though substantial, was much less important than the rise in imports from South America.[58]

Domestic mill consumption in 1941 attained the highest levels ever recorded, being estimated at almost a billion pounds, or more than double the 1935–39 average consumption.[59] In June 1941, Army requirements for the 1942 fiscal year (July 1, 1941–June 30, 1942) had been estimated at 260 million pounds,[60] but these estimates were subsequently raised, and in February 1942 it was indicated that the Army alone would need approximately 480 million pounds during the calendar year 1942,[61] as compared with an average annual peacetime consumption in the United States of 495 million pounds.

The price of domestic wool rose slightly in September 1941 and again in October, because of a buying scramble by mills which followed the largest Army order issued up to that time. The advance continued through November, and threatened to become of major proportions following the Japanese attack on Pearl Harbor.

WOOL TOPS

Raw wool which has been cleaned and scoured must pass through two preliminary manufacturing processes—carding and spinning—before it is ready for weaving and knitting into woolen yarn. To produce worsted yarn, an additional process—combing—is employed after the wool has been carded. Combing segregates long from short fibers, the former, known as "tops," being brought into parallel order and spun into worsted yarn, while the short fibers or "noils" are used in the woolen industry. In contrast to the marketing of cotton yarn, a separate market exists for wool after it has passed through the combing process.[62]

Prices of wool tops advanced 40 percent between August and October 1939, dropped back to 20 percent above their pre-war level in March 1940, and then turned up again in September under the stimulus of Army demand for worsted goods. Except for two slight interruptions during the summer, prices rose steadily throughout 1941, reaching a level 70 percent above that of August 1939 at the close of the Defense Period. (See table 21.)

The advance in prices and production of wool tops following the outbreak of war in Europe was due in part to seasonal factors, in part to international events affecting the price of raw wool,[63] and in part

[58] In October 1940, the National Defense Advisory Commission made arrangements with the British Government to store 250 million pounds of Australian wool in the United States, as an emergency stock pile. The wool is stored in bond, ownership being retained by the British Government, and can be sold on the United States market only in the event that a supply shortage is found to exist here. In the first 9 months of 1941, 93 million pounds of Australian wool were imported into this country for British account under that arrangement, and held as a reserve stock pile. (That wool is not included in the figure given above for imports for consumption during the period January–September 1941). Cf. The Wool Situation, December 1941.

[59] The Wool Situation (U. S. Department of Agriculture), April 1942.

[60] Idem, June 1941.

[61] Commercial Chronicle, February 7, 1942.

[62] According to the Census of Manufactures, the wool industry in 1939 produced 185,457,367 pounds of wool tops, of which 95,447,808 pounds were produced by spinners for their own use, and the remainder by specialized combers.

[63] "Prices of spot wool and of tops manufactured from the wool," according to the Department of Agriculture, "differ largely because of the costs of converting wool into tops. These costs consist in considerable part of the charge for combing. In addition there is a loss on the resale of noils, or short fibers. * * * This loss is likely to increase as wool prices advance to a smaller extent than prices of raw wool or tops. On occasion the tops may have a value which reflects their immediate availability, as compared with a considerable delay which might be encountered in converting wool into tops." (Cf. U. S. Department of Agriculture, Commodity Exchange Administration, Trading in Wool Top Futures, pp. 10–11.) Noils prices as reported in the Commercial Bulletin were only 28.3 percent above the pre-war figure in November 1941.

to the market speculation common to most commodities during that period. Between August and October 1939, prices of wool tops rose 40 percent; their production in terms of active hours of worsted combs advanced 15 percent; and the price spread between raw wool and wool tops increased substantially. By November 1939, however, this speculative flurry had subsided. Reflecting a decrease in demand for wool products, prices of wool tops dropped 12 percent from November 1939 to April 1940, while production declined 45 percent.

In the spring of 1940, actual and potential military demand for wool products led to a moderate upturn in prices, wool tops between May and June 1940 rising 4 percent to a level 18 percent above the pre-war figure. Prices declined in July, but began to advance again in August, and by November 1940 were 58 percent above their August 1939 level.

Beginning in May 1940, production of wool tops rose steadily, reaching by October a figure 26 percent above the pre-war level, the highest point attained during the period for which records are available, i. e., since 1920.[64] The increase in demand, however, exceeded the advance in production with the result that during October 1940 wool combing constituted a marked bottleneck in the production of worsted textiles.[65] Although buyers were then of the opinion that this tightness of supply would prove only temporary, it actually persisted throughout the remainder of the Defense Period. Through the institution of 2- and 3-shift operations, the number of active hours of worsted combs increased substantially, but the number of combing machines in operation scarcely changed, totaling 2,034,000 in August 1939 and 2,058,000 in October 1940.[66]

The fractional decline in raw-wool prices which followed the Army's decision in November 1940 to accept woven goods made from foreign wool was not reflected in the price of wool tops. Tight supplies together with anticipation of increased purchases of wool products, following passage of the Selective Service Act, combined to boost wool-top prices 9 percent between October and November 1940, and the advance continued in December, prices reaching a level 61 percent above that of August 1939.

Wool-top prices continued to rise in 1941 as it became increasingly apparent that purchases for the armed forces were to include far more than replacement orders. Seventy-one percent above the pre-war level in March, the price of wool tops eased in April but in May advanced to its peak for the Defense Period—74 percent above the August 1939 quotation.

An acute shortage of machinery combined with heavy demand to support prices at this level. On April 19, 1942, it was reported in the Commercial Bulletin that—

> The combing situation, which is in the worst condition it has been in many years, continues to grow more serious, and at the rate top makers are booking business it won't be long before machinery is covered for the balance of the year * * * . Scarcely a pound of top is available for delivery prior to July and only a small quantity can be offered between July and October.

In November 1941, production as measured by active hours of machines had increased to almost 52 percent above the August 1939

[64] Daily News Record, December 17, 1940.
[65] Idem, October 14, 1940.
[66] Wool Machinery Activity Reports (U. S. Department of Commerce, Bureau of the Census). During the same period, the number of combing machines owned by mills, regardless of condition, actually declined from 2,676,000 to 2,599,000 and the number set up in operating position decreased from 2,606,000 to 2,505,000.

level, but the number of worsted combs in operation was only 13 percent above the pre-war figure.[67]

Reflecting this continuing pressure of demand upon available supplies, wool-top prices were 70 percent above their August 1939 level at the close of the Defense Period.

WORSTED YARN

Price movements of worsted yarn [68] during the Defense Period paralleled those of raw wool and wool tops, reflecting essentially the same factors. After a 33-percent advance in the early fall of 1939, the price of worsted yarn (2/32s, crossbred stock, white) eased until the summer of 1940, rising thereafter to almost 57 percent above its pre-war level ($1.15 per pound) at the close of the Defense Period. The increase in yarn prices, however, lagged far behind that of raw wool and wool tops until the fall of 1941. (See table 21.)

Large-scale Government purchases of worsted goods were primarily responsible for the sustained rise in yarn prices which began in the fall of 1940. Yarn prices advanced in July, declined slightly in August, and in September began an increase which continued uninterruptedly for 3 months. Worsted-yarn production started upward slightly earlier, in May 1940, and by November had reached a point 33 percent above the pre-war level. However, demand continued to exceed available supply and in the fall of 1940 (November 8) the New York Journal of Commerce reported:

> Sales spinners making the all-domestic yarns for weaving of Army fabrics are so rushed they are quoting prices either so far ahead of the market as to shut off demand or else they have frankly advised their customers for civilian use that they are, for the present, unable to take care of them.

This inability to fill orders was due in large part to the shortage of wool tops. In January 1941, it was reported that some spinners of men's wear worsted yarn not only had large backlogs of orders but were unable to run even one full shift because of the scarcity of tops.[69] Manufacturers' preference for Government orders, not only because of the "sure credit and steady deliveries inherent in Government contracts" [70] but also "for the sake of the priorities position which might sometime result for the holder of Government contracts," [71] accentuated the shortage of yarn for civilian goods.

In February 1941 worsted yarn prices, then 27 percent above the pre-war level, began an advance which continued through November. Although this increase was more gradual than that of wool tops, worsted-yarn prices by December 1941 were almost 57 percent above those of August 1939, while wool tops had advanced 70 percent during the same period. Production, in terms of active hours, in November 1941, was 58 percent above its August 1939 level, while in terms of the number of active spindles, it exceeded the pre-war level by almost 25

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[67] Wool Machinery Activity Reports (U. S. Department of Commerce, Bureau of the Census). The number of combs owned by mills declined by 3.1 percent and the number set up in operating position by 3.2 percent from August 1939 to November 1941.

[68] Worsted yarn is spun only from wool tops, in contrast to woolen yarn, which is composed of yarn too short for combing, noils, and in some cases waste and shoddy (reworked and reprocessed wool). Woolen yarn which contains waste and shoddy must be so labeled, and a price differential exists between virgin wool yarn and shoddy wool yarn. Since most woolen yarn is used in plants where it is made and wide quality differences exist among the different types, adequate price series for woolen yarn are not available; this discussion is therefore limited to worsted yarn, for which price series are readily available.

[69] Journal of Commerce, January 31, 1941.

[70] Commercial Bulletin, February 22, 1941.

[71] Wool Machinery Activity Reports (U. S. Department of Commerce, Bureau of the Census).

percent. This slower increase in the number of active spindles did not constitute a serious production problem, however, since the real bottleneck was in the preceding stage of the production of wool tops.

WORSTED FABRICS

In contrast to cotton and rayon, woven goods made of wool have no important "grey-goods" market.[72] Most woolen and worsted apparel fabrics are yarn-dyed, and when woven are sold in finished form to garment cutters.[73]

The price of uniform serge suiting (medium, 12-ounce, 56–58 inch), a leading worsted fabric, rose 25 percent between August 1939 and January 1940, eased slightly in the next 2 months, and remained at a level 18 percent above that of August 1939 until September 1940, when it began an advance which in the fall of 1941 carried it 49 percent above its pre-war level of $1.63 per yard. (See table 21.)

Shortly after the outbreak of war in Europe, prices and production of worsted fabrics, like those of other wool products, began to advance, prices mounting steadily from September through the end of the year, and production, which declined in September, rising by December to 20 percent above its August 1939 level.

Retail sales of clothing, however, failed to keep pace with this advance in output, and both prices and production of worsted fabrics turned downward early in 1940. By March, the price of uniform serge was only 18 percent above the pre-war level, where it remained until fall. However, by April, loom activity had fallen to the lowest level it had touched in nearly 2 years, 36 percent below its August 1939 position.

This downward trend was reversed in May, and by October, production of woolen and worsted cloth had risen 73 percent above its April level to a point 11 percent above the August 1939 level. Unfilled orders as reported by a sample consisting of 119 mills [74] indicate the importance of Army orders in stimulating production. Whereas, during the third quarter of 1939, unfilled orders for wool woven cloth for Government use amounted to only 635,000 linear yards, or slightly more than 1 percent of total unfilled orders, in the same period of 1940 they aggregated 12,806,000 linear yards, or almost 28 percent of the total.

This rapid increase in Army demand was offset, to some extent, by weakness in orders placed for the manufacture of civilian fabrics. During the late summer and early fall of 1940, purchases of worsted fabrics by clothing manufacturers were unusually light because of the uncertainty concerning the effect of the Selective Service Act on retail

[72] "Weavers of wool fabrics sell small quantities of goods in the grey, but only in the sense that they permit the buyers to order goods in advance of the season without specifying the colors. Before being delivered, these goods are finished by or for the weaver in accordance with instructions from the buyer." (The Marketing of Textiles, by Reavis Cox (Washington, The Textile Foundation, 1938), p. 118.)

[73] Worsted fabrics are distinguished by their smooth surface in contrast to the soft fuzzy appearance of fabrics woven from woolen yarns. No regularly published statistics are available showing the separate output of woolen and of worsted fabrics. However, in 1935–36 the Crompton and Knowles Looms Works conducted a survey of 2,262 textile mills, using 193,399 of its looms, which revealed that the 42,119 woolen and worsted looms included were used as follows: of 15,230 automatic looms, 10,463 or 69 percent of the total were used for the manufacture of worsted goods and 4,767 or 31 percent for the manufacture of woolen goods; of 26,889 nonautomatic looms, 10,734 or 40 percent of the total were used for the manufacture of heavy and general worsted goods, 5,917 or 22 percent for intermediate worsteds, and 6,941 or 26 percent for woolen goods. The remaining nonautomatic looms were used for such relatively minor classifications as felts, velvets, and plushes. (See American Wool Handbook, New York, American Wool Handbook Co., 1938, pp. 513–515.) The index of production, as shown in table 21, represents the rate of loom activity. It thus refers to both woolen and worsted production, but can be taken to represent the general trend of worsted fabric output during this period.

[74] The Wool Situation (U. S. Department of Agriculture), December 1941. These figures were compiled by the National Association of Wool Manufacturers.

sales.[75] Nevertheless, the civilian supply situation became extremely tight, because of diversion of looms to Government orders and the shortage of wool tops. The usual seasonal increase in civilian demand during October and clothing manufacturers' desire to cover all of their spring requirements before prices rose further intensified this situation.

Although quoted prices remained stable between March and October certain indirect advances were made, as worsted mills canceled various types of concessions, which they had formerly offered to buyers.[76] In addition, many mills reduced their number of styles and colors,[77] while some orders were placed by salesmen only on a contingent basis, i. e., subject to confirmation by the company as to prices and terms involved.[78]

Between September and October 1940, quoted prices of uniform serge rose 9 percent to a level 29 percent above that of August 1939, and a further 9-percent increase in November reflected additional tightening of the market. To arrest this advance, Price Commissioner Henderson, in January 1941, called a meeting of wool manufacturers and requested that no further price increases be made.[79] Prices thereafter remained at the November level of $2.28 per yard—the highest since the early thirties—until the summer of 1941.

This stability was maintained in spite of further increases in demand. In December 1940, the daily rate of wool consumption was at the highest level since June 1918,[80] while by April 1941, unfilled orders for civilian men's wear fabrics were almost double the April figure of the preceding year.[81] Civilian demand in April was estimated to be approximately 15 percent higher than in 1940.[82]

Inability of fabric manufacturers to obtain enough wool tops to meet this increased demand led to extensive changes in production and marketing policies. A tendency to employ woolen rather than worsted fabrics in the manufacture of men's clothing became evident in December 1940 and grew more widespread early in 1941. Certain companies withdrew their worsted lines from the market for the 1941 fall season, but continued to take orders for woolen fabrics,[83] while others shifted the large part of production to quick-weaving cloths, abandoning such materials as gabardines and tropical worsteds.[84] The allotment of worsted goods on the basis of customers' previous purchases became a common practice in the market.[85]

[75] Journal of Commerce, January 23, 1941.
[76] Idem, June 8, 1940; June 28, 1940.
[77] New York Times, October 4, 1940.
[78] Daily News Record, October 12, 1940.
[79] Idem, January 6, 1941; January 8, 1941.
[80] Journal of Commerce, December 21, 1940.
[81] Daily News Record, May 1, 1941.
[82] Journal of Commerce, April 4, 1941.
[83] Daily News Record, January 29, 1941; January 30, 1941.
[84] New York Times, May 9, 1941.
[85] Daily News Record, February 10, 1941.

TABLE 21.—*WOOL AND WOOL PRODUCTS: Wholesale Prices, Production, Consumption, and Stocks,[1] August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; stocks, consumption, and production—U. S. Bureau of the Census (Quarterly Wool Stocks Reports, Raw Wool Consumption Reports); imports—U. S. Department of Agriculture, The Wool Situation]

Year and month	Raw wool				Wool tops—Indexes (August 1939=100)		Worsted yarn		Worsted fabrics	
	Price per pound [1]	Stocks [2]	Consumption [3]	Imports [4]	Wholesale price [5]	Production [6]	Wholesale price per pound [7]	Production index [8] (August 1939=100)	Uniform serge, price per yard [9]	Production index [10] (August 1939=100)
		Thousands of pounds								
1939										
August	$0.72	.....	54,208	4,610	100.0	100.0	$1.15	100.0	$1.63	100.0
September	.94	244,862	55,284	12,041	136.4	99.3	1.38	105.0	1.82	91.2
October	1.14	.....	74,215	9,380	140.1	115.2	1.53	135.9	1.88	104.9
November	1.08	.....	57,752	11,874	133.0	108.3	1.46	132.9	1.96	120.3
December	1.06	202,534	46,988	15,891	135.1	91.7	1.45	108.6	2.03	120.4
1940										
January	1.05	.....	45,136	24,266	128.0	94.5	1.42	91.8	2.03	109.1
February	.99	.....	40,916	20,791	121.9	87.6	1.34	86.8	2.01	93.5
March	.94	173,683	33,580	20,733	119.6	68.9	1.30	66.6	1.93	66.5
April	.89	.....	27,056	12,038	116.8	59.9	1.30	65.9	1.93	64.1
May	.89	.....	32,716	9,658	113.4	64.8	1.29	78.7	1.93	71.2
June	.90	262,942	40,040	10,566	118.3	94.5	1.25	85.9	1.93	82.9
July	.88	.....	61,050	9,818	113.7	98.6	1.29	93.9	1.93	91.8
August	.88	.....	53,524	9,864	115.4	100.7	1.26	110.1	1.93	99.8
September	.91	263,593	61,644	15,194	128.6	108.9	1.29	113.3	1.93	102.7
October	1.03	.....	84,615	25,598	145.3	125.5	1.40	134.3	2.10	110.9
November	1.11	.....	71,608	23,293	158.2	123.4	1.49	133.3	2.28	126.5
December	1.10	261,260	70,936	41,175	161.4	128.3	1.45	137.9	2.28	131.9
1941										
January	1.10	.....	79,755	51,809	162.3	132.4	1.45	134.2	2.28	129.4
February	1.09	.....	70,036	54,698	169.5	144.8	1.46	148.3	2.28	141.9
March	1.09	285,310	73,156	50,057	170.8	148.9	1.52	148.4	2.28	142.9
April	1.09	.....	85,505	72,306	165.9	148.3	1.55	151.2	2.28	144.3
May	1.08	.....	74,784	56,949	173.8	150.3	1.59	153.9	2.28	146.7
June	1.08	393,290	77,108	61,988	169.1	159.3	1.64	161.7	2.28	152.4
July	1.08	.....	87,770	52,468	166.1	144.1	1.68	151.1	2.31	142.4
August	1.08	.....	75,500	44,697	167.6	173.1	1.70	162.0	2.33	153.2
September	1.09	368,993	82,092	46,389	173.2	165.5	1.74	158.9	2.43	147.9
October	1.10	.....	102,685	(11)	171.8	169.7	1.76	163.7	2.43	148.5
November	1.11	.....	81,244	(11)	169.6	151.7	1.80	158.0	2.43	148.6
December	1.13	356,175	86,564	(11)	170.3	160.7	1.80	167.2	2.43	159.4

[1] Boston, domestic, territory, staple, fine and fine medium, scoured basis.
[2] Apparel class wool, grease basis, representing total of domestic wool held by dealers and manufacturers and foreign wool on hand and afloat. These figures obviously omit stocks held on farms, for which comparable statistics are not available.
[3] Total of weekly average figures for shorn and pulled wool on a grease basis.
[4] Apparel wool, formerly "combing and clothing;" weight as reported is for greasy, scoured and skin wool, added together.
[5] Futures, spot market.
[6] Worsted combs, thousands of active hours, weekly average.
[7] Worsted yarn, 2/32s, crossbred stock, white, mill. Bradford system weaving yarn.
[8] Spinning spindles, worsted, thousands of active hours, weekly average.
[9] Uniform serge suiting, style 6512–OD, medium grade, 12-ounce, 56–58-inch, mill.
[10] Looms, woolen and worsted, broad, thousands of active hours, weekly average.
[11] Confidential.

Certain quality changes were also made during 1941. In June it was reported that increasing amounts of rayon staple fiber were being used in combination with worsted yarn.[86] However, this tendency to use substitutes was restrained, to some extent, by the Wool Products Labeling Act which went into effect on July 15, 1941.[87] Under the terms of this act, all wool products were required to bear labels indicating their fiber content. Manufacturers were uncertain of the consumer

[86] American Wool and Cotton Reporter, June 19, 1941; Daily News Record, June 26, 1941.
[87] Daily News Record, May 26, 1941.

acceptance of rayon staple fiber when labeled as such and were thus hesitant to use it in large quantities.

These diverse trends in worsted manufacture were described by the Commercial Bulletin of July 12, 1941, as follows:

> Most mills continue to operate at capacity but have been unable to step up production to any extent because of the bottlenecks that still exist in tops and yarns. * * * Civilian users have been complaining of tardy deliveries, especially from worsted mills which have diverted a large portion of their equipment to defense orders. Indications are that mills will operate at the current high rate at least for the balance of the year. Sales of clothing at retail are running considerably above normal for this time of year and large numbers of stores are reported to have depleted their stocks of summer wear and are unable to obtain replacements.

In July the 8-month period of price stability in worsted fabrics was broken, as prices began once more to rise. By September the price was 49 percent above the pre-war level, where it remained through the end of the Defense Period. This advance reflected rising costs of raw materials, increased demand for worsted fabrics, and the effects of a general wage increase, granted during August, which carried average hourly earnings in the woolen and worsted goods industry to a level, in September, 30 percent above the pre-war figure.[88] Despite record production, which in August 1941 was 53 percent above its August 1939 level, the supply situation remained extremely tight during the fall of 1941. At the end of 1941, unfilled orders for civilian men's wear fabrics were 33 percent above those of the last quarter of 1940 and constituted 33 percent of total unfilled orders for wool woven cloth, while unfilled Government orders had increased 90 percent over the corresponding period in the previous year, and amounted to almost 53 percent of total unfilled orders.[89]

Raw Silk [90]

Fluctuating abruptly with changes in the international situation, the price of raw silk, which had advanced 39 percent since the beginning of 1939, rose about 50 percent between August and December, and then fell rapidly. By July 1940 silk sold at a price appreciably below its pre-war level of $2.64 per pound, though well above the January 1939 quotation of $1.90.[91] Except for a slight upswing in October, it remained at about the July 1940 level until March 1941. Prices then rose steadily until August 2, when a formal price schedule was issued setting a ceiling price of $3.08 per pound—17 percent above the August 1939 level—for the basic grade of raw silk, and relating maximum prices of the principal grades to that ceiling. On September 30, 1941, all types of raw silk known in the United States were made subject to the price schedule.

During the Defense Period, the international situation influenced the price of silk so strongly that the commodity was described in the

[88] Wages, according to the 1939 Census of Manufactures, comprised 17.6 percent of the value of product in the woolen and worsted goods industry.

[89] Bulletin of the National Association of Wool Manufacturers, Vol. LXXI, 1941, pp. 254–5.

[90] Although technically known as "raw," the silk which is imported has already undergone a certain amount of processing. The individual silk filaments which are unwound from cocoons are too fine to be used by themselves, and the reeling operation consists of winding from 3 to 12 strands together in one continuous thread. This work is done in factories in Japan, known as filatures. Skeins of 30,000 to 50,000 yards are produced and bound into "piculs" (bales of 132⅓ pounds each), the silk being exported in this form. Before it can be used in manufacture, this silk must be "thrown," a process by which several strands are twisted together to form either knitting or weaving yarn. Silk-yarn prices varied so directly with those of raw silk from August 1939 through July 1941 that they have not been accorded separate treatment.

[91] The price quoted is that for the basic grade, Japanese, white, Grade D, 78 percent seriplane, 13/15 denier.

Journal of Commerce (October 1, 1940) as a "political football." Raw-silk prices were determined largely by developments in the political relations between the United States and Japan, not only because almost the entire domestic supply of raw silk was imported from Japan,[92] but also owing to the Japanese Government's exercise of strict control over raw-silk production, prices, and quality. The standardization resulting from such Government supervision was for years the main reason for the superior quality of Japanese silk.

Raw silk is sold by importers either directly or through brokers to knitting and weaving mills, or to dealers who have it "thrown" (i. e., twisted) by commission "throwsters" before selling it to the mills. Prices are quoted in terms of discounts or premiums relative to a basic grade of silk [93] and trading is confined almost entirely to New York City, where both spot and futures markets are located.

The price of raw silk, which had been rising from the beginning of 1939, advanced rapidly upon the outbreak of war, continuing to increase through December of that year, when the standard grade of Japanese silk rose for a time above the $4 level, its highest point after April 1930. This represented an increase of almost 111 percent from January 1939, when the quotation was $1.90. The December price was 50 percent above that of August 1939.

This price advance reflected both the uncertainty concerning shipping conditions for all imported commodities which followed the outbreak of war, and the earlier disturbance in the New York silk market caused by the United States' denunciation on July 26, 1939, of its 1911 commercial treaty with Japan. According to diplomatic procedure, the treaty remained in effect for 6 months after it was denounced, but under the terms of the Tariff Act, once the treaty became ineffective the President was empowered to impose punitive duties up to 50 percent ad valorem on all goods shipped from Japan or brought to the United States in Japanese ships. Speculation was widespread as to the nature and extent of the action that the President might take, and a tendency developed to stock up in anticipation of the imposition of such duties. Stocks of raw silk in United States warehouses at the end of January 1940 were 136 percent above those of August 1939.

The rapid rise in silk prices resulted also from developments in Japan, especially the speculation which occurred in the Japanese silk market—the one Japanese commodity market where speculation was not prohibited by rigid Government regulation. In the late fall of 1939 the Japanese Government began to issue statements that speculation in silk would be curbed, but no official action was taken until the end of January 1940—after the peak of prices had passed—a fact which encouraged the belief held by some members of the silk

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[92] Raw silk is produced in Italy and was exported to the United States before June 1940, although in amounts which were very small in proportion to total silk imports. China also produces raw silk, but cannot be considered a major source of supply because of the lack of standardization and poorer quality of the silk and because of Japanese control over the silk industry in Central China during recent years.

[93] For a long time, raw silk was classified only by the "chops" or trade-marks of the various filatures in Japan. Quality varied so extensively over time, however, that this method was unsatisfactory, and in 1928 the National Raw Silk Exchange established certain objective tests as to evenness, cleanness, and neatness. As a result of this system, silk is graded, either in Japan or in New York, according to the same set of standards. Thus, the designation of the basic type of raw silk as "Japan, white, 13/15 denier, D–78 percent (crack)" means that the source of the silk is Japan, its color is white, the denier (the weight in grams of 9,000 meters of the skein) averages from 13 to 15, and the quality is 78 percent seriplane, which refers to the standard test described above. The letters and grades (such as "D" and "Crack") also refer to the quality of the silk, being almost synonymous with the seriplane rating.

industry in the United States that some official interests sanctioned the speculative price advance.[94]

In addition, although production of cocoons had increased over that of the previous year (stocks on December 1, 1939, were 150,438,000 pounds of cocoons as compared with 130,302,000 pounds on December 1, 1939), raw-silk production failed to increase proportionately.[95] At the same time, raw-silk consumption in Japan increased, partly as the result of limitations placed by the Japanese Government on the importation of other textile fibers. This action also was interpreted in some quarters as an attempt to boost silk prices, reflecting the Japanese Government's desire to maximize foreign exchange for the prosecution of the war in China.[96]

In February 1940 raw-silk prices dropped sharply, declining 17 percent from the January figure to a level only 16 percent above that of August 1939. The initial cause of the decline and ensuing weakness in raw-silk prices appeared to be speculative liquidation in Japan, accompanied by the failure of the United States Government to impose import duties after the expiration of the 1911 trade treaty in January 1940. The Japanese Government on January 20 put into effect a distribution plan under the provisions of which the Government was to allot raw silk to domestic mills, in order to curb speculation and to release more silk for export.[97]

During the last half of 1940 the price of raw silk fluctuated narrowly at levels predominantly below the price of August 1939, except for a brief interval in October. In January 1941 the price was still 3 percent below that of August 1939.

In order to bolster silk prices, the Japanese Government in July 1940 began to make large purchases of raw silk. During the same month, the Silk Reelers Association in Japan voted a 25-percent reduction in reeling operations effective August 15, and late in August a decree was issued requiring use of at least 20-percent raw silk in all Japanese manufacture of rayon, cotton, and wool fabrics for domestic use after October 1.[98]

During the summer of 1940, silk consumption in the United States began to increase. Mills were taking advantage of the low price level to stock up on silk, and demand was stimulated by the defense program. Consumer demand for silk products, particularly hosiery, increased and military requirements were raised substantially. Large amounts of silk were essential for the manufacture of powder bags for heavy artillery and no satisfactory substitute was available. Silk was also needed for parachutes and used in preference to other fibers for certain parts of military uniforms. Beginning in July imports of silk rose markedly, and stocks in United States warehouses, although declining from the January peak, remained at a relatively high level, their strong position preventing a price advance as demand increased.

On September 28, 1940, the Japan-Italy-Germany 10-year military pact was signed, and the raw-silk market was in a state of upheaval for a month afterward. Although the October price was only 2 per-

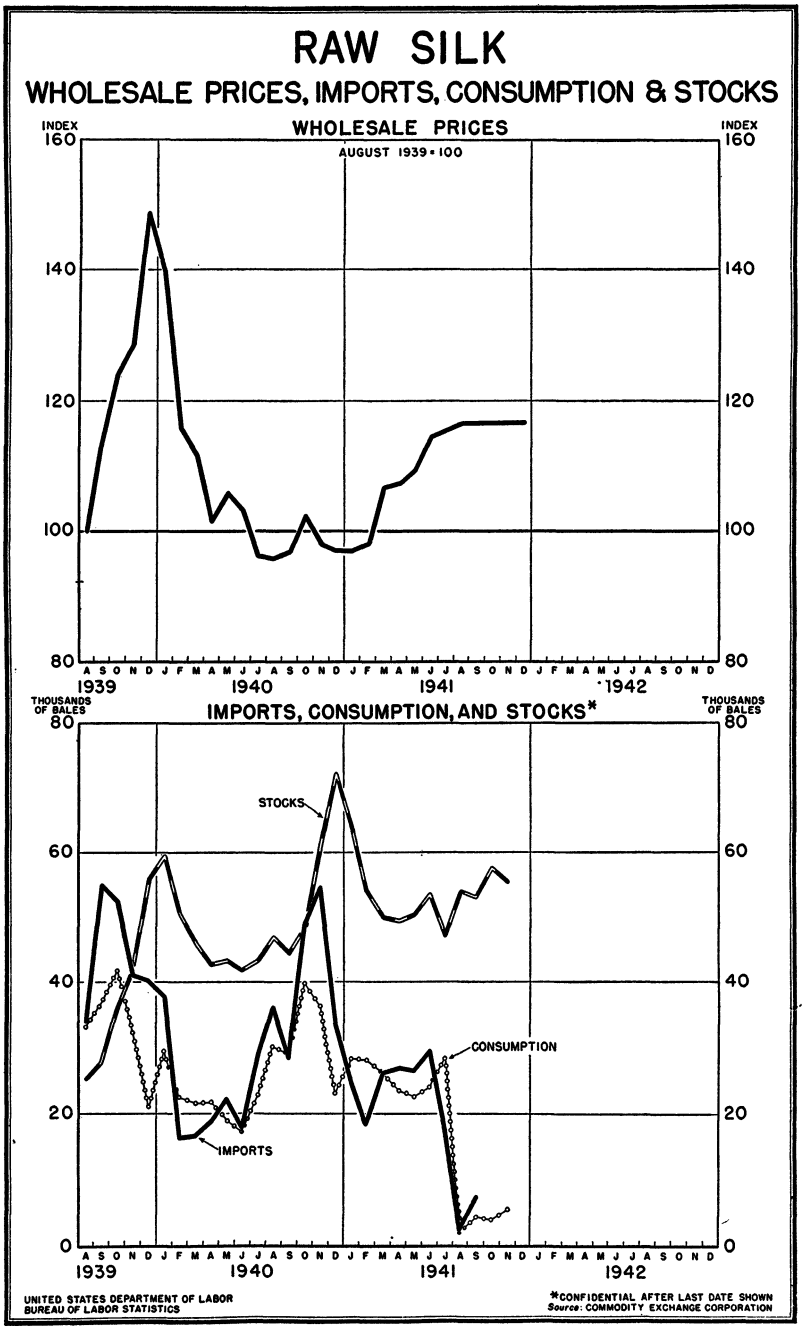
[94] Journal of Commerce, issues of October 20, December 14 and 28, 1939.

[95] A difference of opinion existed as to the basic reason for this situation. Japanese representatives stated that although the filatures were amply supplied with cocoons, they were unable to reel them because of a lack of electricity and also because the necessary skilled labor force was being withdrawn to serve in the army. This explanation was disputed by some Americans who pointed out that silk weaving in Japan, which required an equal amount of fuel and equally skilled labor, had not declined. (Cf. Journal of Commerce, December 27, 1939; January 4, 1940).

[96] Journal of Commerce, November 17, December 13, 20, and 28, 1939: December 15, 1940.

[97] Idem, February 1, 1940.

[98] Idem, July 8 and 20, and August 27, 1940.



cent above the September quotation, rumors were current to the effect that imports might be drastically curtailed as the result of political tension between the United States and Japan. Raw Silk Importers, Inc.—a trade association in New York City—strongly advised its members to insert the following clause in their contracts:

> In the event that raw-silk shipments from the country of origin of the silk herein described shall be interrupted or prevented by war, or domestic or foreign embargo, or if shipment or delivery is prevented or delayed by any similar or dissimilar cause beyond seller's control, the seller may cancel the contract upon refunding any amount prepaid by the buyer thereunder.[99]

Both imports and consumption rose sharply during October, as dealers sought to stock up on raw silk before the trade might be interrupted by political developments. By October 10, 1940, it was reported that virtually all stocks of desirable grades of silk in United States warehouses and en route from Japan had been bought up and some importers were refusing to quote prices beyond November delivery.[1] By December 1940, stocks in United States warehouses had advanced to their peak for the Defense Period, 188 percent above the August 1939 level. However, when it became apparent in November that diplomatic relations were not then to be broken off, silk prices declined once more to below their pre-war levels where they remained through February 1941.

In February 1941, silk prices began a steady advance which continued through the spring and summer as the international situation became increasingly tense. In March, prices rose almost 9 percent, following the signing of the Russo-Japanese 5-year neutrality pact. Rumors that the Japanese Government planned to increase control over silk production were a primary cause of the price advance, and in April the Silk Control Commission announced that 1941–42 silk production would be cut by 20 percent.[2]

During June and July silk prices increased further as a result of the declaration of war between Germany and Russia, the resignation of the Japanese cabinet, and the Hull-Nomura conferences. From July 21 through July 25, when Japanese invasion of Indo-China was threatened, the price of the basic grade of raw silk advanced from $3.08 to $3.57.

Although the Office of Price Administration had begun to investigate the rise in silk prices in June,[3] no action was taken until the crisis late in July. On July 25, the date of issuance of the State Department order freezing Japanese funds in the United States, raw-silk futures prices rose the full limit of 25 cents a pound allowed by the Commodity Exchange.[4] On July 27, Price Administrator Henderson asked the suspension of trading in silk futures on the Commodity Exchange and at the same time announced that a price ceiling would shortly be imposed.[5] A series of conferences with trade representatives followed, and on August 2 the price schedule was issued, setting a ceiling price of $3.08 per pound (the price prevailing on July 21, 1941) for the basic grade of raw silk, and relating maximum prices of

[99] Journal of Commerce, October 15, 1940.
[1] Idem, October 11, 1940.
[2] Wall Street Journal, April 29, 1941. (The crop-year of silk begins in June.)
[3] Idem, June 21, 1941.
[4] The limit on permissible daily price fluctuations in the raw-silk futures market was raised from 15 to 25 cents per pound effective January 3, 1940, by the board of governors of Commodity Exchange, Inc., primarily to bring the New York and Japanese futures markets into line. (Journal of Commerce, January 3, 1940).
[5] Release No. PM 801, July 27, 1941.

other important grades to this ceiling.[6] On September 30, 1941, the schedule was extended to include all types of raw silk known in the United States.[7]

Because of the importance of silk to the defense program, the Office of Production Management, through a series of measures beginning on July 26, 1941, assumed control over all stocks of silk in the United States, except bales which had been opened before August 2. Consequently, the main effect of the ceiling prices set by the Office of Price Administration was their stabilization of prices of silk which had been released by the Office of Production Management for the manufacture of military goods or for purchase by the Defense Supplies Corporation.

TABLE 22.—*RAW SILK: Wholesale Price, Imports, Consumption, and Stocks, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; imports, consumption, and stocks—U. S. Department of Commerce, Survey of Current Business]

Year and month	Wholesale price per pound[1]	Imports (thousands of pounds)[2]	Consumption (bales)[3]	Stocks, end of month, U. S. warehouse (bales)[4]
1939				
August	$2.641	4,495	33,095	25,060
September	2.993	7,262	36,869	27,760
October	3.271	6,936	41,858	35,935
November	3.394	5,423	32,241	41,927
December	3.973	5,322	21,128	55,610
1940				
January	3.687	4,972	29,506	59,225
February	3.061	2,175	22,485	50,306
March	2.951	2,213	21,685	45,887
April	2.681	2,494	21,740	42,698
May	2.794	2,925	18,997	43,285
June	2.724	2,356	17,307	41,822
July	2.540	3,827	22,766	43,211
August	2.529	4,761	30,189	46,898
September	2.561	3,739	28,828	44,454
October	2.698	6,490	39,877	48,297
November	2.585	7,219	36,374	60,330
December	2.562	4,429	23,113	72,248
1941				
January	2.560	3,263	28,425	63,433
February	2.589	2,430	28,111	54,106
March	2.816	3,453	25,828	49,904
April	2.834	3,551	23,538	49,373
May	2.886	3,509	22,440	50,341
June	3.019	3,895	24,251	53,436
July	3.049	2,347	28,528	47,208
August	3.080	332	2,069	53,988
September	3.080	1,003	4,685	53,008
October	3.080	(5)	4,160	57,508
November	3.080	(5)	5,676	55,486
December	3.080	(5)	(5)	(5)

[1] Basic grade of silk: Japanese, white, grade D, 78 percent seriplane, 13/15 denier.
[2] Unmanufactured silk, comprising raw silk, cocoons and waste.
[3] Compiled by Commodity Exchange, Inc. and representing deliveries to mills, obtained by adding to or subtracting from imports during a given month the difference in the United States stock position at the beginning and at the end of the month. The figure thereby obtained includes re-exports.
[4] Compiled by Commodity Exchange, Inc., reported by principal warehouses in New York and Hoboken, and include Commodity Exchange certified stocks and stocks at terminals.
[5] Confidential.

Rayon

The contrast between the price movements of rayon fibers and yarns and those of the natural fibers during the Defense Period can be

[6] Price Schedule No. 14, Release No. PM 865, August 3, 1941.
[7] Release No. PM 1279, October 1, 1941.

accounted for primarily by the fact that production of rayon is concentrated in approximately a dozen corporations. Between August 1939 and December 1941, prices of the principal filament yarns rose from 4 to 8 percent and prices of staple fibers either declined or remained unchanged. In markets for rayon grey goods, however, prices rose sharply—from 25 to 30 percent.

Rayon is a synthetic fiber manufactured from a cellulose base by means of three chemical processes—viscose, acetate, and cuprammonium, named in order of the quantity produced.[8] The two main classifications of rayon are filament yarn and staple fiber.

RAYON FILAMENT YARN

Production of the two principal types of filament yarn, acetate and viscose, is concentrated in a relatively small number of large companies, which distribute most of the yarn directly to knitting and weaving mills. This concentration of production and marketing is accompanied by a marked stability of prices, manufacturers issuing list prices which remain in effect for long periods of time.[9] Rayon yarn, in contrast to other raw materials used in textile manufacture, has no futures market.

In the early fall of 1939, prices for the most popular size of acetate and viscose yarn rose slightly above their respective pre-war levels of 54 and 51 cents per pound.[10] Acetate yarn fell back to its August level in December and prices of both types then remained stable until June 1941, when they were indirectly raised by a revision of credit terms. In September and October 1941, rayon-yarn prices rose until they were pegged at their October 5 levels—56 cents per pound for acetate yarn and 55 cents for viscose—by an informal ceiling issued by the Office of Price Administration.

Between August and October 1939, prices of acetate and viscose yarns advanced almost 4 percent, reflecting increases in the prices of essential raw materials (wood pulp, cotton linters, and several important chemicals). In addition, there appeared the beginning of a pronounced shortage of rayon yarn, partly because of widespread substitution of rayon for silk, prices of which had risen very sharply.[11] At the end of the year, however, acetate yarn dropped back to its pre-war level.

Prices of both types of yarn remained at their December 1939 levels until June 1941. This stability of prices was maintained in spite of rising demand owing to greater defense expenditures, the increase in the price of silk, and uncertainty concerning future silk supplies which led to increased use of rayon in knitting (e. g., for welts and feet of silk hosiery),[12] and in weaving, where it had already virtually replaced silk. By the end of December 1940, rayon yarn stocks held by producers (never substantial in quantity) were 67 percent below their pre-war level, despite a 33-percent increase in production during the same period.[13] Civilian purchases were almost

[8] A fourth process, nitro-cellulose, is no longer used in the United States.
[9] Prior to June 16, 1941, a credit discount, usually of 2 percent for 30 days, was allowed.
[10] Acetate yarn, first quality, natural, cones, 150 denier; viscose yarn, first quality, bleached, skeins, 150 denier.
[11] Journal of Commerce, October 21, 1939.
[12] Idem, October 16, 1940.
[13] Rayon Organon, Statistical Supplement, January 1942.

entirely responsible for the rise in demand, Army requirements during 1940 being relatively small in quantity and of an experimental nature.[14]

Demand for rayon yarn, stimulated by heavy consumer purchases of apparel, continued to advance during the first 5 months of 1941, when domestic consumption of filament yarn was 17 percent above that for the same period in 1940.[15] A tendency toward substitution of rayon for silk in many types of apparel and housefurnishings continued, particularly in view of the uncertain supply and price situation prevailing for silk.[16] By April, reports of an impending price rise, owing to increased demand and to fear of shortages of certain essential chemicals and other raw materials, began to appear in the market.[17]

The first advance in the cost of rayon yarn to buyers, which took place in June 1941, consisted of a revision in credit terms rather than a direct increase in list prices. All filament yarn, as of June 16, was to be sold on a strictly net basis instead of on the former basis of 2 percent for 30 days.[18]

Nevertheless, demand continued to exceed supplies. By June, customers who had for some time been receiving yarn on an allotment system were complaining that deliveries amounted to only 40 or 50 percent of their requirements.[19] The supply difficulties of weavers and knitters were intensified in late July and early August as a result of the silk crisis. In order to temper the effects of the freezing of silk stocks upon the hosiery industry, the Government began to allocate rayon yarn to former users of silk. Beginning in August a series of orders was issued, of which the last one during the Defense Period (effective October 1) provided for the diversion of 9 percent of the production of viscose and cuprammonium yarn and 5 percent of acetate-yarn production to former manufacturers of silk products, both hosiery and nonhosiery.[20]

Rayon-yarn manufacturers objected to the allocation program on several grounds: the industry was virtually sold out at the time; manufacturers contended that since the silk-hoisery industry had for years branded rayon as an inferior fiber, it was unfair to force yarn producers to allot their already scarce supplies in this fashion; in addition, they were concerned about consumer reaction to hosiery composed in part of types of rayon yarns not intended to be used for this purpose.[21] However, as a result of the allocation order, the amount of rayon yarn used by the hosiery industry increased from 16.4 million pounds in 1940 to 26.3 million pounds in 1941.[22] During the Defense Period, the prices of fine denier rayon yarns of particular importance to hosiery manufacturers rose more sharply than those of the coarser count yarns. For example, quotations for viscose yarns advanced as much as 27 percent for the 50-denier size and 15 percent for the 75-denier size.[23]

[14] Rayon Organon, January 1941, p. 11.
[15] Journal of Commerce, June 6, 1941.
[16] Idem, February 24, 1941.
[17] Daily News Record, April 9, 1941.
[18] Idem, June 14, 1941.
[19] Journal of Commerce, June 16, 1941.
[20] OPM Release No. P M 1232, September 25, 1941.
[21] Daily News Record, August 4 and 6, 1941.
[22] Rayon Organon, Statistical Supplement, January 22, 1943 (p. 18). In addition, the demand for rayon yarn was potentially increased by two additional developments after August 1941. With future silk supplies virtually cut off, the armed forces were compelled to consider the extensive use of rayon in place of silk. Also, as part of the Good Neighbor policy, the Government announced that the United States, together with Great Britain, would take the place of Japan as the source of supply of rayon yarn for Central and South America.
[23] Rayon Organon, July 1941 (p. 110) and November 1941 (p. 164).

Two other upward pressures influenced rayon prices during the summer and fall of 1941. Wages had risen substantially after the outbreak of the war and, in addition, the industry was faced with a serious materials problem, especially with regard to cotton linters, one of the essential raw materials for the manufacture of acetate rayon yarn.

A general revision in the prices of both viscose and acetate was made in September 1941, effective immediately for spot sales and on November 1 for contract sales. Since the market was virtually sold out, relatively few spot sales were made at these prices in September, and reported spot-market prices (see table 24) do not fully indicate the extent of the price advance. The revised price list of the largest rayon-producing company showed an increase from 53 to 55 cents per pound for 150 denier, 24–40 filament viscose yarn, and from 54 to 55 cents per pound for 150 denier, 40–60 filament acetate yarn.[24] The Office of Price Administration, which had established ceiling prices for rayon grey goods in August, announced that these increases occurred with its full knowledge and consent. The agency objected, however, to larger increases instituted by several other companies, and these advances subsequently were withdrawn during the month.[25] Administrator Henderson stated:

> The near-capacity level of operations enjoyed for many months by yarn mills, together with the current price increase, is expected to enable producers to continue to supply the requirements of the weaving and hosiery trades without any further advances in the price of yarns. Should prices rise further, we are prepared to take immediate action.[26]

To facilitate maintenance of stable prices for rayon as well as for a number of other products, the Office of Price Administration on September 25, 1941, issued a ceiling price for bulk sales of natural and synthetic acetic acid, extensively used in rayon-yarn manufacture.

Early in October, announcement of substantial price increases by a large producer of rayon yarn led the Office of Price Administration to threaten formal ceiling action, but upon the company's withdrawal of its new prices, Price Administrator Henderson stated that no formal ceiling would be imposed. At the same time, the Office of Price Administration made public a suggested list of approved maximum prices for all types of rayon yarn, corresponding generally to those prevailing on October 5, 1941, and prices remained at these levels through November.[27]

STAPLE FIBER

Prices of rayon staple fiber were even more stable than those of rayon filament yarn during the Defense Period.[28] Between August 1939 and January 1940, acetate staple fiber dropped 7 percent below its pre-war level of 46 cents per pound, remaining unchanged thereafter, while the price of viscose staple fiber remained constant at 25

[24] Journal of Commerce, September 15, 1941.
[25] Cf. Daily News Record, September 18–22, 1941.
[26] OPA Release No. PM 1174, September 17, 1941.
[27] OPA Release No. PM 1459, October 28, 1941.
[28] Rayon staple fiber is of the same chemical composition as rayon filament yarn, but differs fundamentally in physical structure and manufacturing process. Whereas the latter consists of long continuous strands of filaments twisted together, staple fiber is produced by cutting filament rayon into short uniform lengths which are subsequently spun into yarns. Since this spinning process may be done on either the cotton or the woolen system, rayon staple fiber is used not only for the manufacture of spun rayon woven goods, but also in combination with other fibers.

cents per pound during the entire period, despite marked changes in both demand and sources of supply.[29] (See table 24.)

Until 1940, roughly half of the rayon staple fiber annually available in the United States was domestically produced, the other half imported.[30] In 1940, while imports from Japan increased, total imports decreased as shipments from Italy, Germany, and the United Kingdom declined. Expansion of domestic plants, however, brought production in the United States to a level of approximately 81 million pounds,[31] almost compensating for the decline in imports.

Domestic production in 1941 was further expanded to 122 million pounds,[32] while total imports from January through November totaled only 11.6 million pounds, a large part of this total representing withdrawals of stocks from United States bonded warehouses. Imports from Japan were virtually cut off beginning in August, those from Italy through November totaled less than 17 percent of the small 1940 figure, while the United Kingdom halted all exports of staple fiber in July.[33] Before that date, substantial quantities of shipments from the United Kingdom were reported to have been lost at sea.[34]

The demand for rayon staple fiber mounted rapidly because of increased consumer acceptance of spun rayon fabrics and especially because of the greater use of rayon staple fiber in combination with other fibers. Rising prices and shortages of certain types of cotton yarn, of wool (both apparel and carpet) and flax, led to the widespread use of varying proportions of rayon staple fiber in the manufacture of apparel, blankets, carpets, table linen, towels, draperies, and slip covers.[35] Consequently, in spite of the expansion of production during the Defense Period, a pronounced shortage of rayon staple fiber existed throughout 1941.[36]

RAYON GREY GOODS

During the Defense Period, the reactions of the rayon-grey-goods market to the war and to the price-control activities of the Government were similar to those of the cotton grey-goods market. Prices of three important types of grey goods—viscose twill, pigment taffeta, and acetate warp crepe—rose 15, 14 and 11 percent, respectively, between August and October 1939, then eased until the summer of 1940, when quotations for the first two constructions were slightly below their pre-war levels.[37] In the fall of 1940, grey-goods prices began a sustained advance which carried them during the summer of

[29] Prices are for staple, acetate, 5 denier; and staple, viscose, 1½ denier.

[30] Between 1930 and 1939 imports rose from 518,000 to 47,403,000 pounds, while domestic production mounted from 350,000 to 51,314,000 pounds. (Rayon Organon, Statistical Supplement, January 2, 1942, p. 16.)

[31] Rayon Organon, June 1941, p. 91.

[32] Idem, Statistical Supplement, January 1942, p. 16.

[33] Journal of Commerce, July 24, 1941.

[34] Idem, June 4, 1941.

[35] Although the armed forces made no substantial purchases of staple fiber, the Army was reported to be conducting experiments on its use for uniform fabrics, shirting materials, and blankets. (Rayon Organon, June 1941, p. 97.)

[36] Journal of Commerce, November 19, 1941.

[37] Viscose twill, 38-inch, 112 by 68; pigment taffeta, 40-inch, 92 by 68, 100 denier warp, 150 denier filling; acetate warp crepe, 45-inch, 135 by 64, 100 denier, 2 by 2. These three constructions, in the order listed; are used for linings, underwear, and dress goods.

Accurate price data for rayon grey goods are difficult to obtain since the construction of rayon fabrics is subject to frequent changes as a result of the development of new fashions. Also, no uniform method of price reporting exists within the industry, with the result that prices reported in the trade press, such as those used in the present study, may represent contract or spot transactions. However, the three selected series, representing leading types of grey goods, indicate the general trend of rayon grey-goods prices during the Defense Period.

1941 to levels varying from 30 to 60 percent above their pre-war quotations. On August 24, 1941, the Office of Price Administration established ceiling prices for leading types of grey goods at levels on the average 10 percent below current market rates.

The price advance following the outbreak of war in Europe was greatest for acetate warp crepe, which rose 16 percent—from 22.0 to 25.5 cents per yard—between August and November 1939, and remained at its November level through the end of the year. Viscose twill and pigment taffeta rose 15 and 14 percent, respectively, from August to October 1939 and thereafter moved steadily downward except for a slight interruption in March 1940. By June, viscose twill had reached a level of 15.6 cents per yard—almost 3 percent below the August 1939 quotation—where it remained until October. The decline was smaller for pigment taffeta, but in August 1940 it was selling for 14.38 cents per yard—slightly below its pre-war level. During this period, the price of acetate warp crepe fell more slowly than those of the other two constructions, and its lowest level—22.25 cents per yard, which prevailed from June to October 1940—was still slightly above the August 1939 quotation.

In the fall of 1940, prices of rayon grey goods began an advance which continued at a sharply accelerated pace during the spring and summer of 1941. Primarily responsible for this advance was the fact that supplies were inadequate to meet demand, which rose steadily owing to increased consumer purchasing power. Shortages developed in the basic materials required for rayon grey-goods production—rayon yarn and staple fiber—and by June 1941, converters were complaining that the early opening of fall lines in the dress industry was being hindered by slow deliveries of rayon grey goods.[38]

By May 1941, prices of viscose twill, pigment taffeta and acetate warp crepe were, respectively, 22, 10, and 14 percent above their pre-war levels. Since only minor increases had occurred in yarn and staple fiber prices, the advance in grey goods was attributed in large part to higher labor costs.[39] Wages had moved upward in the silk and rayon industries since the outbreak of the war, average hourly earnings having risen by June to a point 15.6 percent above the August 1939 level.[40] As a cost factor, however, wages comprised only 20.5 percent of the value of product in the rayon woven-goods industry, according to the 1939 Census of Manufactures.

At the end of June 1941, when a price ceiling was placed on cotton grey goods, the Government price officials warned rayon grey-goods producers that their prices also were under close observation. Like other textile markets, the rayon grey-goods market met announcement of impending price control by a sharp curtailment in trading.[41] Prices continued to advance, however, and a conference was called on July 16 between Government officials and rayon weavers to lay the ground for issuance of a formal ceiling. The producers agreed, temporarily, not to advance existing prices of certain standard constructions. Thereafter, mill offerings again declined as producers awaited the setting of a definite ceiling level, and sales dropped to a minimum through the first 3 weeks of August. What grey goods were sold during this period were largely "second-hand" sales (e. g.,

[38] New York Times, June 19, 1941.
[39] Cf. Daily News Record, May 9, 1941; Journal of Commerce, June 24, 1941.
[40] Hours and Earnings in the United States. (U. S. Bureau of Labor Statistics Bulletin No. 697.)
[41] Daily News Record, July 6, 1941.

sales of grey goods by converters). Since this type of sale had not been covered by the July 16 agreement, grey goods sold by converters commanded premium prices. For example, spun rayons, such as one-way flake and 10-percent acetate blend, were resold at prices 27 and 57 percent, respectively, above the mills' voluntary ceilings.[42] Prices for types of fabrics not included in the original agreement also rose sharply.

Because of the "dried-up" condition of the market and the pressure on rayon supplies resulting from the raw-silk shortage, Price Administrator Henderson announced on August 12 that a price ceiling would shortly be established for rayon grey goods. The schedule, issued on August 24, set maximum prices for leading constructions at levels averaging about 10 percent below existing quotations, and covered second-hand as well as original sales. Manufacturers of constructions not included in the price schedule were required to report to the Government all sales in excess of 25,000 yards per month and were expected to keep prices of these fabrics in line with the ceiling prices. Manufacturers were required to include in their sales contracts a full description of the fabric sold, whether or not it was covered by the price ceiling.[43]

The schedule set maximum prices of 20 and 18 cents per yard, respectively, for viscose twill and pigment taffeta of the constructions previously referred to. Although these ceiling prices were 11 and 22 percent, respectively, below the August 1941 peaks of 22.38 cents per yard for viscose twill and 23 cents per yard for pigment taffeta, they were still 25 percent above the pre-war level for both constructions. The ceiling price established for acetate warp crepe—28.5 cents per yard—was almost 30 percent above the August 1939 quotation.

Demand for grey goods continued to exceed available supplies during the fall of 1941. In mid-November, a number of mills were reported to be refusing December business, asserting that they would still be delivering November orders during the remainder of the year, and by December most mills had adopted an allotment system.[44]

[42] New York Times, August 12, 1941.

[43] This provision, however, was amended on October 4, the reason given being that it constituted too great a hardship upon an industry in which fashion plays so large a part. Rather than insisting upon the inclusion of complete details of fabric constructions in sales contracts, the Government merely required that the producers keep records of this nature and that sales contracts contain a style number for each construction referring to the manufacturers' record. Detailed reports were still to be filed with the Office of Price Administration.

[44] Journal of Commerce, November 17 and December 12, 1941.

TABLE 23.—*RAYON: Production, Consumption, Stocks, and Imports, by Kind, August 1939–December 1941*

[Source: Rayon Organon, Special Supplement (Vol. XIV, No. 2), January 22, 1943]

Year and month	Filament yarn (in millions of pounds)			Staple fiber (in millions of pounds)			
	Production [1] (quarterly)	Consumption [2]	Stocks [3]	Production [1] (quarterly)	Consumption [4]	Stocks [3]	Imports [5]
1939							
August		32.5	19.3		7.6	3.0	3.4
September	78.0	33.0	13.1	13.3	9.1	1.2	3.1
October		34.7	9.4		9.1	1.0	4.0
November		33.3	7.7		11.0	1.0	5.7
December	93.6	32.0	6.4	15.6	11.2	2.0	6.7
1940							
January		31.8	7.0		11.0	2.7	5.1
February		29.8	8.3		7.4	4.9	2.6
March	95.8	29.8	10.4	20.4	4.2	8.8	1.3
April		31.1	11.7		4.9	12.6	2.1
May		32.3	12.5		5.6	14.2	.6
June	97.5	31.4	12.8	19.1	6.1	14.5	.7
July		32.1	11.1		6.6	14.1	.4
August		34.0	9.9		7.3	13.5	.4
September	93.0	30.9	8.3	18.4	9.0	11.1	.2
October		36.7	6.9		10.2	8.7	.4
November		34.8	6.7		10.4	7.4	1.6
December	103.7	34.0	6.3	23.2	10.6	7.5	2.5
1941							
January		35.0	8.9		9.0	8.4	1.7
February		31.6	10.0		8.1	9.8	1.8
March	106.2	35.4	10.2	25.0	11.3	9.8	2.3
April		38.7	7.4		12.0	7.5	1.6
May		40.2	5.8		11.5	6.0	1.3
June	112.0	38.3	4.6	26.6	12.4	4.9	1.5
July		39.4	3.6		12.6	3.6	.6
August		37.3	4.2		12.2	3.4	.2
September	114.2	37.0	4.9	34.1	13.0	2.7	.7
October		41.7	5.4		13.2	1.7	[6]
November		38.5	4.5		11.6	1.8	[6]
December	118.8	39.3	3.8	36.3	12.4	1.8	[6]

[1] Total all processes.
[2] Compiled by the Textile Economics Bureau. Data for August 1939 through September 1941 represent domestic deliveries of rayon yarn (all processes, acetate data partially estimated) to customers by domestic producers plus yarn imports for consumption; October through December 1941 data represent deliveries of yarn by domestic producers only.
[3] Compiled by the Textile Economics Bureau and representing stocks of finished rayon yarn and staple fiber held by domestic producers at the end of each month. Stocks of acetate yarn and staple fiber are partially estimated.
[4] Compiled by the Textile Economics Bureau. Data cover all processes (acetate partially estimated) and are compiled on the same basis as those for rayon yarn.
[5] Includes also imports of sliver, tops and roving.
[6] Not available for publication.

TABLE 24.—*RAYON: Wholesale Prices, by Kind, August 1939–December 1941*

[Sources: Grey goods prices—Daily News Record; filament yarn and staple fiber prices—U. S. Bureau of Labor Statistics]

Date	Filament yarn per pound [1]		Staple fiber per pound [2]		Grey goods per yard		
	Acetate	Viscose	Acetate	Viscose	Viscose twill [3]	Pigment taffeta [4]	Acetate warp crepe [5]
1939	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
August	54.0	51.0	46.0	25.0	16.0	14.4	22.0
September	55.0	52.0	46.0	25.0	17.4	16.0	24.3
October	56.0	53.0	46.0	25.0	18.4	16.5	24.5
November	56.0	53.0	46.0	25.0	18.0	16.0	25.5
December	54.0	53.0	46.0	25.0	17.8	15.8	25.5
1940							
January	54.0	53.0	43.0	25.0	17.4	16.1	25.3
February	54.0	53.0	43.0	25.0	17.0	15.5	25.3
March	54.0	53.0	43.0	25.0	16.3	16.5	24.9
April	54.0	53.0	43.0	25.0	15.9	15.3	23.3
May	54.0	53.0	43.0	25.0	15.9	15.1	22.5
June	54.0	53.0	43.0	25.0	15.6	15.0	22.3
July	54.0	53.0	43.0	25.0	15.6	14.8	22.3
August	54.0	53.0	43.0	25.0	15.6	14.4	22.3
September	54.0	53.0	43.0	25.0	15.6	14.6	22.3
October	54.0	53.0	43.0	25.0	15.8	14.4	22.8
November	54.0	53.0	43.0	25.0	16.5	14.8	23.0
December	54.0	53.0	43.0	25.0	16.9	14.7	23.4
1941							
January	54.0	53.0	43.0	25.0	17.3	14.8	23.8
February	54.0	53.0	43.0	25.0	17.0	14.8	23.9
March	54.0	53.0	43.0	25.0	17.3	15.5	23.9
April	54.0	53.0	43.0	25.0	18.5	15.9	24.5
May	54.0	53.0	43.0	25.0	19.5	15.9	25.0
June	54.0	53.0	43.0	25.0	[6]	17.0	26.0
July	54.0	53.0	43.0	25.0	[6]	18.5	[6]
August	54.0	53.0	43.0	25.0	22.4	23.0	[6]
September	54.6	54.2	43.0	25.0	20.0	18.0	28.5
October	56.0	55.0	43.0	25.0	20.0	18.0	28.5
November	56.0	55.0	43.0	25.0	20.0	18.0	28.5
December	56.0	55.0	43.0	25.0	20.0	18.0	28.5

[1] Yarn, first quality, minimum filament, per pound, f. o. b. producer's plant, minimum freight allowed to destination. Acetate, natural, cones, 150 denier. Viscose, bleached, skeins, 150 denier.
[2] Staple, in bales, per pound, f. o. b. producer's plant, minimum freight allowed to destination. Acetate, 5 denier. Viscose, 1½ denier.
[3] Viscose twill, 38-inch, 112 by 68.
[4] Pigment taffeta, 40½-inch, 92 by 68, 100 denier warp, 150 denier filling.
[5] Acetate warp crepe, 45-inch, 135 by 64, 100 denier, 2 by 2.
[6] No quotation.

Clothing

Substantial price increases in textile fibers during the Defense Period were reflected in varying degrees in the apparel markets. Nearly all prices rose, particularly in the last 6 months of 1941, some very sharply. During the early part of the Defense Period, however, much of the adjustment to rising costs took the form of altering quality while leaving the price to the consumer in established "price lines" practically unchanged.

In the cotton-garment field, heavy military orders severely strained loom capacity for certain fabric constructions, especially work-clothing materials, and prices of civilian apparel made from such fabrics rose sharply. Conversion of looms to the weaving of these much-needed fabrics in turn led to a tightening of supplies of other constructions and a consequent rise in price. A bottleneck developed in the combing of wool used in the manufacture of worsted fabrics required for military orders and prices of worsteds rose rapidly. Consequently, manufacturers increased the use of soft woolens, as

well as blended fabrics, for civilian goods in order to retard the price advance which it was feared would curtail civilian demand.

Although little of the price advance in the primary textile markets was reflected in the retail prices of apparel other than work clothing, prior to the summer of 1941, substantial increases developed in the latter half of that year. The loss of silk to the civilian market led to a consumer rush for available supplies of women's hose, and prices rose rapidly. Higher consumer incomes from defense industries, the draft deferment of men above 28 years of age, and fears of shortages, especially of wool, led to increased demand for all types of clothing. Sales of men's and women's apparel averaged 13 percent greater during the first 11 months of 1941 than in the same period of the year preceding;[45] increases were particularly great for women's clothing. As the demand for apparel continued to rise, retailers increased their inventories considerably in anticipation of shortages. The value of stocks of women's and girls' apparel held by department stores in October 1941 was estimated to be 32 percent higher than in October 1940, and for men's and boys' wear, 29 percent higher. To some extent these high figures for sales and inventories reflected price increases.[45] At the same time there were probably some increases in labor costs, although detailed unit cost data are not available for these industries; between August 1939 and December 1941 hourly earnings rose 14 and 27 percent, respectively, in the men's clothing and men's furnishing industries.

COTTON APPAREL

The rise in cotton-yarn and grey-goods prices, which occurred immediately after the outbreak of war in 1939, was of such a temporary character that it was not generally reflected in the retail prices of cotton apparel. Throughout 1940, retail prices for cotton apparel remained close to their pre-war levels and even work shirts and overalls, competing with Army demands for denim and other types of work-clothing fabrics, had risen only approximately 4 percent by December 1940. Early in 1941, however, the steady rise in raw-cotton, cotton-yarn, and grey-goods prices, which had started in mid-1940, began to be reflected in apparel prices at the retail level. In order to alleviate the severe disturbance in civilian markets, occasioned by large military orders requiring short delivery periods, Congress approved early in 1941 an appropriation of $175,000,000 so that the Army might undertake a long-range program of cotton- and wool-textile and apparel buying. Even though delivery of these purchases was scheduled over a relatively long period, in order to cause the least possible disruption to the civilian market, the orders did lead to a considerable tightening in the stocks available for the civilian trade. Denim, required in large quantities by the Army, advanced nearly 15 percent between January and June 1941, and the rise was reflected in a 7-percent increase in the retail price of overalls during the same period. Large orders for Army shirts led to the general disappearance of certain fabrics on the civilian market. When the Army experienced increasing difficulty in obtaining desired qualities of fabrics originally requested, specifications were changed to other constructions or different types of fabrics. As looms were shifted to these other constructions in order to meet military demand, civilian shortages devel-

[45] Federal Reserve Board.

oped for additional fabrics. During this period, work-clothing prices reflected these increases more than did other apparel, partly because work clothing was more directly affected by Army buying and partly because, being more standarized in relation to quality of materials used and cut of garment, work clothing did not readily lend itself to adjustments through quality changes.

Although the prices of other cotton apparel were influenced only slightly during the early part of the Defense Period by price advances in yarns and grey goods, many quality adjustments were made in order to continue selling apparel in the customary retail price lines. For example, between August 1939 and June 1941, the average retail-price increase reported on men's business shirts was less than 2 percent (see table 25), as compared with an approximate 44 percent rise in the wholesale price for 128 by 68 broadcloth. This price stability was accomplished, according to the trade press, by the substitution of 100 by 60 broadcloth to retail in the lines formerly cut from 136 by 60 broadcloth and by the substitution of printed patterns and solid colors in the place of woven patterns. Similarly, retail prices on women's percale house dresses had advanced only 3 percent above the pre-war level by June 1941, while the grey goods from which the percale was made had risen approximately 85 percent at wholesale during the same period. Manufacturers were reported to have succeeded in retarding price advances on dresses by the substitution of lower count fabrics, simpler styles, and shorter zippers.

While actual price advances for most cotton apparel other than work clothing were moderate up until mid-1941, the rate of advance was accelerated appreciably during the latter part of the year, as a result of the spectacular increase in yarn and grey-goods prices. Business shirts advanced 11 percent between June 1941 and December 1941, as compared with less than 2 percent between August 1939 and June 1941, while overalls advanced 16 percent in the later period as compared to 13 percent in the earlier.

Although ceilings were placed on yarns and leading grey-cloth constructions several months prior to the entry of the United States into the war, the ceilings were established at such relatively high levels that no general downward price revisions were made in the apparel market. On the contrary, prices continued to increase as yarn and grey-goods ceilings were revised upward.

WOOL APPAREL

Retail-price movements of wool apparel during the Defense Period reflected much less of the price gains in raw material than did cotton apparel. This relatively long lag between the increase in the price of raw wool and the price of woolen apparel may be accounted for to some extent by the fact that woolen apparel is a seasonal commodity, and a longer period of time elapses between the preparation of raw wool and the appearance of finished clothing on the market than in the case of raw cotton and cotton apparel, such as work clothing. Furthermore, the construction of woolen and worsted goods is not standardized to as great an extent as are cotton weaves, so that the various types lend themselves more readily to changes designed to save weaving costs.

The retail price of men's worsted suits had advanced only 5 percent by June 1941, although wholesale prices for worsted fabrics from which men's suits are manufactured rose 25 percent during the first 4 months after the outbreak of war, fell only moderately in 1940, and by the summer of 1941 stood 40 percent above the pre-war level. By the autumn of 1941, however, the effects of increased fabric prices, as well as the higher labor rates allowed clothing workers in May 1941, were felt on the civilian market; and, by December, suits at the retail level stood 10 percent above their midsummer level and 16 percent above their pre-war prices. Weak consumer demand, attributed in part by the trade to uncertainties regarding the Selective Service draft plans, and resistance to higher prices had induced some manufacturers to adopt indirect methods to increase prices earlier in the Defense Period. For example, lighter weight fabrics, or fabrics made from coarser grades of wool, were substituted by some manufacturers in established price lines, while machine operations were substituted for hand detail in the manufacture of some of the cheaper suits. Woolens were used more frequently for men's suits when a bottleneck developed in the wool-combing industry and prices of worsteds rose rapidly as Army demand increased. The fact that woolens lend themselves more readily than do worsteds to blending with rayon and cotton likewise favored their use. Tropical worsteds, slow and difficult to weave, were dropped from many manufacturers' lines in the summer of 1941, and rayon blends assumed an increased importance. Topcoats, typically manufactured from wool material, advanced less than suits during the Defense Period, owing no doubt to the greater use of blends.

Style trends toward softer fabrics in the women's wear field in recent years had led to a much greater acceptance of blends than in men's wear. Consequently, the effect of increases in raw-wool prices were reflected even less in women's apparel than in men's apparel. Retail prices of women's coats in December 1941 stood only 7 percent above their September 1939 level, while dresses had advanced 12 percent during the same period.

SILK AND RAYON APPAREL

Prices of women's silk hose rose sharply upon the Government announcement that no further processing of silk for civilian use would be permitted, following the rupture of commercial relations with Japan at the end of July 1941. Since the larger part of silk imports in recent years had been used for hose, the stoppage of imports affected hosiery manufacturers primarily, and women's lingerie and men's tie manufacturers to a lesser extent. Immediately after it became known that further processing of silk for hosiery manufacture was prohibited, demand for hose soared as numerous consumers purchased quantities sufficient to last for some time. With the exception of a temporary price increase early in 1940, retail prices of women's hose had remained practically unchanged between August 1939 and July 1941, but advanced nearly 20 percent between July and December 1941. In order to conserve the remaining supplies of silk-hosiery yarn, the Government requested that only one-half the stocks be used for making all silk hose and that the other 50 percent be used in combination with other fibers. Manufacturers of rayon yarn were required

to allocate designated quantities of yarns to hosiery manufacturers in order to conserve silk and nylon. At the same time the Government made a similar request relative to the use of nylon yarn.

The sharp rise in rayon-lingerie prices during the latter part of 1941 reflected the moderate price advances for yarn and, probably more important, the shortage of yarns. Retail prices of rayon panties remained practically unchanged between August 1939 and August 1941, but advanced approximately 14 percent during the last 4 months of 1941. Some manufacturers employed blends of cotton with rayon in order to maintain established price brackets.

Advances in rayon grey-goods prices, ranging from 30 to 60 percent, between August 1939 and August 1941 and the shortage of rayon yarns led to some quality changes in women's dresses, as manufacturers sought to maintain established price brackets. Cotton and rayon mixtures replaced all-rayon fabrics in some of the cheaper lines, while weavers tended to concentrate production on lighter weight fabrics in order to produce the maximum yardage from the rayon yarns available.

TABLE 25.—*MEN'S AND WOMEN'S APPAREL: Retail-Price Indexes for 34 Cities Combined, June 1939–December 1941*

Year and month	Men's clothing: Retail-price indexes (June 1939=100)								Women's clothing: Retail-price indexes (June 1939=100)				
	Overalls	Shirts, business	Shirts, work	Socks	Suits, wool	Topcoats	Trousers, work	Undershirts	Coats, heavy, plain[1]	Dresses, wool[1]	Hose, silk	Panties	Wash frocks[2]
1939													
June	100.0	100.0	100.0	100.0	100.0	.....	100.0	100.0	.....	.....	100.0	100.0	100.0
September	99.9	99.8	99.9	100.0	100.2	100.0	99.8	99.9	100.0	100.0	100.5	99.5	95.0
December	102.3	100.7	100.6	100.0	100.8	.....	100.5	100.5	.....	.....	103.9	99.5	100.8
1940													
March	104.2	101.0	102.2	100.2	101.9	.....	101.3	100.6	.....	.....	105.7	99.9	100.1
June	104.5	101.0	102.9	100.2	101.8	.....	101.5	100.1	.....	.....	102.1	99.8	100.1
September	104.1	100.6	103.2	100.2	102.0	101.3	102.1	99.9	100.0	101.0	100.4	99.9	100.2
October	104.1	101.0	104.7	100.4	102.0	.....	102.1	100.1	.....	.....	100.0	99.9	100.4
November	104.2	101.0	104.7	100.4	102.0	.....	102.3	100.1	.....	.....	100.0	99.9	100.4
December	104.1	100.8	104.0	100.1	102.1	102.2	102.2	100.0	99.5	100.6	100.0	99.9	100.5
1941													
January	105.0	100.8	103.8	100.1	100.6	98.1	102.3	100.1	92.1	.....	100.0	99.9	99.9
February	105.6	100.8	104.5	100.2	101.7	98.1	102.5	100.1	86.0	.....	99.7	99.9	99.9
March	106.4	100.9	105.0	100.2	103.5	103.7	103.7	100.5	100.3	100.6	99.8	99.6	100.6
April	108.7	101.1	105.5	100.2	103.8	.....	104.6	101.1	.....	.....	99.7	99.6	100.6
May	109.9	101.3	107.5	100.2	104.6	.....	105.5	101.3	.....	.....	99.7	99.6	100.9
June	112.8	101.6	109.5	100.5	105.2	.....	107.5	101.4	.....	.....	99.5	99.6	102.9
July	115.1	103.1	113.5	101.0	106.3	.....	109.3	104.1	.....	.....	99.5	100.4	107.2
August	119.2	104.6	116.0	102.1	108.7	.....	110.3	109.7	.....	.....	102.3	100.1	111.8
September	124.4	107.9	123.0	104.8	114.4	109.6	115.9	113.4	110.3	111.8	113.1	105.3	119.9
October	127.3	109.3	127.5	106.0	115.0	110.6	119.6	114.3	110.0	.....	115.8	108.8	129.1
November	129.7	111.2	131.0	108.1	115.3	109.6	121.5	116.6	108.5	.....	117.4	112.3	134.9
December	131.4	112.5	134.0	109.0	115.5	110.1	122.4	118.4	107.0	112.4	119.2	114.0	138.3

[1] Base, September 1939=100.
[2] Percale.

Burlap

During the Defense Period, burlap prices rose sharply as a result of shipping difficulties and of control exercised over production and prices in India. During the spring of 1941, prices were more than double those preceding the attack on Poland. OPA controls reduced this

extreme advance somewhat, but at the end of the Defense Period the net increase over August 1939 amounted to 109 percent.

The price of burlap (10½ ounce, 40-inch, New York), like that of other imported commodities, reacted violently to the outbreak of war in Europe, rising from 5.5 cents per yard in August 1939 to 11.1 cents in November. The price then eased until April 1940, rose slightly in April and May, and fluctuated between 27 and 47 percent above its pre-war level until November. A sustained advance which began in the fall of 1940 carried the price in July 1941 to its peak for the period, 13.8 cents per yard—more than 150 percent above its pre-war level. (See table 26.) On August 16 a ceiling schedule was issued which lowered the prices of 17 burlap constructions approximately 20 percent from prevailing market rates in the New York market. Price quotations remained unchanged at ceiling levels from September until the attack on Pearl Harbor.

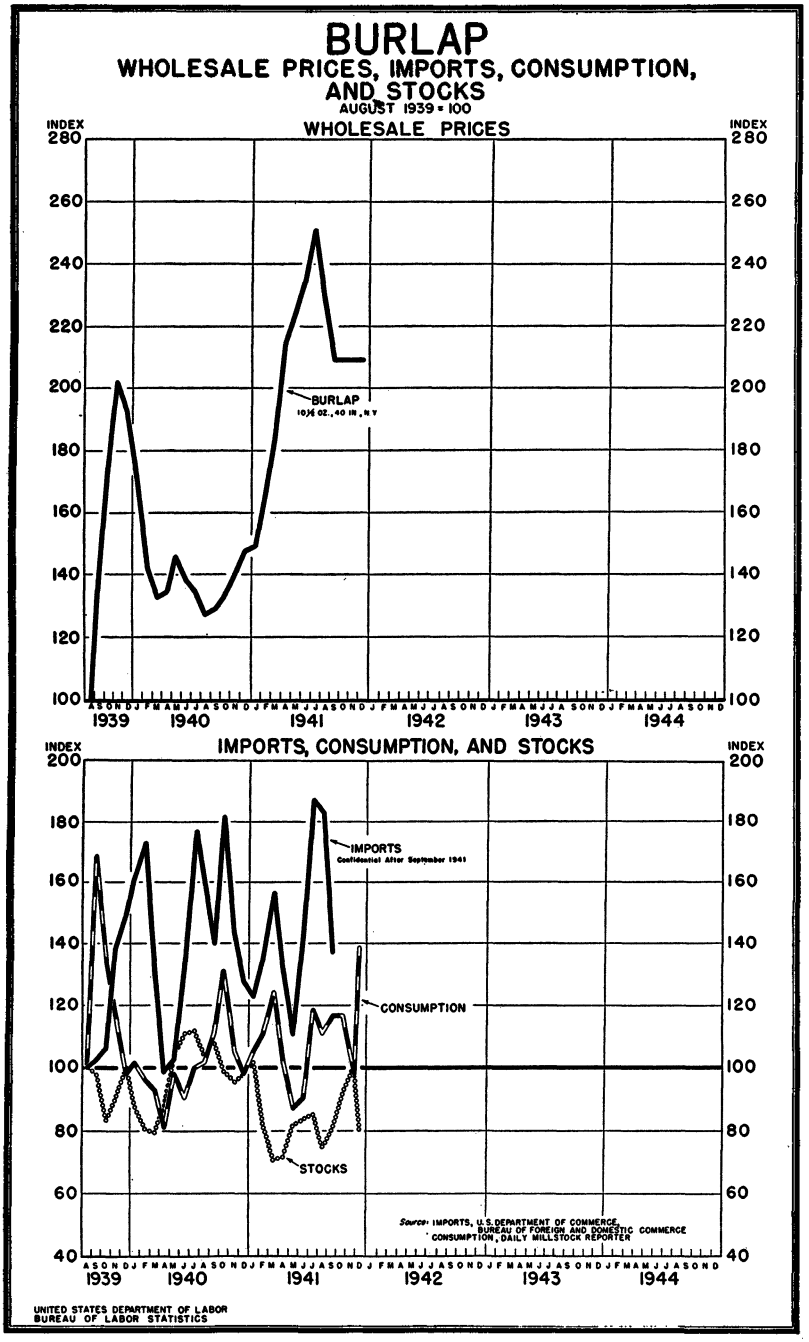
The 102-percent increase in burlap prices during the early fall of 1939 resulted largely from speculative activity, uncertainty concerning shipping space, and large British orders for sandbags. In October 1939, Great Britain ordered 500 million burlap sandbags to be delivered by April 1940.[46] Following receipt of this order, the Indian Jute Mills Association (composed of the majority of mills in Calcutta) increased the hours of burlap production from 54 to 60 hours a week, but prices continued to rise.[47]

Because of the price increase and a decline in imports which caused United States burlap stocks to fall from 258 million yards at the end of September to 221 million at the end of October, a movement developed toward substitution of cotton fabrics (osnaburgs and coarse sheetings) for burlap.[48]

Prices turned down in December, the decline continuing through March 1940, when burlap was selling in New York for 7.3 cents per yard—34 percent below the November peak, but still 33 percent above the pre-war level. This decline reflected a drop in domestic economic activity, relatively large imports in November and January, and the failure of Great Britain to place another order for sandbags, originally expected for January. Calcutta prices and production both declined when Great Britain postponed the delivery date of the October 1939 order until August 1940.[49]

Burlap prices rose slightly in April and May, reaching a level of 8 cents per yard (New York) in the latter month—45 percent above that of August 1939. The increase resulted from extension of the war in Europe, a marked drop in imports during April, and price-raising actions taken in India. The Indian Jute Mills Association cut production drastically by a series of agreements beginning in January, and in June, after the loss of many European markets; also, Calcutta mills agreed upon minimum burlap prices for the spot market in Calcutta.[50] Nevertheless, prices declined in June and July, reflecting the prospect of a record-breaking August jute crop which led in India to widespread discussion of crop control.[51]

[46] Journal of Commerce, October 31, 1939.
[47] At this time, one grade of burlap used for bags commanded a price one-half cent a yard above the fine combed cotton broadcloths used in men's expensive shirts. (Journal of Commerce, November 30, 1939).
[48] Journal of Commerce, November 17, 1939.
[49] Idem, January 29, 1940.
[50] Idem, June 28, 1940.
[51] Idem, September 4, 1940.



In September 1940, burlap prices in the New York market began a gradual advance which was accelerated in the winter and spring of 1941. The seasonal demand for burlap, which accompanies harvesting of domestic agricultural crops, contributed initially to this rise. Early in September, the British Government placed another large order for sandbags. In addition, the shipping situation became increasingly difficult.[52] Both freight and war-risk-insurance rates were raised during the summer of 1940.[53] As a result, the price of burlap in the New York market rose from 7 cents per yard in August to 8.1 cents in December and continued to increase, reaching in January 1941 a level 49 percent above that of August 1939. In that month the United States Government, inviting bids for 2 million sandbags, gave bidders the option of offering either burlap or cotton bags.[54]

Throughout 1941, shipping difficulties became more and more acute. Many British vessels were withdrawn from the burlap runs and although United States ships took over a large part of the Pacific trade, their cargo space was increasingly used for transportation of other strategic war materials.[55] Also, at least one burlap steamer was lost at sea.[56]

By July 1941, burlap was selling in the New York market for almost 14 cents a yard—more than 150 percent above its pre-war level—while the spread between New York and Calcutta prices, less ocean freight, had increased from 0.729 cent a yard in August 1939 to 4.68 cents.[57] Early in August the Office of Price Administration and Civilian Supply held a series of conferences with members of the burlap industry, and trading in the New York market came to a standstill in anticipation of price control. A formal ceiling was issued on August 15, 1941, Mr. Henderson stating that—

> The price increase in this country has been due in part to higher prices in Calcutta, in part to higher shipping and insurance costs, and in part to a wholly unjustified increase in the margin between what importers pay for burlap and what they sell it for.[58]

Effective August 16, 1941, the price schedule lowered the prices of 17 burlap constructions in the New York market approximately 20 percent, and further provided that they be reduced an additional 5 percent in January 1942. The maximum prices for the period ending December 31, 1941, were about 15 percent above the Calcutta prices of July 29, a mark-up which the Office of Price Administration considered adequate to cover increased shipping and insurance costs and to maintain importers' margins at normal levels.

The fact that the schedule did not specify maximum prices to be paid to suppliers in Calcutta led to the complications frequently attendant upon efforts to control prices of commodities produced almost entirely outside of the United States. Burlap prices in the Calcutta market, strengthened by heavy demand from Great Britain, South America, Russia, and the United States, advanced until they

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[52] Journal of Commerce, September 4, 1940.
[53] Idem, August 30, 1940.
[54] Daily News Record, January 29, 1941. However, the price of cotton fabrics also had risen considerably after the outbreak of war. (Cf. section on Cotton Grey Goods, p. 87.) Osnaburg prices in January 1941 had advanced to a level more than 31 percent above that of August 1939, and by September they were 83 percent above their pre-war level.
[55] After June 15, 1941, all ships were ordered to allot half of their cargo space to the transportation of manganese ore. (Journal of Commerce, June 20, 1941.)
[56] Journal of Commerce, March 7, 1941.
[57] Based on data obtained by the Bureau of Labor Statistics.
[58] Price schedule No. 18, Release No. PM 950, August 16, 1941.

were higher than the maximum prices allowed in New York. Although the shipping situation became easier during September, available cargo space was not filled with burlap because of the high prices prevailing in Calcutta. However, imports contracted for in preceding months continued to be received in New York. Although trade reports indicated that domestic bag manufacturers were unable to satisfy their needs during this period, the movement from importers' stocks to cutters-up did not diminish. Prices of second-hand burlap bags, supposedly covered by the ceiling schedule but apparently considered by some sellers to be excluded, soared.[59]

TABLE 26.—*BURLAP: Wholesale Prices, Imports, Consumption, and Stocks, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; imports—U. S. Bureau of Foreign and Domestic Commerce; consumption and stocks—Daily Mill Stock Reporter]

Year and month	Wholesale price, per yard [1]	Imports (millions of pounds)	Consumption (millions of yards) [2]	Stocks (millions of yards) [3]
1939	*Cents*			
August	5.5	19	54	264
September	7.5	40	91	258
October	9.6	22	73	221
November	11.1	58	63	240
December	10.6	28	53	264
1940				
January	9.4	65	55	231
February	7.8	35	52	213
March	7.3	40	50	210
April	7.4	17	44	232
May	8.0	42	53	276
June	7.6	35	49	294
July	7.4	67	54	295
August	7.0	25	55	274
September	7.1	56	60	284
October	7.3	49	71	261
November	7.7	34	57	253
December	8.1	40	53	259
1941				
January	8.2	31	57	269
February	9.1	47	60	215
March	10.1	43	67	187
April	11.8	33	55	189
May	12.3	31	47	214
June	12.9	51	49	221
July	13.8	57	64	225
August	12.6	49	60	198
September	11.5	30	63	213
October	11.5	[4]	63	242
November	11.5	[4]	53	265
December	11.5	[4]	75	212

[1] Burlap, 10½-ounce, 40-inch, New York.
[2] Represents shipments from importing firms to cutters-up.
[3] Total of spot stocks (in hands of importing firms, not including those in hands of bag manufacturers) and stocks afloat (ordered and cleared from port of Calcutta, not including those orders not cleared from the docks at Calcutta).
[4] Not available for publication.

[59] In announcing the schedule, the Office of Price Administration stated that "imposition of the ceiling is also expected to produce a downward movement in the price of second-hand bags to their normal price relationship of 30 to 40 percent under the prices of new bags of similar kind and quality." (Office for Emergency Management, PM 950, August 16, 1941.)
On February 11, 1942, the Office of Price Administration announced an amendment to the burlap-price schedule, effective February 7, 1942, to "make clear that the schedule applies to all burlap." It was stated that, while "the schedule as originally issued was intended to cover not only new material, but used, damaged and resewn burlap as well * * * OPA has discovered that some sellers * * * have been disposing of second-hand and damaged materials at prices higher than those obtaining for new burlap under price ceiling." (Office of Price Administration, PM 2465, February 11, 1942.)

The price of 10½ ounce, 40-inch burlap, which had dropped back to the ceiling level of 11½ cents per yard in September 1941, remained unchanged at that figure through December. Early in the latter month, prices in Calcutta declined slightly owing to a step-up in production and to fear of hostilities in the Pacific, but this development did not result in increased imports into the United States, because in the weeks immediately before the attack on Pearl Harbor the shipping situation once more became extremely tight.

Chapter V.—Housefurnishings

Summary

Prices of housefurnishings as a group rose moderately during the Defense Period, advancing 18 percent between August 1939 and December 1941. However, prices of certain products such as sheets and blankets rose more sharply—from 40 to nearly 60 percent—and shortages necessitated changes in construction which often lowered quality. Prices of furniture and carpets rose 23 percent. Advances for electrical appliances, stoves, and china and glassware were, on the whole, considerably smaller.

Prices for textile housefurnishings were affected, as was apparel, by the broad price movements in the fiber markets and rose appreciably during the Defense Period. Civilian demand competed with the military for much of the available loom capacity and this contributed to a still greater price increase. For example, unprecedented military demand for bed sheets, the supply of which was limited by the number of wide weaving looms available, caused prices to advance rapidly and supplies became very limited, especially for widths required by the Army. As was true in the case of apparel fabrics, looms were shifted to increase production on constructions needed for military purposes. Looms normally employed in weaving curtain fabrics, for example, were converted to the production of mosquito netting needed for camouflage purposes, and supplies of civilian curtain fabrics were curtailed.

Much of the advance in prices for cotton housefurnishings during the early part of the Defense Period is thus attributable to the bottleneck in spinning and weaving facilities resulting from the heavy civilian and military demand rather than to any sharp price rise for raw cotton. In the case of other textile housefurnishings, however, important factors were the curtailment of wool and jute imports for civilian use and the consequent sharp rise in the prices of these raw materials. Wholesale prices for all-wool blankets rose nearly 21 percent during the 3 months succeeding the outbreak of the war in Europe and remained unchanged during the following 10 months. As imports of desirable Asiatic and Scottish rug wools and jute used for rug backings decreased, prices for available supplies soared, with consequent increases in carpet prices. Competition for South American wools, plus rising transportation costs, pushed prices up sharply for these fabrics; and substitution of these less desirable wools did not lead to a halt in the upward price movement for carpets.

Numerous quality changes were reported for textile housefurnishings during the Defense Period, occasioned in some instances by manufacturers' desires to retard the effect of rapidly increasing costs, which, it was feared, would reduce civilian buying, and in other instances by the necessity of seeking substitutes for imported materials which could be obtained only in limited quantities, if at all. For example, some manufacturers reduced the size and weight of popular priced bath towels in order to maintain established price brackets, while the weight of some wool blankets was likewise reduced. Faced with the necessity for stretching available supplies of wool to meet civilian demand as well as the desire for limiting price advances, manufac-

turers employed blends, especially of rayon, to an increasing extent in the manufacture of blankets and carpets. Pastel colors were dropped in blanket lines as supplies of white wools diminished; fewer rug patterns were produced. Even with the deterioration in the quality of rugs wholesale prices advanced 23 percent by July 1941, and, although the OPA publicly questioned the necessity for such advances, no formal action was taken. On the other hand, ceiling prices were placed on wool upholstery fabrics in November 1941, following an investigation of these prices by the Federal Trade Commission at the request of OPA.

Although furniture prices remained fairly stable until early in 1941, the shortage of certain imported materials and the shift of experienced labor to defense industries resulted in marked changes in quality before that date. Hide glue rose sharply in price and the supply became so limited that some manufacturers had to turn to less desirable substitutes. The use of burlap was limited by Government order and cotton fabrics had to be used as furniture manufacturers' stocks of burlap were exhausted. The use of down and feathers, which were needed for Army sleeping bags, was prohibited as a stuffing material for furniture, while the available stocks of steel were conserved through the reduction in the number of coil springs used or through the substitution of link for coil springs. The growing scarcity of metals resulted in a greater use of wooden and plastic drawer pulls. While some of these substitutions in the manufacture of furniture led to a deterioration in quality, manufacturers contended that the substitutions were seldom accompanied by a reduction in cost.

TABLE 27.—*HOUSEFURNISHINGS: Indexes of Wholesale Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	All house-furnishings index (August 1939=100)	Year and month	All house-furnishings index (August 1939=100)
1939		*1940*—Continued	
August	100.0	November	103.5
September	101.2	December	103.9
October	102.6		
November	103.3	*1941*	
December	103.4	January	104.0
		February	104.1
1940		March	104.6
January	102.7	April	105.6
February	102.8	May	106.8
March	102.8	June	108.8
April	103.3	July	110.3
May	103.4	August	111.4
June	103.4	September	113.5
July	103.4	October	116.2
August	103.4	November	117.5
September	103.4	December	118.1
October	103.5		

Rising consumer demand for furniture, the increased cost of materials, an impending hourly wage-rate increase, and rumors relating to an expected shortage of woods, led many manufacturers to announce plans for price advances in the spring of 1941. The continued price advance, together with a shortening of trade discounts and the growing practice of accepting orders at prices prevailing on the

delivery date, resulted in an investigation of furniture prices by OPA in April 1941. As a result of the investigation an attempt was made to control prices through a series of agreements with manufacturers, but these proved ineffective. In August, OPA announced that orders would be issued shortly for formal price controls and compulsory simplification, including reduction of the number of designs; but in November it was made known that these plans would be postponed indefinitely. Wholesale prices of furniture continued to rise during the fall and in December 1941 stood nearly 23 percent above their pre-war level, approximately 18 percent of the rise occurring in 1941.

Unlike other consumer durable goods for which prices had increased, prices for electric refrigerators were nearly 6 percent below their pre-war level at the close of the Defense Period. This unusual situation reflected a price decrease by one large producer in 1940, which was followed by successive reductions by competing firms; and by January 1941, prices for popular models stood 16 percent below their pre-war level. Three successive price increases by leading producers in March, May, and June 1941, canceled more than half of these 1940 reductions.

Textile Housefurnishings

Prices of textile housefurnishings, such as sheets and blankets, advanced substantially during the Defense Period, reflecting the shortage of raw materials and their higher cost.[1] In addition, some changes in quality were introduced—for example, in the case of blankets other fibers were extensively substituted for wool. Between August 1939 and December 1941 prices advanced by amounts ranging from 40 to nearly 60 percent.

SHEETS

Prices of sheets,[2] participated in the general advance of prices following the outbreak of war and by November 1939 were 17 percent above their pre-war figure, a level which they held through February 1940.[3] In March, however, sheet prices turned downward, reflecting a decline in the price of carded cotton yarns from which most sheets are made. By April, they had dropped to a level only 4 percent above the August 1939 figure, where they remained through August 1940.

Large scale Army orders—the first of which were placed in June 1940 [4]—combined with rising civilian demand, brought about a moderate price increase in September, and by October the quotations were 8 percent above the pre-war level. During the latter month, there were Army bids for 6 million sheets, a quantity estimated by the trade press as equal to approximately 10 percent of the year's production.[5] Consequently, by December 1940 many

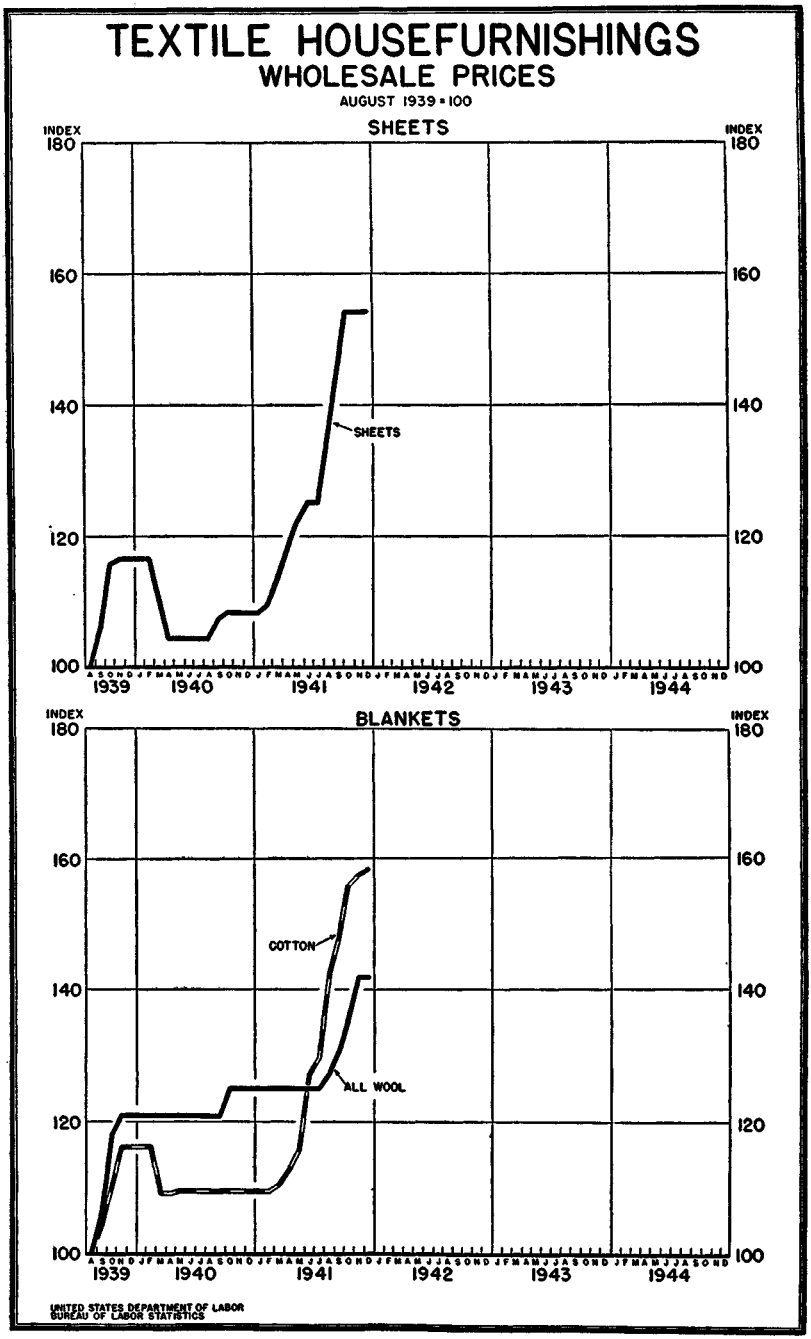
[1] Cf. Raw wool (p. 92), Raw cotton (p. 80), and Cotton yarns (p. 83).

[2] Sheet prices are quoted in terms of discounts from or premiums above a list price. Thus, the 54.2 percent increase from August 1939 through December 1941 represents not a change in the list price for the six sheets which make up the composite price (which was $13.38 a dozen throughout the entire period), but a shortening of discounts from 35–40 percent to 6.5–10 percent.

[3] The price series used for this analysis is composed entirely of branded (i. e. nationally advertised) sheets, which are less sensitive to market conditions than the prices of unbranded sheets. According to the trade press, sales of branded sheets constitute roughly two-thirds of total sheet sales. (Cf. Daily News Record, November 19, 1941.)

[4] Daily News Record, June 15, 1940.

[5] Idem, October 17, 1940.



sheet and pillowcase mills were sold up through March so far as civilian orders were concerned.[6]

Prices remained at the October level until February 1941, but in that month they began a sustained advance which continued throughout the remainder of the year. This marked advance, which by October had carried prices 54 percent above their pre-war level, resulted from a combination of increased consumer demand, mounting prices of raw cotton and of carded cotton yarns, and continued large-scale Army and Navy purchases which, by the end of November 1941, amounted to approximately 14.4 million sheets.[7]

In October the Office of Price Administration announced that ceiling prices would soon be set at figures roughly 15 percent below the existing market levels. Price Administrator Henderson stated that the maximum prices for sheets would be tied to a certain price for raw cotton, as had been done in the case of cotton grey goods. Although no maximum price schedule was established until February 1942, branded sheet prices remained at their October level throughout the remainder of 1941.

BLANKETS

Prices of both cotton and all-wool blankets rose rapidly during the 3 months following the outbreak of war and by November 1939 were 16 and 21 percent, respectively, above their August levels.

Following the initial advances, prices leveled off. Raw-wool prices, which had risen abruptly at the outset of the war, declined slightly from December 1939 through August 1940, while wool-blanket prices remained unchanged. In September, as the result of large-scale Army orders (beginning in June) for wool products, raw-wool prices began to rise; this increase led to a 3-percent advance for wool blankets during October. Raw-cotton prices, which had dropped slightly during the first 2 months of the war, rose 20 percent between October 1939 and February 1940, but turned downward in March. This decline was reflected at once in a reduction of 6 percent in quotations for cotton blankets.

Blanket prices were stable thereafter until the spring of 1941 when continued purchases for the armed forces, coupled with increased consumer demand for textile products, resulted in higher prices for cotton and wool and a further advance in prices of blankets. By June, prices of cotton blankets were 27 percent above the August 1939 figure (see table 28). This upward movement continued without interruption to the end of the Defense Period, largely as a result of the soaring prices of raw cotton during the summer and fall of 1941; it was also intensified by a heightened demand for cotton blankets as substitutes for wool, owing to the short supplies and increased cost of the latter. Thus, by December 1941, cotton-blanket prices were 58 percent above the August 1939 quotations.

A steady increase in the list prices of all-wool blankets began in August 1941, and by December had mounted to 42 percent above the pre-war level. In addition, retailers' costs were further increased by partial withdrawal of discounts formerly allowed. It had been the custom to allow a 2-percent discount for payment before October 10 on fall lines, with the net amount due December 10, and an additional

[6] Daily News Record, December 3, 1940. Pillowcase prices have not been treated separately because their fluctuations are almost exactly parallel to those of sheets.
[7] Daily News Record, passim.

"anticipation" discount for bills paid earlier. In 1941, however, the 2-percent discount was allowed only for payments made by August 10, net October 10, and the "anticipation" discount was canceled.[8]

Army purchases of wool blankets, which amounted to 10.5 million during 1940 and 1941,[9] were part of the huge military demand for wool products. Because of the resulting shortage of raw wool, the production of all-wool blankets for civilian use was materially curtailed, while the complete or partial substitution of cotton and of rayon staple fiber for wool became increasingly widespread. For the fall of 1941, leading blanket manufacturers offered 45 lines containing spun rayon—more than three times as many as in 1940.[10] In addition, the higher price of white wool led to the cancelation of many pastel lines which can only be produced from white wool.[11]

TABLE 28.—*TEXTILE HOUSEFURNISHINGS: Manufacturers' Prices of Sheets and Blankets, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939=100) of manufacturers' prices			Year and month	Indexes (August 1939=100) of manufacturers' prices		
	Sheets[1]	Blankets			Sheets[1]	Blankets	
		All wool[2]	Cotton[3]			All wool[2]	Cotton[3]
1939				*1940*			
August	100.0	100.0	100.0	November	108.3	125.0	109.5
September	106.3	106.1	104.3	December	108.3	125.0	109.5
October	115.8	118.0	110.1	*1941*			
November	116.7	120.8	116.2	January	108.3	125.0	109.5
December	116.7	120.8	116.2	February	109.4	125.0	109.5
1940				March	113.5	125.0	110.3
January	116.7	120.8	116.2	April	118.3	125.0	112.9
February	116.7	120.8	116.2	May	121.9	125.0	115.9
March	110.4	120.8	109.2	June	125.0	125.0	127.2
April	104.2	120.8	109.2	July	125.0	125.0	129.9
May	104.2	120.8	109.5	August	[4]	127.1	141.9
June	104.2	120.8	109.5	September	[4]	130.8	147.5
July	104.2	120.8	109.5	October	154.2	135.4	155.4
August	104.2	120.8	109.5	November	154.2	141.7	157.3
September	107.3	120.8	109.5	December	154.2	141.7	158.2
October	108.3	125.0	109.5				

[1] Sheets, bed, plain, 81 by 99 inches, per dozen, mill.
[2] Blankets, wool, 4 to 5 pounds, per pound, factory.
[3] Blankets, cotton, per pair, factory.
[4] No price available.

Carpets

Carpet prices advanced 23 percent on the average during the Defense Period, largely because of difficulties in securing raw materials and the sharp rise in consumer demand.

Wool suitable for pile fabric floor covering is not grown in the United States, and consequently the outbreak of war brought fear of raw material shortages. The price advance for carpets began in mid-September 1939, as several important sources of supply (India, Scotland, and Syria) were threatened by the war,[12] and by December 1939

[8] Journal of Commerce, February 4, 1941.
[9] Daily News Record, March 25, 1942.
[10] Recent Changes in the Quality of Consumers' Goods, by Laura Brown Webb (U. S. Bureau of Labor Statistics, mimeographed report), p. 5.
[11] Idem, p. 9.
[12] Journal of Commerce, October 20, 1939.

increases averaged 12 percent. The best grades of carpet wool, normally sent to the United States from India, were completely cut off by British trade regulations, while imports from other countries became more costly as freight and insurance rates rose. South American wool, which generally had been used only when blended with the sturdier Indian variety, was greatly in demand by all countries.

A change in the carpet-price structure was instituted early in 1940, but lasted only 2 months.[13] Carpet manufacturers in January announced the elimination of volume rebates, citing as precedent a ruling by the Federal Trade Commission that certain quantity discounts offered by a large mattress company were in violation of the Robinson-Patman Act. Large retailers promptly termed this action a "hidden price increase" and reduced their purchases substantially in the hope of forcing a renewal of discounts, and in February the discount system was reinstated by the industry.

Further increases were announced in the winter and spring of 1940, bringing prices by June to a level 17 percent above that prevailing at the outbreak of the war. These advances reflected the increasing tightness of supply. England's wartime restrictions prohibited the export of wool from any of the dominions except to Great Britain, while American importers were notified that no wool would be sold to them in Liverpool markets.[14] These restrictions were due in part to the utilization of carpet wools for the weaving of military textiles rather than of rugs; thus, mills in India turned from the production of carpet wool to blankets and uniform cloth for British and Colonial troops.[15] In addition, Italy's entrance into the war in June 1940 jeopardized shipments of wool by way of the Mediterranean. Argentina, the only remaining free wool market, was faced by a greatly increased demand not only from the United States but also from France and Japan.[16]

Because of the fact that consumer purchasing power had not as yet felt the influence of the recently initiated defense program, carpet manufacturers were hesitant during the middle and latter part of 1940 to institute further price increases. This, coupled with the cheapness of South American wools relative to those previously used, resulted in a period of complete price stability from July 1940 to February 1941. Producers, however, introduced a number of substitute materials, lowering the quality of the product, particularly of lower-priced carpets. Thus, the substitution of jute, hair, and mill waste, as well as spun rayon, was extensively practiced. Spun rayon was introduced as a mixture with wool early in 1940, but by the summer of that year severe shortages of all types of rayon had developed.

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[13] Cf. New York Times, December 31, 1939, January 19 and February 10, 1940; Journal of Commerce, January 8 and 9, 1940; Business Week, March 9, 1940.

[14] Journal of Commerce, January 11, 1940.

[15] Idem, July 17, 1940.

[16] The following figures indicate the shift in United States sources of raw carpet wool. Imports of carpet wool, according to the Journal of Commerce, October 15, 1940, were as follows:

	August 1939 (thousands of pounds)	*August 1940 (thousands of pounds)*
Argentina	1,475	2,544
India	2,697	250
United Kindgom	1,171	294
Syria	1,065	294
Iraq	818	252

In the latter part of 1940 prices were subject to intensified upward pressures, of which the foremost was the rapid increase in consumer demand resulting from the defense program. This was accentuated by the accompanying population shifts, as many workers apparently preferred to buy new rugs rather than ship old ones to the location of their new jobs.[17] In addition, both the prices of South American wool and shipping costs from that continent were increased; freight rates on the exportation of South American wools were advanced 33⅓ percent, effective February 1, 1941. Shipping space from any source was difficult to obtain; for example, the British Ministry of Supplies in October and November 1940 released 7 million pounds of Indian wool for American import on a quota basis, but shipping difficulties prevented its arrival before 1941.[18]

An upward movement in prices, which had long been expected, began in February 1941 with the announcement of a 5-percent rise by one large company. This action was promptly followed by other manufacturers and constituted the first of a series of advances which were to continue through June 1941, when prices were 23 percent above the pre-war level. (See table 29.)

These increases were accompanied by lowered costs as a result of the larger volume of output attained by the industry. Demand continued to be heavy, with sales for the first half of 1941 totaling $200,000,000 as compared to $145,000,000 for the same period of 1940.[19] To meet this rising demand with limited supplies, manufacturers instituted an allotment system in carpet sales, and limitations were placed on colors and patterns by a number of mills.

In July, while the New York market for fall floor coverings was in session, Price Administrator Henderson sent a letter to representative carpet manufacturers asking that the industry refrain from further price advances:

> If carpet and rug prices go still higher, other industries are certain to feel that they also are entitled to take advantage of improving market conditions. It is the combination of such price increases pyramided throughout industry which constitutes inflation * * * I should like, therefore, to request that you do not advance prices on lines to be marketed this fall.[20]

During the remainder of the summer, demand continued to be heavy, with sales being made largely on an allotment basis. One large company withdrew a popular carpet from the market for a 90-day period because of its inability to fill orders. In August 1941, with carpet prices 23 percent above those of August 1939, the Office of Price Administration held a series of conferences with wool dealers and carpet manufacturers concerning carpet prices, but no specific action was taken.

However, prices remained stable in succeeding months, despite sharply rising demand and in mid-November producers agreed with the Office of Price Administration to defer proposed price increases for at least another month.[21] Prices remained unchanged during the remainder of the year. It was rumored in the trade that increases of 5 to 7 percent were to be expected at the January openings.[22]

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[17] Journal of Commerce, October 15, 1940.
[18] Idem, November 19, 1940; Daily News Record, November 25, 1940.
[19] Idem, July 14, 1941.
[20] Idem, July 8, 1941.
[21] Idem, November 18, 1941.
[22] Idem, December 4, 1941.

TABLE 29.—*CARPET WOOL and CARPETS: Imports and Consumption, and Manufacturers' Price Indexes, August 1939–December 1941*

[Sources: Imports and consumption—U. S. Bureau of Foreign and Domestic Commerce and Bureau of the Census; prices—U. S. Bureau of Labor Statistics]

Year and month	Carpet wool (thousands of pounds)		Carpets—Axminster 9 x 12	Year and month	Carpet wool (thousands of pounds)		Carpets—Axminster 9 x 12
	Imports [1]	Consumption, scoured basis	Price index (August 1939=100)		Imports [1]	Consumption, scoured basis	Price index (August 1939=100)
1939				*1940*—Con.			
August	11,669	9,604	100.0	November	11,583	8,969	117.1
September	17,671	8,847	105.1	December	15,595	9,352	117.1
October	9,916	11,274	112.0	*1941*			
November	10,962	9,238	112.3				
December	9,630	7,665	112.3	January	19,905	11,015	117.1
1940				February	18,614	10,996	117.1
January	20,069	9,703	112.5	March	22,325	11,056	117.7
February	16,124	8,658	112.4	April	19,002	13,370	121.1
March	17,801	7,340	113.3	May	17,683	10,904	122.8
April	9 598	8,544	115.9	June	24,275	11,260	123.1
May	8,242	6,524	116.4	July	19,958	11,465	123.1
June	7,365	5,798	116.6	August	18,599	11,256	123.1
July	7,164	6,061	117.1	September	16,496	11,212	123.1
August	6,079	7,571	117.1	October	[2]	13,980	123.1
September	6,460	7,941	117.1	November	[2]	10,700	123.1
October	8,067	11,387	117.1	December	[2]	11,708	123.1

[1] Includes all nondutiable wool, except camel's hair.
[2] Not available for publication.

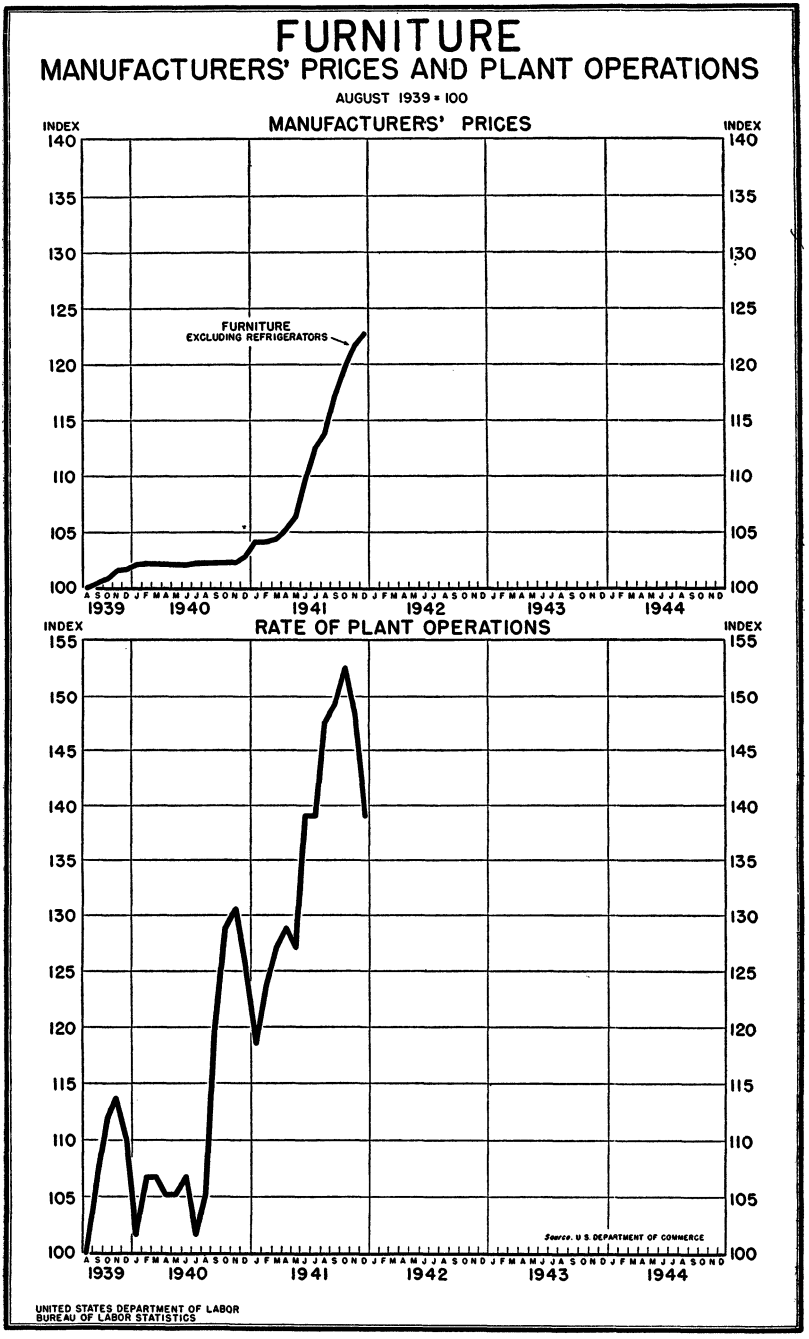
Furniture

Furniture prices remained relatively stable until mid-1941, despite very rapid increases in demand and output, and then rose sharply to reach a level in December 1941 about 23 percent above that prevailing before the outbreak of war in Europe. This advance persisted in the face of repeated price-stabilizing attempts by the Government.

During the period August 1939 to November 1939, furniture prices on the average rose less than 2 percent. Sales, however, expanded rapidly during this period, orders in September 1939 being 28 percent higher than in September 1938.[23] From August to November 1939 production increased 14 percent, in part seasonally. At the same time prices advanced moderately. These upward movements, however, came to an end when it became evident that no shortages of materials for the industry were imminent.

Both prices and production remained fairly stable in the first half of 1940, but in the latter part of the year demand rose sharply, reflecting the increased pace of the National Defense Program and the rise in consumer purchasing power. Thus, in January 1941 furniture production was 17 percent above the level of January 1940. Similarly, the National Retail Furniture Association reported that sales had increased 18 percent between February 1940 and February 1941, and Seidman and Seidman, furniture accountants, reported that new orders in April 1941 were 3 percent higher than in March, the first March-to-April increase in 5 years.[24]

[23] Retailing, December 30, 1940, p. 18.
[24] New York Times, March 21 and May 25, 1941.



These increases in demand and in output began to affect prices in the spring of 1941. In March, a number of furniture manufacturers announced plans to advance prices on some lines from 5 to 8 percent, while the American Furniture Mart Spring Survey predicted a general rise of prices which it attributed to (1) labor shortages, (2) rising prices of raw materials, and (3) shortages and consequent allocation of essential raw materials. According to its report, lumber costs had advanced by 30 percent; hide glue had risen 20 to 25 percent in price and was being rationed; plastics were to be substituted for metal finishings often at higher cost; more expensive synthetic substitutes were being used for imported finishing materials (tung oil and imported pigments); and costs of all fabrics were increasing.

These increases in costs of materials were among the factors leading to the price advance which began in April. Not only were quoted prices raised, but trade terms and discounts were shortened.

> One of the outstanding developments will be a shortening of trade terms and discounts. Already several of the larger case-goods manufacturers have announced a shift from 2 percent 30 days, net 60 days, to 2 percent 15 days, net 30 days.[25]

Government officials, however, were apparently unconvinced that the cost increases had been sufficient to justify the advances made in prices. They were also concerned by a change which was being adopted in the method of sale. When the Merchandise Mart and the American Furniture Mart opened in May, some companies had insisted on the "open" method of quoting prices—i.e., prices as of date of shipment on future delivery. To the dealers at the American Furniture Mart, the newly organized Office of Price Administration and Civilian Supply sent a letter condemning this practice as conducive to price increases.

By June 1941, however, the "open-price" system was in widespread use throughout the industry. In its defense, producers claimed (1) that manufacturing costs were unpredictable, and (2) that a minimum wage increase from 30 to 40 cents per hour, as suggested by the industry committee under the Wage and Hour Act, would add appreciably to costs.[26]

This extension of "open-price" sales brought forth a second condemnation by the Government. In June the Midsummer Market of the New York Furniture Exchange opened with many manufacturers not only employing the "open-price" method but also making sales largely by quota on the basis of former purchases and credit rating. On June 24, 1941, Price Administrator Henderson sent a letter to 47 of the largest furniture manufacturers protesting against both the "open" method of quoting prices and the general increase in furniture prices.

> This method of quotation (i. e., as of time of shipment) leaves the price open to unwarranted advances and removes the effect of competition in the furniture market. If continued, it will upset the market and have far-reaching repercussions on the general price level. * * * If such price increases continue in this and in other industries the result will be inflation and demoralization not only in your industry but over the economic system generally. Therefore, pending a determination as to the justification of your recent price increase, we request that you make no additional advance in prices until you have discussed the matter with us.[27]

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[25] Retailing, April 21, 1941.

[26] According to the Bureau of Labor Statistics, average hourly earnings in the furniture industry rose from 52.9 cents in August 1939 to 60.2 cents in August 1941, an advance of 13.8 percent. According to the Census of Manufactures, wages in the furniture industry were, in 1939, 25 percent of the value of product.

[27] Release No. PM 602, June 24, 1941.

Despite this request, several manufacturers, the day after receiving the letter, announced further increases of 5 percent. Thereupon Mr. Henderson, on June 28, requested the Federal Trade Commission to investigate prices, costs, and profits in the furniture industry. In his letter to the Chairman of the Commission, he stated:

> On June 26 the New York Times and other newspapers reported that, despite my request, several furniture manufacturers have announced a further increase of 5 percent. This is in addition to the increase from 5 percent to 10 percent made immediately prior to my letter.
>
> If the recent price advance is not in fact justified, we wish to know it and we think that Congress and the public should know it. If, on the other hand, increases in the price of materials have been such that the furniture manufacturers cannot fairly absorb them, we wish to know what these increases have been and the extent to which they may be justified.[28]

In July, prices, as well as production and sales, continued to rise, though officials of the Federal Trade Commission and the Office of Price Administration were reported to be investigating the records of various furniture factories in Grand Rapids and attending the Chicago Furniture Mart.

Furniture prices rose still higher in August. This was due in part to a regulation issued August 22 by the Federal Reserve Board, limiting the terms and conditions under which credit repayable in installments might be extended for purchasing or carrying consumers' durable goods.[29] Under the terms of the regulation a 10-percent down payment on household furniture was required, with remaining payments to be made in not more than 18 months. Since two-thirds of the sales of furniture stores are normally financed by installment credit,[30] the notice of this impending regulation resulted in a consumers' rush to purchase furniture before the regulation became effective on September 1, 1941.

This stimulus to prices, however, was to some extent offset by the fact that the raw material situation in the summer of 1941 appeared to be less stringent than had previously been feared. The principal potential shortage was in mahogany, arising from defense uses and from lack of shipping space from South America and the Philippines. In July, however, a statement was issued by the Mahogany Association, Inc., to the effect that a large proportion of the supply of mahogany logs had already been converted to veneer, which is suitable only for furniture. It was therefore pointed out that no immediate shortage was to be anticipated.[31] Furthermore, the trade was informed by the Department of Commerce in August that the supply of domestic woods (cherry, maple, oak, walnut, and birch) was quite sufficient to provide substitutes for mahogany if any shortage did develop.[32]

Despite this easing of the raw materials situation, the increasing pressure of consumer demand led to even further price increases. In August 1941, furniture prices were 14 percent above their levels of August 1939 (see table 30).

In August 1941 it was reported that more stringent Government control measures were to be adopted: furniture designs were to be frozen by an order from the Office of Price Administration, for the

[28] Release No. PM 636, June 28, 1941.
[29] Federal Reserve Bulletin, September 1941.
[30] Journal of Commerce, August 21, 1941.
[31] New York Times, July 13, 1941.
[32] Idem, August 16, 1941.

TABLE 30.—*FURNITURE: Indexes of Manufacturers' Prices and Plant Operations, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; plant operations—U. S. Department of Commerce]

Year and month	Indexes (August 1939=100) of—		Year and month	Indexes (August 1939=100) of—	
	Manufacturers' prices [1]	Plant operations [2]		Manufacturers' prices [1]	Plant operations [2]
1939			*1940*—Con.		
August	100.0	100.0	November	102.3	130.5
September	100.3	106.8	December	102.9	125.4
October	100.9	111.9			
November	101.7	113.6	*1941*		
December	101.8	110.2	January	104.2	118.6
			February	104.2	123.7
1940			March	104.4	127.1
January	102.1	101.7	April	105.2	128.8
February	102.2	106.8	May	106.4	127.1
March	102.2	106.8	June	109.7	139.0
April	102.2	105.1	July	112.5	139.0
May	102.2	105.1	August	113.8	147.5
June	102.2	106.8	September	117.1	149.2
July	102.3	101.7	October	119.6	152.5
August	102.3	110.2	November	121.6	148.3
September	102.3	120.3	December	122.7	139.0
October	102.3	128.8			

[1] Furniture subgroup, excluding refrigerators.
[2] Computed by Seidman and Seidman to indicate activity in the Grand Rapids district and in the industry as a whole, as revealed by reporting plants throughout the country. Data are expressed as percentages of normal (1926), based on relation of current to normal man-hours for the reporting plants. Normal is a fixed figure established on the basis of operations when the industry was working full force and full time. Since 1934 it has been adjusted to reflect a 40-hour week instead of a 50-hour week, as originally established. (U. S. Department of Commerce, Survey of Current Business.)

purpose of facilitating the establishment of price ceilings, while the number of market weeks in a year was to be reduced in order to lower expenses and discourage design changes.[33]

An additional step to stabilize the furniture market was taken by the Government in October; the Office of Price Administration announced that a voluntary agreement had been reached with furniture upholstery-fabric manufacturers whereby prices were to be kept at their September 10 levels until November 10.[34] The agreement provided, however, that requests for increases of 5 percent over these levels would be considered. A number of such requests were granted, and on November 12, 1941, a price schedule for furniture upholstery fabrics was issued, in which maximum prices were set at levels approximately 5 percent above those prevailing on September 10.[35]

At the time that the upholstery fabric ceiling was announced, Price Administrator Henderson stated that a schedule of maximum prices for wood furniture would be issued shortly thereafter. Late in November, however, he announced that plans to issue a furniture price ceiling had been indefinitely postponed, although his office would continue to keep a close watch on prices in the industry.

[33] New York Times, August 30, 1941.
[34] Release No. PM 1296, October 3, 1941.
[35] Price Schedule No. 39. Release No. PM 1549, November 11, 1941.

Household Electrical Appliances

ELECTRIC REFRIGERATORS

The electric-refrigerator industry is highly concentrated; in 1937, the latest year for which statistics are available, the four largest companies produced about 77 percent of the value of all 6 to 10 cubic-foot refrigerators,[36] the largest selling sizes. Prices quoted by these leading producers to dealers generally are uniform.[37] During the Defense Period, quotations declined in 1940, recovered partly in 1941, and at the time of the attack on Pearl Harbor the average price of refrigerators was about 6 percent below that prevailing in August 1939.

Prices of electric refrigerators were stable from August through December 1939, but were materially reduced in 1940. One major company began the downward revision in January and the other producers soon took similar action. Other price reductions followed, so that the average wholesale price of five models decreased from $101.11 in December 1939 to $94.69 in January 1940, to $92.95 in June 1940, and to $89.88 in December 1940.[38] Prices on individual models were reduced by amounts ranging from $2 to $17.20.[39] As a consequence of these price reductions and of increased purchasing power, sales rose sharply. In December 1940, sales were 25 percent higher than in December 1939.

This downward trend of prices was reversed in 1941, and there were three successive increases by August 1941. The first of these was instituted in February 1941 when three of the leading manufacturers advanced their prices from $5 to $10 a unit, and by March 12 this change had been followed by all other producers except the mail-order houses.[40] In April and again in June the major companies announced further price increases which were also reflected in the prices charged by the smaller manufacturers. However, in August 1941 the composite price of five models was still 12 percent lower than that of August 1939 (See table 31).

These price advances were due in part to the necessity of finding substitutes for aluminum, zinc, steel, copper, and other metals needed for the defense program. In the first part of 1941 tin-plated copper was used in place of aluminum for ice trays, and porcelain was substituted for nickel steel in evaporators and coils. As copper became increasingly difficult to obtain, further substitution became necessary and rubber and plastics were used for trays. These changes tended to increase costs because of the technological problems of change-over, although in some cases the substitute materials were less expensive than the products which they replaced.

Higher labor costs also contributed, though only slightly, to rising prices. Between December 1940 and July 1941, according to a survey made by the Bureau of Labor Statistics, unit labor costs of best-selling models (generally 6-foot) increased by amounts ranging from $0.29 to $1.99 per refrigerator. A typical change in labor

[36] T. N. E. C. Monograph No. 27. The Structure of Industry, p. 478.
[37] Idem. Price Behavior and Business Policy, pp. 131–134, 162.
[38] The composite consists of a simple unweighted average of five models: three 6-foot models, one 4-foot model, and one 8-foot model.
[39] However, the largest price reductions were made on "stripped" models, the sales of which were not pushed as vigorously as on other models. (T. N. E. C. Monograph No. 1, Price Behavior and Business Policy, pp. 154–158.)
[40] New York Times, February 21, 1941; Wall Street Journal, March 12, 1941.

TABLE 31.—*ELECTRIC REFRIGERATORS: Indexes of Manufacturers' Prices and Sales, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; sales—U. S. Department of Commerce, Survey of Current Business]

Year and month	Indexes (August 1939=100) of—		Year and month	Indexes (August 1939=100) of—	
	Prices [1]	Sales [2]		Prices [1]	Sales [2]
1939			*1940*—Con.		
August	100.0	100.0	November	91.9	84.3
September	100.0	77.2	December	88.9	121.6
October	100.0	65.5			
November	100.0	58.2	*1941*		
December	100.0	97.6	January	83.5	397.1
			February	83.5	378.3
1940			March	85.1	446.5
January	93.7	247.7	April	85.1	509.4
February	93.3	296.6	May	85.3	457.8
March	93.3	314.8	June	88.4	399.1
April	93.3	358.6	July	88.4	358.3
May	93.3	407.1	August	88.4	285.6
June	91.9	347.2	September	88.4	173.7
July	91.9	262.4	October	92.4	140.4
August	91.9	217.9	November	92.4	98.2
September	91.9	118.6	December	94.3	51.4
October	91.9	93.1			

[1] Average of 3 6-foot models, 1 4-foot model, and 1 8-foot model.
[2] Compiled by the Edison Electric Institute.

costs, reported by one company, was an advance from $4.77 to $5.98 per refrigerator. These increases were due to higher wage rates and to decreased labor productivity resulting from the employment of untrained workers.

A third upward pressure upon prices resulted from the increase in consumer demand. The threatened scarcity of raw materials, such as steel, chrome, plastics, and rubber, engendered a fear of further price rises and eventual drastic curtailment of production. In addition, during the summer of 1941 there was a rush to purchase refrigerators before September 1, when the installment credit regulations of the Federal Reserve Board became effective,[41] and before the new excise tax of 10 percent (an increase of 4½ percent over the previous rate) was levied.[42]

In June 1941, after the third price increase in 6 months, Price Administrator Henderson sent a letter to 16 producers of refrigerators, who manufactured approximately 97 percent of the industry's output. In this letter he stated:

> We are deeply concerned over the fact that the price of refrigerators has risen considerably during recent months. If such price increases continue in this and other industries, the inevitable result will be inflation and demoralization not only in your industry but throughout the economic system.
>
> Pending a determination as to the justification of your recent increase, we request that you make no additional advances in prices until you have discussed the matter with us.[43]

After the issuance of this request, electric-refrigerator prices remained unchanged through the end of August. Although further advances were opposed by the Office of Price Administration,[44] two additional price increases were announced by refrigerator producers before the year ended. However, in December 1941 prices on the average were still materially below their level of August 1939.

[41] Federal Reserve Bulletin, September 1941, p. 845.
[42] New York Times, September 21, 1941.
[43] OEM Release No. PM 603, June 24, 1941.
[44] New York Times, November 1, 1941.

Sales of refrigerators in August 1941 were more than two and one-half times those of August 1939. The first intimation of materially decreased production came only in August 1941, when manufacturers were informed by the Office of Price Administration that in the near future production would be reduced to levels 30 to 50 percent below those of the preceding year.[45]

Early in September a meeting was held between a committee of the American Standards Association and the Consumer Division of the Office of Price Administration, the purpose of which was to formulate methods of reducing the amount of strategic raw materials consumed by the electric-refrigerator industry. This conference was followed on September 30 by an Office of Production Management order limiting the production per month of refrigerators from August 1 through December 31, 1941, to 56.8 percent of the average monthly factory sales in the 12 months ended June 30, 1941.

VACUUM CLEANERS

Prices of vacuum cleaners for the most part remained unchanged during the 2-year period from August 1939 to August 1941. By the summer of 1941, however, the supply had been drastically restricted, production for the remainder of the year had in many cases been sold up, and several leading manufacturers withdrew quotations. Prices of a few models which remained on the market during this period rose from 13 to 21 percent.

During the 2-year period the demand for vacuum cleaners advanced rapidly. Shipments, though sharply seasonal, rose markedly, and in August 1941 were 103 percent above those in August 1939. At that time, several manufacturers announced that their production for the next 3 or 4 months had been sold up, and that orders for delivery beyond 1941 were not being accepted.[46]

The vacuum-cleaner industry was particularly affected by defense requirements for metals. Aluminum, nickel, chromium, steel, and plastics became increasingly scarce. At first, the industry turned to the use of substitute materials, with some resultant increases in costs due to the technological changes required by the transition. With their supplies of aluminum drastically curtailed, vacuum-cleaner manufacturers turned to steel and plastics; nickel and chromium plating were replaced by painted steel.

However, as the defense program expanded, shortage of steel, plastics, and other metals developed, the effects of which were to curtail vacuum-cleaner production. By July 1941 several vacuum-cleaner companies were operating their departments intermittently with resultant increases in overhead costs.

During the remainder of the year the industry not only faced a drastic shortage of essential raw materials, but its facilities were being converted increasingly to defense production.

[45] Journal of Commerce, August 25, 1941.
[46] New York Times, August 21, 1941.

Chapter VI.—Chemicals and Allied Products

Summary

"Chemicals and allied products" is a broad group of commodities sold in a wide variety of markets. Because of the many special conditions affecting the supply and demand of these products, price movements during the Defense Period were highly diverse. These commodities range from the acids, solvents, and basic chemicals, used in heavy industry and munitions, to dyes and plasticizers, fertilizers and insecticides, drugs and pharmaceuticals, and the inedible fats and oils used in soaps and paints. Their producers include some of the largest corporations in the United States, and smaller domestic manufacturers of "specialties" as well as plantations in the Far East, South America, Africa, and the factories of Europe.

The broad expansion in demand, from the outbreak of war in Europe in August 1939 to December 1941, affected virtually all of these products. Consumption of industrial chemicals increased as the defense program developed, and the rapid rise in consumer purchasing power extended this demand to commodities entering primarily into civilian goods. Use of such diverse products as denatured alcohol and Java citronella doubled. At one time or another, scarcity was reported in markets for almost all chemicals and related products. It was therefore necessary to expand productive capacity materially for many commodities, and to seek substitutes or develop hitherto unused resources for other commodities previously obtained in abundance from abroad.

As a group, prices for all chemicals and allied products rose 23 percent between August 1939 and December 1941, about the same amount as the general level of wholesale prices measured by the Bureau of Labor Statistics comprehensive index (see table 32). The bulk of this advance, except for short-lived speculative increases in the fall of 1939, occurred in 1941.

Changes in prices varied greatly between individual products and groups. Quotations for products which came largely from abroad rose sharply, often increasing two- or three-fold between August 1939 and December 1941. These increases were particularly pronounced among imported drugs and pharmaceuticals and fats and oils. Prices of certain domestically produced industrial and other chemicals, for which existing sources of supply were inadequate also rose substantially—from 30 to 60 percent for some alcohols and solvents and a few of the coal-tar products.

On the other hand, prices of most basic industrial chemicals maintained the stability which normally characterizes their behavior in peacetime. In fact, one of the most striking characteristics of industrial chemical markets, particularly in contrast to World War I, was the remarkable price stability prevailing for most heavy chemicals. Quotations remained unchanged or increased very slightly during the Defense Period for sulphuric acid (used so widely in heavy industries that its consumption has been used as an index of business activity), hydrochloric and nitric acid, chlorine, carbon dioxide, phthalic anhydride, and other industrial chemicals. In some of these cases, capacity to produce was adequate for all needs arising during the Defense Period. In almost all cases, higher expenses for labor and

materials were significantly offset by lower unit costs for overhead. Where shortages developed, prompt Government priority control was simplified administratively by the fact that production was concentrated in one or a few large companies. The more essential wartime needs were satisfied effectively in virtually all cases. Prices of basic industrial chemicals as a group (i. e., chemicals and allied products, excluding drugs and pharmaceuticals, fertilizers, and fats and oils) rose only 6 percent between August 1939 and December 1941.

This 6-percent average increase was mainly due to sharp advances for certain alcohols and solvents, a few coal-tar products, and tanning materials. Thus, a tripling in the raw-material costs for molasses resulted in price advances during the Defense Period of 40 percent and more for butanol and other alcohols. Demand for these products rose greatly and there was a twofold increase in production from August 1939 to December 1941. Among coal-tar products, the need for expanding productive capacity of toluol, in order to meet requirements for explosives, resulted in a price increase of 32 percent. In markets for tanning materials, there was a 25-percent increase for quebracho, because of difficulty in obtaining shipments from abroad; supplies of domestically produced chestnut extract had to be increased substantially, and the price rose more than 30 percent.

The general picture of stability in markets for most industrial chemicals, however, must be qualified by reference to speculative activities which at times achieved considerable importance. While producers' quotations for many scarce products, such as phenol and formaldehyde, remained unchanged (or declined slightly) throughout the Defense Period, much higher prices were asked and received by certain jobbers and dealers who had purchased and hoarded large supplies. Special studies of the Bureau of Labor Statistics have shown that on the whole only a small part of total supplies passed through speculative channels. Nevertheless, many small or occasional consumers of some scarce chemicals, who lacked contracts with their producers, could have recourse only to speculators. Many regular buyers, who required additional supplies above those contracted for, were directed to similar channels. In the "resale" market thus created, prices boomed. For example, sales were at times reported for formaldehyde at 52 cents per pound, although producers' quotations actually declined during the Defense Period and were never greater than 5¾ cents. Similarly, oxalic acid was quoted by producers at 10¾ cents, but was purchased at resale for 23 cents per pound.[1] Before the Defense Period had ended with the attack on Pearl Harbor, the Office of Price Administration had made strenuous efforts to eliminate such speculative transactions.

Price increases for other subgroups comprising the general category of chemicals and allied products—fertilizer materials, drugs and pharmaceuticals, and fats and oils—were materially greater on the average than those for industrial chemicals. In the case of drugs and pharmaceuticals, the sharp advances occurred almost entirely for imported products. Supplies of some botanical drugs ordinarily obtained from Central Europe were cut off immediately after Poland was invaded. Expansion in the theater of war gradually cut off the major sources of some materials and many others were clearly

[1] See Indirect Price Increases, by Melville J. Ulmer (Monthly Labor Review, November 1942, p. 909).

threatened. Shipping costs—ocean freight rates and war-risk insurance—rose appreciably for some commodities. Cargo space grew extremely scarce, particularly for less essential pharmaceuticals, and quotations fluctuated wildly from day to day in response to military development. By December 1941 menthol (natural), ordinarily imported from Japan and China, sold for more than four times its prewar price. The price of tartaric acid, derived from raw materials (argols) shipped largely from Italy and Spain, rose 160 percent. There were correspondingly sharp increases for products of similar nature.

In general, these sharp advances were due only in small part to actual increases in shipping or other costs. In most cases, the principal factor appeared to be the competitive bidding of consumers for limited supplies which could not be replaced or which depended upon the uncertain and irregular arrival of shipments from abroad. Thus, less than 2 percent of the price increase for menthol was accounted for by higher ocean freight rates and war-risk insurance.

TABLE 32.—*CHEMICALS AND ALLIED PRODUCTS: Wholesale Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Wholesale-price indexes (August 1939=100) of—					
	All chemicals and allied products	Chemicals	Drugs and pharmaceuticals	Fertilizer materials	Mixed fertilizers	Inedible fats and oils
1939						
August	100.0	100.0	100.0	100.0	100.0	100.0
September	103.2	100.8	101.7	102.6	99.0	133.5
October	104.6	101.7	103.4	104.7	99.2	140.9
November	104.3	101.7	103.4	106.6	99.3	134.7
December	104.7	101.8	104.1	108.2	101.1	130.8
1940						
January	104.7	101.8	105.4	108.9	101.1	129.1
February	104.4	101.8	105.4	108.4	101.5	125.6
March	103.8	101.6	105.6	107.8	101.1	117.7
April	103.5	101.4	106.1	107.9	101.0	115.3
May	103.4	101.6	106.4	108.1	99.9	113.5
June	102.6	101.6	106.6	102.9	99.6	111.1
July	103.8	101.3	124.4	102.7	99.6	105.9
August	103.4	101.2	124.8	103.8	101.5	98.3
September	103.5	101.2	124.5	104.0	101.5	98.3
October	103.6	101.4	124.3	104.0	101.5	98.0
November	104.4	101.5	124.4	106.7	101.5	104.2
December	104.7	101.9	124.8	106.9	101.6	104.4
1941						
January	105.9	102.1	125.2	107.9	102.9	113.8
February	105.8	102.3	125.7	107.5	101.0	115.3
March	107.5	102.5	126.1	107.5	100.8	137.2
April	110.2	103.1	126.5	108.4	100.1	170.7
May	112.7	103.6	128.0	108.5	100.1	198.5
June	112.9	104.1	129.6	106.7	101.0	198.5
July	114.8	104.2	129.7	113.0	105.3	206.2
August	115.9	104.4	129.8	115.0	105.5	215.0
September	117.8	105.3	135.4	116.9	105.5	224.9
October	120.9	105.5	161.0	118.0	106.0	230.0
November	121.0	105.4	159.8	118.0	108.9	228.8
December	123.0	105.7	159.5	118.8	111.1	251.0

For certain other imported products, price trends were influenced by the use of substitutes or the expansion of domestic production, as in the case of camphor, or by the accumulation of stock piles, as in the case of quinine. Prices of most domestically produced drugs and

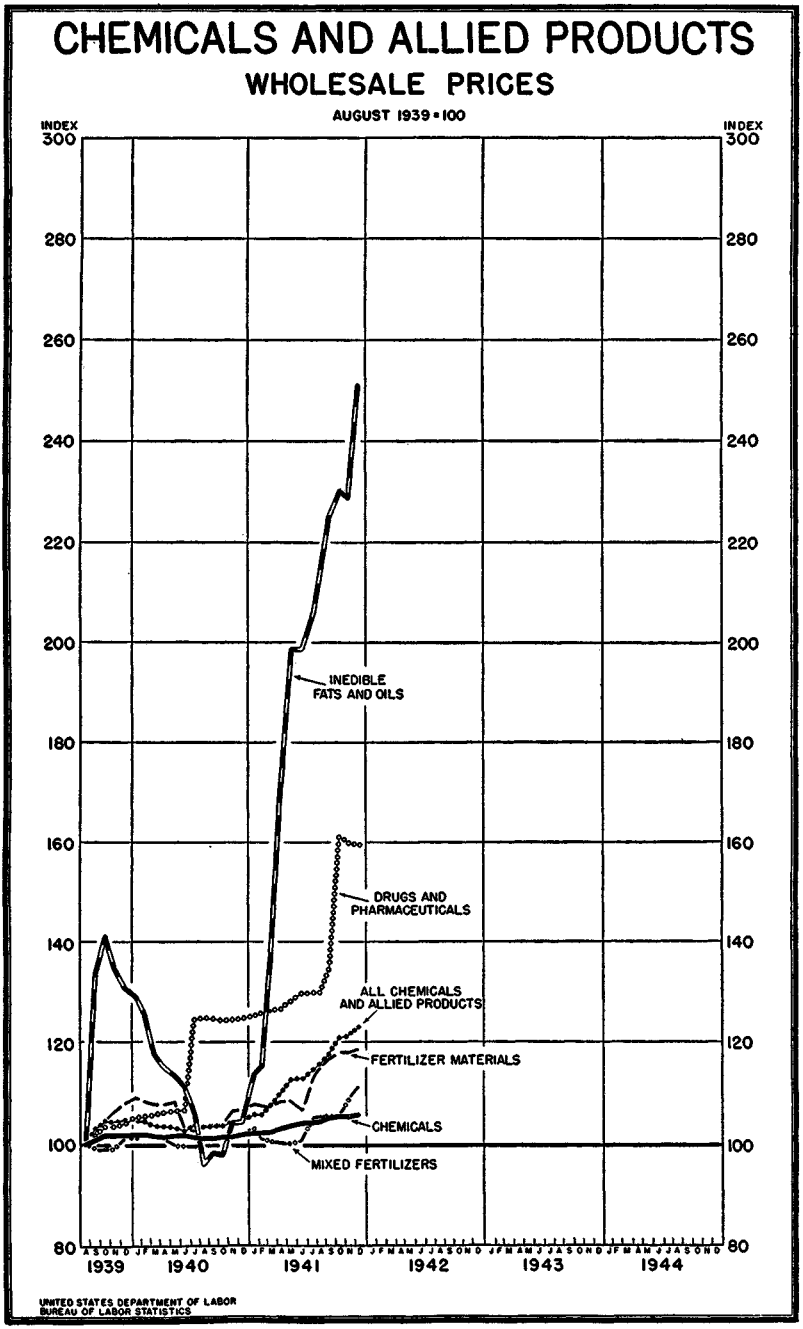
pharmaceuticals, such as acetylsalicylic acid, citric acid, and ether, were stable. The average price increase for all drugs and pharmaceuticals from August 1939 to December 1941 was 60 percent.

Sharp price advances for inedible fats and oils occurred both for imported and domestically produced commodities—the average increase during the Defense Period being 150 percent. The chief reason for these increases was a huge expansion in demand coupled with a relatively inelastic supply. Occasional speculation, specifically censured by Price Administrator Henderson in the summer of 1941, aggravated the situation.

Stocks of tallow declined 16 percent between December 1940 and December 1941, as the use of this fat in soap manufacture and in other industries rose more rapidly than production. While imports of some commodities (such as sulfur olive oil) were cut off almost entirely before the end of 1940, arrivals of other products (palm and coconut oil, for example) continued in considerable amounts throughout the Defense Period, although shipments were uncertain and more expensive and did not keep pace with rapidly expanding demand. Use of all inedible fats and oils in the soap industry—the chief consumer—increased 30 percent between 1939 and 1941. In the summer of 1939 prices of fats and oils generally had been at a relatively low level, but this situation was soon reversed. Before the attack on Pearl Harbor prices of most inedible fats and oils had doubled or tripled. The price of glycerine—a byproduct of the soap industry and important for explosives—rose 63 percent.

In the case of fertilizers, price increases on the average were considerably more moderate, despite the development in 1941 of urgent requirements for additional supplies. The supply of nitrogenous materials was seriously affected, not only by greater use in agriculture, but because of the rapidly growing need of fixed nitrogen in explosives. The disparity between supply and demand was further widened by the fact that a relatively small but important proportion of United States requirements were obtained from abroad, and the shortage of shipping space and other factors interfered with deliveries. The sharpest price increases were for the relatively less important organic materials, such as fish scrap and animal tankage. Among the important inorganic materials, ammonium sulfate prices advanced 12 percent; Chilean nitrate, 14 percent; cyanamid, 57 percent; and phosphate rock and superphosphates, about 25 percent. The price of anhydrous ammonia remained unchanged during the Defense Period, at levels prevailing since 1934, and by December 1941 supplies of this chemical had been diverted in large part to use in explosives. Quotations for potash and synthetic sodium nitrate were also stable or only slightly higher. As a group, prices of fertilizer materials rose 19 percent between August 1939 and December 1941; prices of mixed fertilizers rose 11 percent.

Because of their strategic importance, Government regulations came early in markets for chemicals. In the summer of 1941, priority or allocation orders were issued for 30 of the leading chemicals or chemical groups, including acetone, anhydrous ammonia, boric acid, chlorine, cresylic acid, formaldehyde, phenol, potassium compounds, toluene, ethyl alcohol, and other alcohols. Maximum price regulations during the Defense Period were issued for formaldehyde (because of the speculatively high "resale" prices), ethyl alcohol, wood alcohol, butyl



alcohol, acetic acid, acetone, glycerine, paraffin wax, and fats and oils. Informal agreements for stable prices were reached with producers of ammonium sulfate and cotton linters.

In general, the price advance for chemicals and allied products as a group, during the Defense Period, appears relatively limited when compared with developments in the same markets during World War I. Against the over-all increase of 23 percent from August 1939 to December 1941, prices of chemicals and allied products during a comparable period of World War I rose 93 percent.

A major reason for this difference is at once apparent. In 1914 the American chemical industry was in its infancy and was dependent in whole or in great part upon imports for its supply of many basic new materials and finished chemicals. Although an important start had been made before the war ended, domestic production of such products as coal-tar derivatives, anhydrous ammonia, potash, and sulfur were either nonexistent or far below the levels of self-sufficiency since attained. Thus, it is typical that up to December 1941 in World War II prices of sulfuric acid and hydrochloric acid remained unchanged, potash rose less than 1 percent, and phenol declined 4 percent; while prices of these commodities rose 50, 54, 1,052, and 633 percent, respectively, during a comparable period in World War I.

Industrial Chemicals

ALCOHOLS AND SOLVENTS

Demand for the chief alcohols and solvents was peculiarly sensitive to the growth of the defense program. Used in numerous industries, their production ordinarily rises as general business activity expands. Superimposed on this general increase in demand was that arising from the many direct or indirect military uses to which these chemicals are put—for example, in smokeless powder and in plastics. In most cases, this situation led to sharp price increases, amounting for some products to more than 60 percent. The main exception to this rule was the price of synthetic methyl alcohol (methanol) and its derivative formaldehyde. Quoted prices of these chemicals declined slightly through the Defense Period, principally because of the economies realized from mass production.[2]

With the outbreak of war in Europe, the price of ethyl alcohol was raised immediately, and those of some of the other products in this group soon afterward. The advance for ethyl alcohol was attributed by producers to the supply situation for blackstrap molasses, the principal raw material for this chemical. Supplies of molasses available for Americans at primary points in Cuba and Puerto Rico were greatly reduced, since certain European nations had purchased heavily just prior to the German attack on Poland. Some vessels ordinarily used to transport molasses were taken off that service and freight rates were advanced the equivalent of ½-cent per gallon.[3] Price increases for ethyl alcohol amounted to 14 percent in September and an additional 9 percent in October, excluding the Federal tax

[2] Synthetic-methanol production was begun commercially in the United States in 1927. At that time the price of "natural" methanol or wood alcohol was 82 cents per gallon. Synthetic methanol was introduced on the market at 68 cents per gallon, and its price has been reduced steadily as its production has been developed and expanded. In 1940 about 90 percent of the methanol produced in the United States was synthetic.

[3] Chemical and Metallurgical Engineering, February 1940, p. 85.

(which amounts to about 95 percent of the total price of the non-denatured alcohol).[4] These advances were soon reflected in the price of denatured alcohol (pure ethyl plus denaturing agent), which advanced 14 percent by December 1939 and an additional 1 percent in January 1940. (See table 33.)

The temporarily tight supply situation for molasses also had the effect of increasing the quotation for butyl alcohol, which by January 1940 rose to 29 percent above its pre-war level.

The price of acetone rose even more sharply. This commodity is obtained partly as a byproduct of butyl alcohol in the fermentation of molasses, and partly by synthesis from petroleum gases. Through the fall of 1939, demand for acetone from rayon manufacturers rose substantially. Because of its importance for this and many other purposes—as in the manufacture of smokeless powder, plastics, safety glass, dyestuffs, chloroform, etc.—the export demand for acetone was also great. Business firms in the Far East and South America, which formerly obtained supplies from Germany, directed their orders in large volume to the United States. According to one trade journal:

> This sudden expansion in demand both at home and from abroad put considerable pressure on producers who by that time were carrying very little reserve stocks. As this buying interest increased rather than diminished, an actual shortage developed which became more pronounced when foreign buyers started bidding frantically for supplies with total disregard for costs.[5]

The result was an advance in the price of acetone by December 1939, amounting to 35 percent. Moreover, according to trade reports, foreign purchasers were compelled to pay "approximately triple" the price paid on contract by domestic consumers.[6]

Through 1940, until the fall, there was some slackening in demand for almost all products in this group. Contract prices were adjusted downward for butyl alcohol and acetone and remained unchanged for ethyl and denatured alcohol. As business activity spurted in the fall, and defense plants got under way, this trend was reversed and the demand for alcohols and solvents grew steadily through 1941. From time to time scarcity was reported, and the problem of meeting important defense requirements, as well as less essential needs, grew more and more serious.

Although production of ethyl alcohol rose from a monthly average of about 18 million gallons in mid-1939 to about twice that amount in late 1941, stocks in warehouses declined from about 15 million gallons in December 1939 to approximately 8 million in December 1941. Similarly, production of denatured alcohol rose from a monthly average of between 7 and 9 to about 17 million gallons, but stocks declined from 1 million gallons in December 1939 to 0.7 million in December 1941.[7] (See table 34.) Meanwhile raw-material costs were increasing—between August 1939 and July 1941 the price of blackstrap molasses in New York had doubled and by December 1941 it had tripled.

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[4] The Federal tax on pure ethyl alcohol in August 1939 was $4.27½ per gallon; in July 1940 it was raised to $5.70, and in October 1941 it was further increased to $7.60 per gallon. In August 1939 the price of ethyl alcohol, 190 proof, was $4.49 and in December 1941, $7.92½. Succeeding discussions refer to the price excluding the Federal tax, since most ethyl alcohol sold for industrial purposes (i. e., for denaturation) is tax free.

[5] Chemical and Metallurgical Engineering, February 1940, p. 85.

[6] See, for example, Oil, Paint, and Drug Reporter, January 13, 1941, p. 48; and Journal of Commerce, May 19, 1941.

[7] U. S. Department of Commerce, Survey of Current Business, 1942 Supplement.

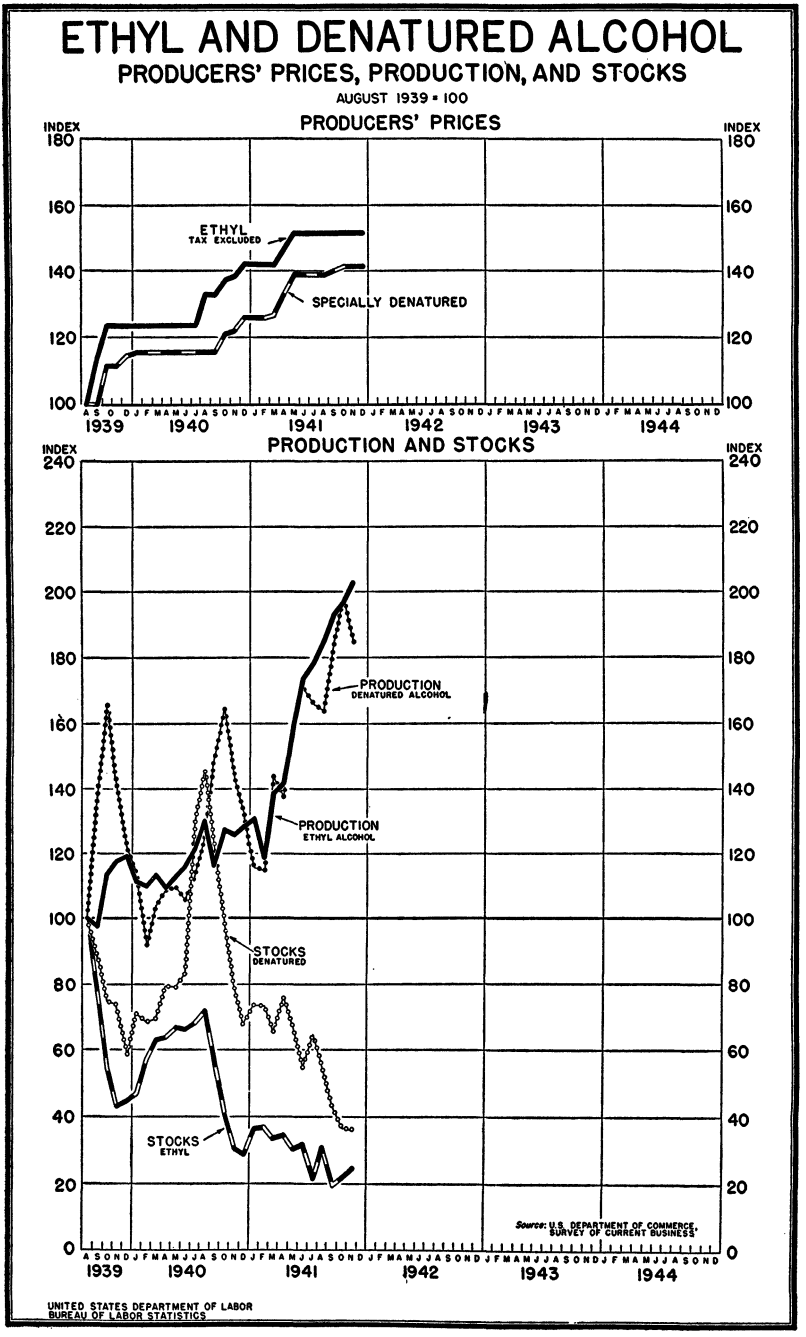
Price increases, from August 1939 to the peaks reached in the summer or fall of 1941, amounted to 51 percent for ethyl alcohol, 41 percent for denatured alcohol, 43 percent for butyl alcohol, and 63 percent for acetone. While these advances reflected changes in contract prices, at which the bulk of these chemicals is sold, small quantity purchasers or contract buyers who were compelled to supplement their supplies by buying "on spot," frequently paid much higher prices. Thus, in February 1941 the resale price of acetone was quoted at 10½ to 11 cents per pound, almost double the producer's contract quotation of 6 cents.[8]

Increases in contract prices for most alcohols and solvents during the Defense Period ended between May and September 1941, as a result of several Government regulations designed to insure orderly marketing of these products, adequate supplies for essential uses, and the maintenance of price stability. In July 1941 acetone was placed under export license control.[9] In August a priority order was issued for ethyl alcohol.[10] At the same time, OPACS announced that maximum price schedules were being prepared for several of the industrial solvents; producers, dealers, and purchasers were in the meantime requested to maintain prices at levels no higher than those prevailing on July 29. Effective September 15, formal ceilings were established for ethyl and denatured alcohol.[11] A month later, maximum prices were also fixed for acetone [12] and butyl alcohol.[13] Except in the case of butyl alcohol, maximum prices were set approximately at prevailing contract levels. For butanol the maximum price level exceeded current quotations because, according to the Price Administrator, "the OPA is attempting to stimulate the use of corn as a raw material to relieve the pressure on supplies of molasses. This use of corn involves somewhat higher costs to the producers."

As already indicated, quoted prices of methanol and formaldehyde declined. Methanol was in great demand for use in explosives and also in the manufacture of antifreeze preparations and for other purposes; in addition, through its derivative formaldehyde, it was used in the broadly exparding group of plastics which were being substituted more and more for the strategic metals. While scarcity developed early in the Defense Period for both products, producers' quotations between August 1939 and December 1941 were reduced 16 percent for synthetic methanol and 5 percent for formaldehyde.

Speculation interfered seriously, however, with the marketing of these commodities. Small or occasional users of formaldehyde were compelled to purchase from brokers and dealers and often paid prices many times producers' contract quotations. Thus, in the summer and fall of 1941, when formaldehyde was quoted at 5½ cents per pound, transactions were reported in the "resale" market at as much as 52 cents per pound.[14] Similarly high resale prices were reported paid for methanol. Scarcity was intensified by the need for partly diverting methanol-plant facilities to the production of synthetic ammonia

[8] Journal of Commerce, February 15, 1941.
[9] Export Control Schedule No. 12, effective July 23, 1941.
[10] General Preference Order M-30, Ethyl Alcohol and Related Compounds, issued August 25, 1941, effective August 28, 1941.
[11] Price Schedule No. 28, Ethyl Alcohol, issued September 15, 1941, effective September 15, 1941.
[12] Price Schedule No. 36, Acetone, issued October 20, 1941, effective October 27, 1941.
[13] Price Schedule No. 37, Normal Butyl Alcohol, issued October 20, 1941, effective October 27, 1941.
[14] See, for example, Oil, Paint and Drug Reporter, June 9, 1941, p. 17, and July 28, 1941, p. 43; Journal of Commerce, September 17, 1941. The high prices paid at resale in September were not necessarily in violation of the maximum price schedule for formaldehyde, which became effective in August. The ceiling did not apply to sales in quantities under 45 pounds.



for munitions. Manufacturers of explosives complained that they were unable to get adequate shipments of methyl alcohol because of the large proportion of the reduced supply going to producers of antifreezes, plastics, and other less essential products.

TABLE 33.—*ALCOHOLS AND SOLVENTS: Producers' Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939=100) of producers' prices of—						
	Alcohol					Formaldehyde	Acetone, chemically pure
	Ethyl, ex-molasses (190 proof)		Specially denatured, formula No. 1 (190 proof)	Methyl, pure synthetic	Butyl, normal		
	Including Federal tax	Excluding Federal tax					
1939							
August	100.0	100.0	100.0	100.0	100.0	100.0	100.0
September	100.7	114.0	100.0	100.0	100.0	100.0	100.0
October	101.1	123.3	111.3	100.0	114.3	100.0	139.5
November	101.1	123.3	111.3	100.0	114.3	100.0	139.5
December	101.1	123.3	114.4	100.0	125.7	100.0	134.9
1940							
January	101.1	123.3	115.4	100.0	128.6	100.0	134.9
February	101.1	123.3	115.4	100.0	128.6	100.0	134.9
March	101.1	123.3	115.4	97.3	128.6	100.0	137.2
April	101.1	123.3	115.4	90.1	128.6	94.8	139.5
May	101.1	123.3	115.4	90.1	128.6	94.8	139.5
June	101.1	123.3	115.4	90.1	128.6	94.8	139.5
July	132.9	123.3	115.4	90.1	114.3	94.8	116.3
August	133.3	132.6	115.4	90.1	114.3	94.8	116.3
September	133.3	132.6	115.4	90.1	114.3	94.8	116.3
October	133.5	137.2	120.5	90.1	114.3	94.8	116.3
November	133.6	138.1	121.5	90.1	114.3	94.8	116.3
December	133.7	141.9	125.6	90.1	128.6	94.8	139.5
1941							
January	133.7	141.9	125.6	90.1	128.6	94.8	139.5
February	133.7	141.9	125.6	90.1	128.6	94.8	139.5
March	133.7	141.9	126.2	90.1	128.6	94.8	139.5
April	134.0	146.5	133.3	90.1	128.6	94.8	139.5
May	134.2	151.2	138.5	90.1	128.6	94.8	139.5
June	134.2	151.2	138.5	90.1	140.0	94.8	158.1
July	134.2	151.2	138.5	90.1	142.9	94.8	162.8
August	134.2	151.2	138.5	90.1	142.9	94.8	162.8
September	134.2	151.2	140.0	87.1	142.9	94.8	162.8
October	176.5	151.2	141.0	84.1	142.9	94.8	162.8
November	176.5	151.2	141.0	84.1	142.9	94.8	162.8
December	176.5	151.2	141.0	84.1	142.9	94.8	162.8

In May 1941 methanol and formaldehyde were placed under priority control,[15] and in August an OPACS order restricted the use of plastics made from formaldehyde for nonmilitary purposes.[16] At the same time a maximum price schedule was established for formaldehyde, with a ceiling at approximately the quotation fixed by leading producers.[17] In October a price ceiling was fixed for natural methanol,[18] but because of the cooperation of producers in keeping prices down, none was established for the synthetic product. In 1940, natural methanol accounted for only 10 percent of domestic consumption, but its production was expanded somewhat in 1941 because of the great demand.

[15] Priorities Critical List, as revised to May 1, 1941, issued May 8, 1941.
[16] General Preference Order M-25, Formaldehyde, issued August 21, 1941, effective August 23, 1941.
[17] Price Schedule No. 21, Formaldehyde, issued August 20, 1941, effective August 20, 1941.
[18] Price Schedule No. 34. Wood Alcohol, issued October 3, 1941, effective October 10, 1941.

Price increases for natural methanol from August 1939 to October 1941, when the ceiling was established, amounted to 33 percent.

TABLE 34.—*ALCOHOLS: Production and Stocks, August 1939–December 1941*

[Source: U. S. Department of Commerce]

Year and month	Denatured (thousands of wine gallons)		Ethyl (thousands of proof gallons)		Methanol	
					Production (thousands of gallons)	
	Production	Stocks, end of month	Production	Stocks warehoused, end of month	Crude (wood, distilled)	Synthetic
1939						
August	9,191	2,007	18,539	32,918	360	2,679
September	12,625	1,776	18,104	25,913	405	2,640
October	15,181	1,496	20,963	17,975	463	4,158
November	13,065	1,481	21,793	14,168	480	4,612
December	11,145	1,170	22,080	14,614	434	4,184
1940						
January	10,398	1,417	20,652	15,279	457	3,453
February	8,460	1,366	20,381	18,773	447	3,782
March	9,524	1,392	20,983	20,676	507	3,463
April	9,994	1,591	20,218	20,957	442	3,486
May	10,037	1,586	20,948	21,921	437	3,409
June	9,707	1,662	21,423	21,799	426	3,426
July	10,442	2,605	22,457	22,394	390	3,852
August	11,510	2,919	24,094	23,645	408	3,788
September	13,694	2,450	21,559	18,483	366	3,549
October	15,098	1,980	23,595	13,471	463	4,408
November	13,154	1,586	23,347	10,018	468	4,440
December	12,215	1,360	23,762	9,503	484	3,913
1941						
January	10,610	1,468	24,224	11,963	450	3,882
February	10,556	1,465	22,029	12,166	435	3,618
March	13,186	1,313	25,655	11,127	455	4,174
April	12,652	1,511	26,248	11,330	463	4,241
May	14,714	1,329	29,651	10,000	466	4,423
June	15,678	1,095	32,224	10,392	436	4,663
July	15,242	1,293	33,021	7,108	417	4,725
August	15,065	1,089	34,299	10,117	450	5,006
September	16,908	861	35,757	6,491	487	5,085
October	18,185	740	36,393	7,143	502	5,416
November	16,965	724	37,541	8,038	529	5,104
December	(1)	(1)	(1)	(1)	557	5,663

[1] Data not available for publication.

COAL-TAR PRODUCTS

Coal-tar derivatives are used in explosives, plastics, drugs, dyes, protective coatings, and in many other civilian and military products. Despite increased demands during the period from August 1939 through December 1941, producers' prices of the coal-tar products, as a group, displayed considerable stability, although at times sharp speculative advances occurred in the "resale" market. Relief from the pressure of greater demand was provided by increased supplies, reflecting the high activity of coke ovens. Supplies of toluene produced from crude petroleum also appeared in the market. Nevertheless, demand for some of these coal-tar products proved to be greater in relation to supply than for others and thus divergent price trends appeared. While the prices of toluene and naphthalene increased, those of benzene and phenol decreased, and the prices of creosote oil and coal tar remained substantially unchanged.

At the outbreak of hostilities in Europe, it was anticipated that a price boom would occur particularly in toluene, a basic ingredient of the explosives TNT and DNT. Speculative demand, coupled with greater legitimate requirements, created a strong pressure for a price increase. As stocks of this commodity dwindled,[19] the change finally came in December 1939 when contract prices (tank-car quantities) were revised upward from 22 cents per gallon to 26½ cents, an advance of more than 20 percent. Market conditions during the period were described by the Oil, Paint and Drug Reporter (October 9, 1939) as follows:

> Demand exceeded available production, and sellers continued to restrict acceptance of any new business, but endeavored to make shipments against orders on contract which were booked some time in advance. Current production was sold up for at least a month ahead.

During the same period, prices of benzene, phenol, and naphthalene remained unchanged. No immediate large increases in demand for these products developed and supplies increased with expanding activity in the coal and gas industries. Even the domestic supplies of naphthalene proved adequate, despite the fact that a substantial proportion of domestic requirements were ordinarily provided by imports from Germany, Russia, and the Netherlands. The situation may be typified by the following comment from the Oil, Paint and Drug Reporter of December 4, 1939, relating to benzene:

> Industrial consumption has kept pace with higher production during the past few months. October output was estimated at 10 percent over the 9,435,000 gallons in the preceding month and 7,100,000 gallons in October 1938. For the first 10 months of this year output aggregated 79,704,000 gallons, compared with 55,941,000 gallons in the corresponding period a year ago.

By May 1940 no shortages of coal-tar products, with the exception of toluene, existed. Supplies of benzene were so ample that "when small quantities of toluol[20] [were] available for export, sellers [demanded] that buyers take 5 gallons of benzol for each gallon of toluol offered."[21] As a result, the new price schedules, effective July 1, 1940, indicated an advance of 2 cents per gallon for toluene and a decrease of 1 cent per gallon for benzene. The price of 1-degree nitration toluene thus became 28½ cents per gallon, and remained at this level, 29.5 percent above the pre-war figure, until December 1941. On the other hand, the tank-car price of pure benzene, 90-degree nitration, was further reduced by 1 cent in August 1940. These decreases, resulting from the fact that supplies continued to be "more than sufficient to take care of all domestic and export business,"[22] carried the price of benzene to 14 cents a gallon, a level 12.5 percent below that of August 1939. (See table 35.)

The price of phenol (U. S. P. grade, drums, carlots) was also reduced from 13 to 12 cents per pound in November 1940. Supplies of this product were more than ample,[23] especially in view of the fact that no

[19] Oil, Paint and Drug Reporter, September 11, 1939, p. 31.
[20] The terms toluol and toluene and benzol and benzene are used interchangeably.
[21] Chemical Industries, May 1940 (p. 620). "The few sales [of toluene] were [made] at prices almost double the domestic levels." (Oil, Paint and Drug Reporter, May 13, 1940 (p. 44). Also New York Times, June 20, 1940.) In April, the resale price of toluol, in drums, was 65 cents per gallon. (Journal of Commerce, April 22, 1940.)
[22] Journal of Commerce, July 1, 1940, and August 26, 1940.
[23] In addition to supplies secured directly from coal-tar distillation, phenol is also secured by a synthetic process from benzene compounds. In 1940 the quantity of natural phenol produced totaled 25,967,560 pounds as compared with 72,187,520 pounds of the synthetic product. (U. S. Department of Commerce, Industrial Reference Service.)

active demand for its use in explosives had developed despite "the tight position in toluol." [24]

In mid-1940 steps were taken to increase the supply and control the distribution of toluene. Output from byproduct ovens was being increased as a result of expanding steel activity.[25] In addition, vast strides were made in the recovery of toluene from petroleum.[26] The Shell Oil Co., awarded a contract in August, produced its first barrel by December 11, 1940.[27] Other oil companies, including the Humble Oil & Refining Co., an affiliate of the Standard Oil Co. of New Jersey and the Universal Oil Products Co., were also awarded Government contracts to produce toluene.[28] In addition, the gas industry was supplying toluene in large quantities. Moreover, it was hoped that larger domestic supplies would be available as a result of the Presidential proclamation which placed toluene under export control, effective July 5. Finally, the industry itself was controlling the distribution of toluene by selling the bulk of its output direct to consumers.[29]

By the spring of 1941 the market for coal-tar chemicals had widened further. "With activity in plastics beginning to assume large proportions in view of their growing substitution for strategic metals," the demands for phenol and naphthalene increased. An expansion in the use of motor benzol and a broadening in the use of industrial grades, especially in dyes and solvents, also had a favorable influence on the market price structure.[30] In addition, the shortage of toluol diverted some phenol (a possible substitute) to the production of munitions. Thus the resale market price of phenol tended to increase, particularly as a result of inquiries made by Russia and Japan.[31] In order to conserve supplies and prevent their possible flow into hostile countries, naphthalene and phenol were placed under export license control, effective April 15.[32] This, however, did not ease the pressure on prices in the resale market because of the expanding use of plastics. In March resale lots of phenol were quoted at 15 to 15½ cents per pound,[31] and by May a range of 20–21 cents prevailed, even though the producers' prices had remained unchanged at 12 cents per pound.[33]

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[24] Journal of Commerce, July 1, 1940.

[25] Journal of Commerce, September 7, 1940. In addition, it was announced in the Journal of Commerce, October 25, 1940, that "the Bethlehem Steel Co. is installing a new battery of coke ovens at Lackawanna, N. Y., which should provide additional supplies of toluol, benzol, and other coal-tar chemicals for defense and ordinary chemical needs. The Koppers Co. also has been awarded a contract for the installation of 25 Koppers-Becker type byproduct coke ovens at the plant of the American Rolling Mill Co. at Hamilton, Ohio."

[26] While it had been known for some time that toluene could be produced from petroleum, the peacetime demand for toluene had not warranted the expenditures of the large sums necessary for establishing plants employing this method. (Chemical and Metallurgical Engineering, August 1940.)

[27] The annual capacity of the Houston, Tex., plant is 2,000,000 gallons. (New York Times, December 12, 1940.)

[28] Journal of Commerce, September 7, and October 25, 1940. The Humble plant has an annual capacity of 25,000,000 gallons.

[29] Chemical Industries, November 1940.

[30] Journal of Commerce, March 3, 1941.

[31] Idem, March 17, 1941.

[32] Idem, March 31, 1941.

[33] Idem, May 7 and May 14, 1941. In April phenol sold in the resale market at a range of 24–25 cents a pound. (Journal of Commerce, April 14, 1941.)

TABLE 35.—*COAL-TAR PRODUCTS: Indexes of Producers' Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939=100) of producers' prices			
	Toluene, 1° nitration	Naphthalene, domestic crude, 74°	Phenol, U. S. P.	Benzene, pure, 90% nitration
1939				
August	100.0	100.0	100.0	100.0
September	100.0	100.0	100.0	100.0
October	100.0	100.0	100.0	100.0
November	100.0	100.0	100.0	100.0
December	120.5	100.0	100.0	100.0
1940				
January	120.5	100.0	100.0	100.0
February	120.5	100.0	100.0	100.0
March	120.5	100.0	100.0	100.0
April	120.5	100.0	100.0	100.0
May	120.5	100.0	100.0	100.0
June	120.5	100.0	100.0	100.0
July	129.5	100.0	100.0	93.8
August	129.5	100.0	100.0	91.3
September	129.5	100.0	100.0	87.5
October	129.5	100.0	100.0	87.5
November	129.5	100.0	95.4	87.5
December	129.5	100.0	92.3	87.5
1941				
January	129.5	100.0	92.3	87.5
February	129.5	100.0	92.3	87.5
March	129.5	100.0	92.3	87.5
April	129.5	100.0	92.3	87.5
May	129.5	100.0	92.3	87.5
June	129.5	100.0	95.4	87.5
July	129.5	100.0	96.2	87.5
August	129.5	100.0	96.2	87.5
September	129.5	100.0	96.2	87.5
October	129.5	111.1	96.2	87.5
November	129.5	111.1	96.2	87.5
December	131.8	111.1	96.2	87.5

Throughout 1941, defense requirements, particularly for plastics, munitions, solvents, and dyestuffs, continued to stimulate the demand for coal-tar products. In June 1941, the producers' price of phenol was raised to within ½ cent of the August 1939 price of 13 cents a pound. Supplies of cresylic acid and naphthalene were sufficiently scarce to cause the appearance of these items on the Priorities Critical List of May 8, 1941 [35] and phenol was added to the list on June 10, 1941.[36] As the year progressed, supplies of the coal-tar products became even more inadequate to meet the rising demands. Fears were expressed that despite expansions in output capacities, shortages of naphthalene, and its derivative, phthalic anhydride, as well as phenol, toluene, benzene, and cresylic acid, would occur.[37] Supplies of phenol, in particular, were scarce as a result of the large quantities being exported to Russia for use in the manufacture of the explosives, picric acid, and dinitrophenol. Threats of strikes in the captive coal mines also tended to disturb buyers. In October the producers' price for crude naphthalene (tank-car quantities) was raised from $2.25 to $2.50 per hundred pounds, and late in December toluene and benzene were both raised 1 cent per gallon, bringing the Bureau

[35] Release No. PM 380, May 8, 1941.
[36] Release No. PM 526, June 10, 1941.
[37] Journal of Commerce, July 15, July 21, October 1 and November 10, 1941; Oil, Paint and Drug Reporter, August 18, 1941, p. 32.

of Labor Statistics average prices for that month to 29 and 14½ cents, respectively. At the same time, resale market prices rose sharply, a range of 40 to 60 cents a pound being reported for phenol in late November.[38]

The expanding defense needs for coal-tar products, even before December 7, 1941, necessitated further governmental controls. In August both phenol and toluene were brought under full priority control,[39] and in November an amendment [40] to General Preference Order M–27 tightened the control over distribution of phenol and placed all shipments under the direction of the Director of Priorities.

HEAVY CHEMICALS

As previously described,[41] prices of other industrial chemicals—particularly those classified traditionally as "heavy" chemicals—remained generally stable during the Defense Period. There were no quoted price changes between August 1939 and December 1941 for sulfuric, nitric, acetic, and hydrochloric acids, carbon dioxide, chlorine, soda ash, and caustic soda, among others. The few changes which did occur were mostly moderate. The price of oxalic acid, used in the manufacture of an explosive (pentaerythritol) and for other industrial purposes, rose 5 percent. Other exceptions to the general rule of stable prices were those for salt cake, which advanced 31 percent, and for calcium chloride, which declined 7 percent. The sale of certain quantities of some of these products at higher than quoted prices in a "resale" market has already been noted.[42]

Fertilizer Materials

As many as 22 elements have been considered necessary for plant growth, but only three—nitrogen, phosphorous, and potassium—are applied regularly and in large amounts to the soil. These elements are also used in the manufacture of munitions. Nitrogen is the basis of all explosives; phosphorous is the active ingredient in incendiary bombs and tracer bullets; and potash is essential to the manufacture of optical glass, of gas masks, and of high-octane aviation gasoline by the Houdry process. Only in the case of nitrogen, however, did the military demand constitute a sufficiently large factor to be a serious threat to the adequacy of fertilizer supply.

Although there were some substantial price advances during the Defense Period, particularly for the less important products, increases for most of the basic fertilizers were moderate. As a group, prices of fertilizer materials rose 19 percent.

The chief nitrogen fertilizer materials used in the United States are natural sodium nitrate, imported from Chile; synthetic sodium nitrate, produced domestically from anhydrous ammonia; and ammonium sulfate, a domestic coke-oven byproduct. Less important nitrogenous materials are calcium cyanamid, produced in Niagara Falls, Ontario, and organics such as cottonseed meal, animal tankage, and fish scrap. The chief phosphorous-containing materials are phos-

[38] Journal of Commerce, November 25, 1941.
[39] General Preference orders: Schedule M–27, August 30, 1941—Phenol; Schedule M–34, August 28, 1941—Toluol.
[40] Release No. PM 1538, November 10, 1941.
[41] See pp. 141–142.
[42] See p. 142.

phate rock (containing bone phosphate of lime) and superphosphate (made by treating phosphate rock with sulfuric acid). The principal potassium fertilizer materials are muriate, sulfate, and kainit of potash and manure salts.

During peacetime the United States imports slightly more fertilizer materials than it exports, although the trend during the past 20 years has been increasingly toward self-sufficiency. The principal imports ordinarily are Chilean sodium nitrate, other nitrogenous materials, and potash salts; the principal exports, phosphate rock and phosphate compounds. During the Defense Period there was a sharp rise in requirements for all of these materials, both for agricultural and military purposes. In the case of phosphates and potash, supplies proved plentiful, although mining capacity for the latter product had to be expanded materially. In the case of nitrogenous fertilizers, the supply problem was more difficult, although no serious shortage developed during the Defense Period.

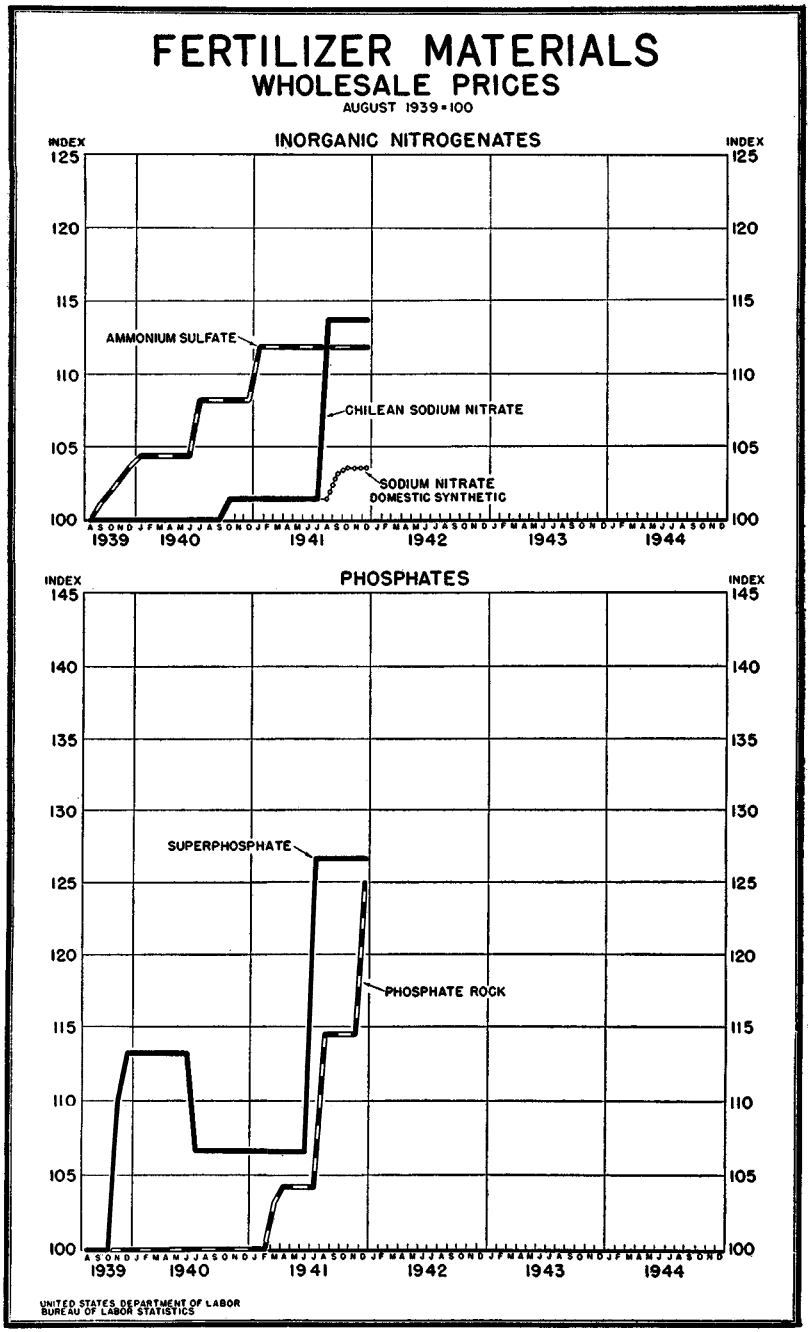
Following the outbreak of war in August 1939, "scare" buying was a feature in markets for all fertilizers, and some trade publications wrote prematurely of shortages.[43] Prices of some products moved upward. With demand heavy, producers of superphosphates announced a 13-percent price increase in November. Prices of organic nitrogen materials,[44] used both as feeds and as fertilizers, also rose sharply; by December 1939 cottonseed meal had increased 39 percent, fish scrap 17 percent, and animal tankage 36 percent. However, all other prices remained unchanged except for their usual seasonal movements, and thus no general upturn developed. (See table 36.)

Early fears of a shortage subsided through 1940 and, except for inorganic nitrogenates, prices weakened. Fertilizer consumption was approximately unchanged and demands arising directly from the war were not up to expectations. In July 1940, about half of the initial price rise for superphosphates was withdrawn. By the end of the year, prices of organic nitrogenates were all below their 1939-fall peaks. Prices of phosphate rock remained unchanged and a slight increase for manure salts raised the average price of potash less than 1 percent—its only price change during the entire Defense Period.

Demand was considerably stronger in markets for important inorganic nitrogenates for several reasons. Export sales of ammonium sulfate were heavy; for nitrogenous materials as a whole, shipments abroad in 1940 were 54 percent above 1939. Heavy Canadian purchases of cyanamid, produced in Ontario, cut deeply into American imports. Military demand for inorganic nitrogen compounds was very much greater than for other fertilizer materials.

In price schedules announced by fertilizer producers for the year beginning in July 1940, seasonal discounts for ammonium sulfate usually allowed during the summer and autumn months were omitted and $1 was added to the spot market price; quotations were 8 percent above the pre-war level. Moreover, a speculative "export" market for this product developed in which sales were reported at $41 per ton against a domestic contract price of $28.[45] A 5-percent increase for cyanamid was announced in April. Smaller price increases of 1½ percent were announced in October for sodium nitrate—both imported and domestic—to cover increased costs of burlap bagging.

[43] Oil, Paint and Drug Reporter, November 6, 1939.
[44] Organic nitrogenates ordinarily account for about 10 percent of all the nitrogenous materials used as fertilizer.
[45] The American Fertilizer Handbook, 1941, p. 20.



In 1941 nearly all fertilizer prices increased, except that for potash. Consumption in the Southern States rose 8 percent above levels of 1940 and 1939. The quantity of phosphate rock marketed reached an all-time high. Phosphate rock exports during the first 9 months of the year, the only period for which figures can be published, were 9 percent above those for all 12 months of 1940. This huge demand enabled producers of phosphate rock and superphosphates to raise prices 25 percent and 27 percent, respectively, above pre-war levels.

TABLE 36.—*FERTILIZER MATERIALS: Indexes of Wholesale Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939=100.0) of wholesale prices of—								
	Organic nitrogenates			Inorganic nitrogenates				Phosphates	
	Fish scrap, ground [1]	Cotton-seed meal, prime [2]	Tankage, animal [3]	Ammonium sulfate, domestic	Sodium nitrate		Cyanamid calcium, pulverized [4]	Phosphate rock [5]	Superphosphate, domestic [6]
					Chilean crude	Domestic synthetic			
1939									
August	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
September	104.7	116.1	128.4	101.1	100.0	100.0	100.0	100.0	100.0
October	117.2	118.0	140.3	101.9	100.0	100.0	100.0	100.0	100.0
November	117.7	132.4	128.4	102.8	100.0	100.0	100.0	100.0	110.0
December	117.2	138.9	136.0	103.7	100.0	100.0	100.0	100.0	113.3
1940									
January	118.2	143.8	137.9	104.4	100.0	100.0	100.0	100.0	113.3
February	119.2	141.6	130.8	104.4	100.0	100.0	100.0	100.0	113.3
March	119.2	141.6	121.6	104.4	100.0	100.0	100.0	100.0	113.3
April	117.2	146.2	118.5	104.4	100.0	100.0	102.7	100.0	113.3
May	117.2	142.2	122.8	104.4	100.0	100.0	104.6	100.0	113.3
June	117.2	118.2	85.8	104.4	100.0	100.0	104.6	100.0	113.3
July	117.2	119.9	88.1	108.2	100.0	100.0	104.6	100.0	106.7
August	101.0	132.1	90.5	108.2	100.0	100.0	104.6	100.0	106.7
September	101.0	124.4	100.0	108.2	100.0	100.0	104.6	100.0	106.7
October	101.0	115.2	101.4	108.2	101.4	101.4	104.6	100.0	106.7
November	102.6	137.7	105.7	108.2	101.4	101.4	104.6	100.0	106.7
December	109.1	138.4	100.0	108.2	101.4	101.4	104.6	100.0	106.7
1941									
January	118.7	133.9	100.0	111.9	101.4	101.4	104.6	100.0	106.7
February	117.2	119.4	98.1	111.9	101.4	101.4	104.6	100.0	106.7
March	118.2	115.5	97.2	111.9	101.4	101.4	104.6	103.1	106.7
April	121.2	120.4	107.1	111.9	101.4	101.4	104.6	104.2	106.7
May	124.7	117.3	109.5	111.9	101.4	101.4	104.6	104.2	106.7
June	125.3	123.5	111.9	111.9	101.4	101.4	104.6	104.2	106.7
July	130.3	145.0	126.1	111.9	101.4	101.4	144.1	104.2	126.7
August	131.7	160.8	136.0	111.9	113.8	101.4	149.1	114.6	126.7
September	132.8	189.6	142.7	111.9	113.8	103.1	155.3	114.6	126.7
October	137.0	170.6	147.4	111.9	113.8	103.6	156.9	114.6	126.7
November	141.4	174.2	147.4	111.9	113.8	103.6	156.9	114.6	126.7
December	142.4	177.5	147.4	111.9	113.8	103.6	156.9	125.0	126.7

[1] 11–12 percent ammonia, 15 percent bone phosphate.
[2] 41 percent protein.
[3] 10–11 percent ammonia, 15–20 percent bone phosphate, domestic fertilizer grade.
[4] 27 percent ammonia, 22 percent nitrogen.
[5] Florida land pebble, 72 percent minimum.
[6] 16 percent basis, run of pile.

While no question was raised concerning adequacy of phosphate supplies, actual tightness in the supply of nitrogenous fertilizers was growing. At the beginning of the year military requirements of the explosives industry were estimated at considerably more than

the current domestic production of synthetic nitrogen,[46] part of which was still being used for fertilizers.[47] New plants for synthetic production were not scheduled for completion until 1942. Efforts to increase substantially Chilean nitrate imports met with the obstacle of shipping space. Imports of cyanamid (which, however, normally accounts for only about 6 percent of the total United States nitrogen supply) continued to decline because of heavy purchases of this material in Canada.

TABLE 37.—*FERTILIZER: Consumption and Imports; FERTILIZER MATERIALS: Production and Deliveries, August 1939–December 1941*

[Sources: Ammonium sulfate production—U. S. Bureau of Mines; other statistics—U. S. Department of Commerce]

Year and month	Fertilizer consumption in Southern States	Sodium nitrate imports	Ammonium sulfate production	Superphosphate production	Potash deliveries
	Thousands of short tons				
1939					
August	43	11	51	279	41
September	154	12	53	305	57
October	190	47	59	407	75
November	108	74	60	417	73
December	187	67	61	405	65
1940					
January	409	63	60	431	58
February	675	30	54	359	13
March	1,536	96	56	351	8
April	1,125	100	55	338	6
May	329	89	58	340	8
June	122	70	59	327	27
July	32	92	61	324	39
August	61	59	62	361	38
September	142	42	63	327	51
October	189	39	64	404	46
November	105	32	63	398	54
December	182	31	64	425	41
1941					
January	518	38	65	408	52
February	762	45	58	385	36
March	1,365	94	65	436	30
April	1,390	100	58	397	24
May	258	47	61	419	13
June	104	31	61	374	58
July	58	18	63	383	41
August	71	36	62	379	49
September	134	76	62	364	40
October	168	(1)	63	413	56
November	186	(1)	61	420	54
December	267	(1)	66	488	60

[1] Data not available for publication.

Before the year ended, increases above pre-war levels amounted to 57 percent for cyanamid, 14 percent for Chilean nitrate, and 12 percent for ammonium sulfate. In the case of the latter product, additional advances were halted by a letter to producers from Price Administrator Henderson in May;[48] the Administrator requested the maintenance of prevailing prices and declared that a formal

[46] Current Market Situations, Chemical Nitrogen (U. S. Bureau of Labor Statistics), March 25, 1941.

[47] Anhydrous ammonia is the principal domestic source of synthetic fixed nitrogen and is the form most suitable for the production of nitric acid and explosives. In the United States about 40 percent of the annual consumption of nitrogen was supplied by the domestic synthetic industry in 1939 and 1940. About half of this was then employed for fertilizers and the rest in explosives and other industrial uses. Other forms of inorganic nitrogen—ammonium sulfate, Chilean nitrate, and cyanamid—are used mainly as fertilizers.

[48] Office for Emergency Management, Release No. OPACS—PM 457, May 26, 1941.

price ceiling would be imposed unless speculation on "export" sales was discontinued. The price of synthetic sodium nitrate rose to 4 percent above the August 1939 level because of higher costs of burlap bagging. The price of anhydrous ammonia, however, continued to be quoted at levels prevailing since 1934. For organics, advances between August 1939 and December 1941 were 42 percent for fish scrap, 78 percent for cottonseed meal, and 47 percent for animal tankage.

At the time of the attack on Pearl Harbor the chief problem for fertilizers remained the supply of nitrates; however, this problem was based mainly on prospective difficulties. Fortunately, production of ammonium sulfate rose about 29 percent in 1941 over 1939 levels, as the steel industry expanded output, though the rate of increase tapered off as capacity production was approached. In addition, production of synthetic nitrogen before the year had ended rose considerably more than was originally estimated. In July 1940, exports of nitrogenous fertilizers were placed under license control and were restricted materially. Despite temporary periods of scarcity, all essential needs for nitrogen during the Defense Period—as well as for the other fertilizer materials, of which there was a more plentiful supply—appear to have been met.

Inedible Fats and Oils

The inedible fats and oils discussed in this section are used mainly in the manufacture of soap,[49] and except for tallow and its derivatives, are obtained principally from abroad. In August 1939, the price levels for most of these commodities were relatively low. Thus, when the war began in Europe, quotations for copra, tallow, and castor, coconut, and sulfur olive oil (foots) were at their lowest levels since 1934. Partly because of this factor, price increases for this group of commodities during the Defense Period were great, averaging 150 percent from August 1939 to December 1941. Contributing to this increase were import difficulties, the relative inelasticity of the tallow supply, widespread speculation at certain times, and a huge increase in demand.

The initial increases in the fall of 1939 were spectacular. In one month, from August to September, the price of tallow rose 44 percent; copra, 31 percent; coconut oil, 43 percent; and olive oil foots, 32 percent (see table 39). These advances were short-lived; they were based on speculative anticipations of shortages which actually did not materialize until 1941. By December 1939 there was an appreciable easing in quotations and in 1940 large supplies contributed toward keeping prices low.

Production of inedible tallow, most important soap fat,[50] was 18 percent greater in 1940 than in 1939 and 62 percent greater than in 1937. The total supply of crude coconut oil in 1940 was 10 percent greater than in 1939 and 35 percent greater than in 1937. There was also a gain over 1939 of 36 percent in the total supply of copra.[51]

[49] In 1939 and 1940 about 40 percent of all fats and oils consumed in the United States were used in foods, about 35 percent in soap, and the rest in paints and varnishes, medicinal and other products. (Special Bureau of Labor Statistics study on fats and oils, June 25, 1941.) The chief food fats—butter, lard, oleomargarine, soybean, corn, and olive oils—are discussed in the chapter on foods. Some of the oils used in paints and varnishes are discussed in the chapter on building materials.

[50] Tallow represents almost half of all the fats consumed in the manufacture of soap. However, tallow alone does not make a good soap. It must be used in conjunction with smaller quantities of other commodities. Thus, for a quick-lathering soap, an oil containing lauric acid is essential. Lauric acid is customarily obtained from oils such as coconut and palm kernel.

[51] Special Bureau of Labor Statistics study on fats and oils, June 19, 1941.

Meanwhile, activity in the soap industry failed to expand in accordance with original expectations. Sales in 1940, as reported to the American Soap and Grease Producers, declined slightly from the level of 1939.[52] By the summer or fall of 1940, prices of tallow, copra, and coconut oil had returned to, or were below, their pre-war levels.

The price situation for palm oil and olive oil foots in 1940 was somewhat different. Although fairly large supplies of palm oil had been entering the United States in the early part of the Defense Period, it had all been allotted to contract holders and no market quotations were made until January 1940. In that month the price of Sumatra palm in tank cars, f. o. b. New York, was quoted at 4.2 cents per pound. This price, however, was high compared with those prevailing for other oils and there were few buyers.[53] Accordingly, the price was lowered later and continued to ease through the last of the year.

In the case of sulfur olive oil, extension of the war in the Mediterranean gradually cut American imports from Greece, the principal normal source. Available supplies through 1940 grew progressively smaller and for the entire year were 4 percent below 1939. During the first 10 months of 1940, the price of olive oil foots remained from 20 to 40 percent above its pre-war level, and in November and December began to advance abruptly.

Prices of fats and oils advanced sharply throughout 1941, the upturn beginning in late 1940 for some products. In virtually all markets during this period, demand rose considerably faster than supply. In the soap industry, during the first half of the year, sales (in pounds) rose 35 percent above 1939 levels and 30 percent above the volume in the same period of 1940. Consumption of fats and oils, as a group, by the soap industry was 25 percent greater in 1941 than in 1940 (see table 38). Because of the sharp price increases, supplies available during the year rose for some products (such as coconut and palm oils), but for others (such as olive oil foots) shipments ceased almost entirely.

With demand booming, stocks in factories and warehouses in mid-1941 were 8 percent lower than at the same time in 1940 in the case of tallow, 13 percent lower for coconut oil, 16 percent for sulfur olive oil, 13 percent for palm oil, and so on. Throughout the year 1941 stocks of tallow declined by 16 percent, despite a substantial increase in production.

In addition to the spurt of activity in the soap industry, demand was further enhanced by expansion of fat and oil consumption in other industries. Thus, according to the Wall Street Journal of April 16, 1941:

> Soap makers and lubricant manufacturers are still scouring the country for tallow, supplies of which have been cut sharply by increased demand for lubricating oils and greases under the defense program. Moreover, the amount of tallow going into machinery oil has been increased. Formerly the oil had a 10-percent tallow base. It has now been stepped up to 20 percent.

By May 1941 the price of tallow had already advanced to 88 percent above its pre-war level (see table 39). Increases during the same period were 144 percent for copra, 146 percent for coconut oil, and 119 percent for sulfur olive oil. Palm oil sold at 31 percent above its level of

[52] Soap and Sanitary Chemicals, September 1941.
[53] Journal of Commerce, January 3, 1940 (p. 19), and February 6, 1940 (p. 7).

January 1940. Advances between August 1939 and May 1941 for tallow derivatives (such as oleic acid—52 percent higher) were considerably less than for tallow itself. Speculative activities were an important factor in the increase in prices during succeeding months. In August 1941, Price Administrator Henderson issued an order designed to curb these speculative practices, and declared:

> Supplies of fats and oils are ample, but because of speculation and hoarding over recent months, the specter of shortage has made its appearance. As a result, prices have been influenced artificially to the detriment of the public interest and the defense effort.
>
> Continued instability in the prices of these vitally important commodities can only serve to contribute to inflation.[54]

The order contained the following four "corrective measures":

1. Purchases of fats and oils purely for the purpose of speculative resale at a profit are prohibited. This provision does not apply to futures trading on organized commodity exchanges for hedging purposes or to purchases or sales in the course of recognized manufacturing and distributing functions.
2. Deliveries against forward purchases must be completed within 45 days of commitment. However, forward sales of crude oils by crushing mills are specifically excluded, as are forward sales of imported oils and fish oils.
3. "Guarantees" on the part of sellers of fats and oils or their products against future price declines are eliminated, with the exception that wholesalers, jobbers, and retailers are allowed to obtain such guarantees as regards their floor stocks.
4. A device sometimes employed to circulate fictitious price quotations in the trade is outlawed.[54]

TABLE 38.—*FATS AND OILS: Consumption by the Soap Industry, and Production and Imports for Selected Products, August 1939–December 1941*

[Sources: Consumption and import statistics—U. S. Department of Commerce; inedible tallow production—U. S. Department of Agriculture]

Date	Consumption (millions of pounds): All fats and oils by the soap industry	Production (millions of pounds): Tallow, inedible[1]	Imports (millions of pounds)			
			Copra	Coconut oil	Palm oil	Sulfur olive oil
1939	1,635	1,127	430	337	286	28
1940	1,707	1,375	615	371	225	24
1941	2,124	1,551	[2] 436	[2] 299	[2] 223	[2] 4

[1] Includes greases, excluding wool grease.
[2] Imports in 1941 are for the first 9 months only; data after September 1941 are not available for publication.

Although rumors of impending OPA ceilings resulted in market uncertainty from time to time, prices continued to advance despite the new restrictions on speculative purchases, and the upswing was accelerated as American participation in the war appeared more imminent. By December 1941, the price of inedible tallow had more than doubled when compared with the quotation prevailing in August 1939; the price of sulfur olive oil was more than 2½ times as great; prices of copra and coconut oil were more than triple their pre-war levels. For palm oil the increase from January 1940 to December 1941 amounted to 110 percent. Price ceilings for these products were not issued until a week after the attack on Pearl Harbor, when maximum prices were fixed at levels "not above those prevailing on November 26, 1941." [55]

[54] Office for Emergency Management, Release No. PM 1040, August 29, 1941.
[55] Office of Price Administration, Release No. PM 1796, December 13, 1941.

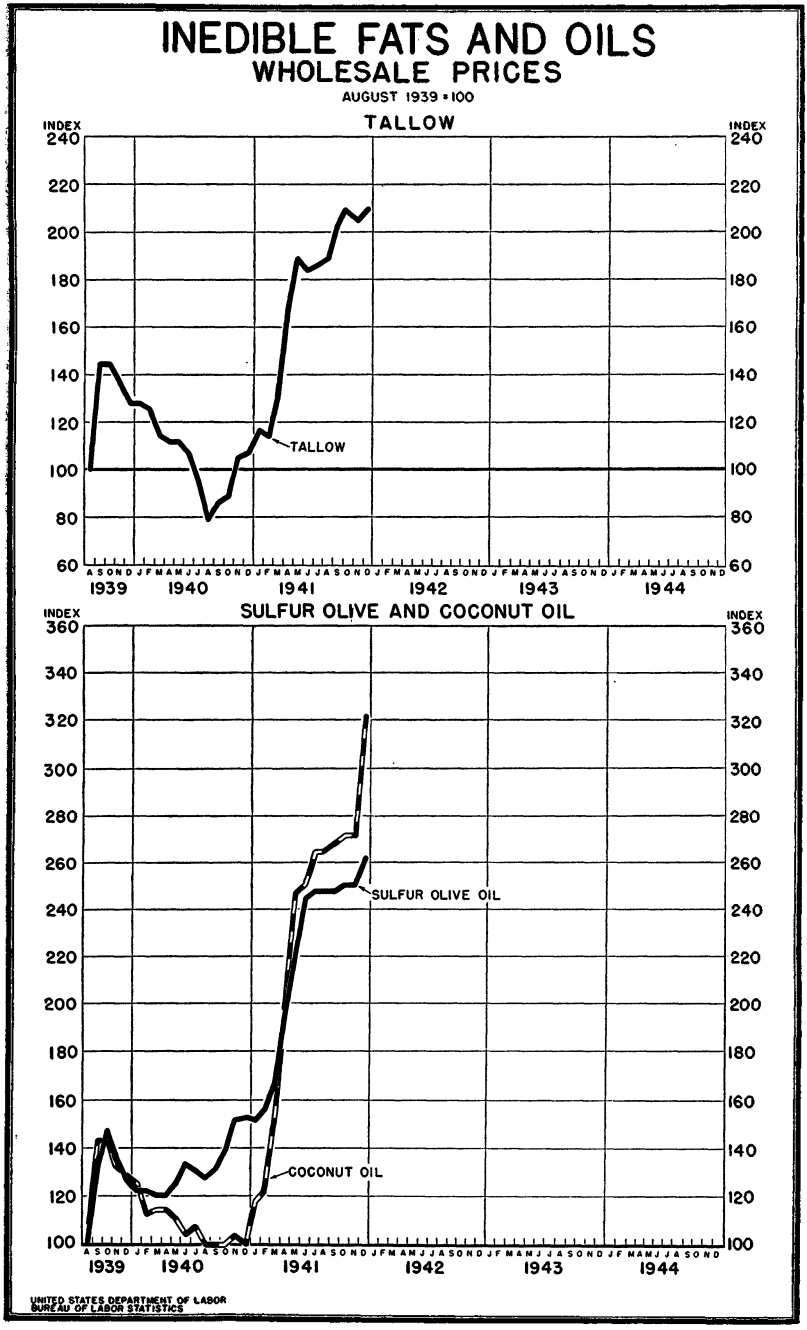


TABLE 39.—*INEDIBLE FATS AND OILS: Wholesale-Price Indexes by Product, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Wholesale-price indexes (August 1939=100) of—				
	Tallow, inedible [1]	Copra, Pacific Coast	Coconut oil, Manila, crude	Palm oil, Sumatra	Sulfur olive oil (foots)
1939					
August	100.0	100.0	100.0	(2)	100.0
September	144.2	131.2	142.9	(2)	132.4
October	144.2	143.8	142.9	(2)	147.1
November	137.2	131.2	132.1	(2)	135.3
December	127.9	125.0	128.6	(2)	126.5
1940					
January	127.9	125.0	125.0	100.0	122.1
February	125.6	112.5	117.9	95.2	122.1
March	114.0	106.2	114.3	81.0	120.1
April	111.6	106.2	114.3	71.4	120.1
May	111.6	100.0	110.7	69.0	125.0
June	107.0	100.0	103.6	64.3	133.8
July	95.3	100.0	107.1	61.9	130.9
August	79.1	87.5	100.0	59.5	127.9
September	86.0	87.5	100.0	54.8	130.9
October	88.4	87.5	100.0	54.8	139.7
November	104.7	87.5	103.6	54.8	151.5
December	107.0	87.5	100.0	54.8	152.9
1941					
January	116.3	106.2	117.9	54.8	151.5
February	114.0	112.5	121.4	54.8	155.9
March	130.2	150.0	153.6	88.1	167.6
April	167.4	187.5	200.0	116.7	194.1
May	188.4	243.8	246.4	131.0	219.1
June	183.7	237.5	250.0	138.1	244.1
July	186.0	231.2	264.3	154.8	247.1
August	188.4	250.0	264.3	169.0	247.1
September	202.3	256.2	267.9	183.3	247.1
October	209.3	256.2	271.4	185.7	250.0
November	204.7	250.0	271.4	190.5	250.0
December	209.3	318.8	321.4	209.5	261.8

[1] Packer's prime.
[2] No prices available prior to January 1940, January 1940=100.

Drugs and Pharmaceuticals

Prices of drugs and pharmaceuticals as a group rose very sharply during the Defense Period, the increase amounting on the average to 60 percent.[56] In general, however, there were two types of price movements within the group: (1) sharp increases, mainly for products affected by the import situation, such as menthol, tartaric acid, and nux vomica; and (2) relative stability for domestically produced drugs such as citric acid, acetylsalicylic acid and ether. There were, of course, exceptions to this rule. For example, the price of ethyl alcohol,[57] a domestic product and one of the chief ingredients of numerous medicinals, rose 77 percent, mainly as a result of an increase in the Federal tax on this commodity. On the other hand, a large Government stock pile had the effect of maintaining prices of morphine and codeine unchanged during the Defense Period, despite dependence on foreign sources of raw materials.

The rise in prices for imported commodities began as soon as Germany invaded Poland. Supplies of a few products ordinarily obtained from central Europe, such as botanical drugs, were shut off at once, and between August and September 1939 alone, prices advanced

[56] Commodities discussed in this section are the ingredients of drugs and pharmaceuticals rather than the finished products themselves. In most cases, price increases for finished drugs and pharmaceuticals were smaller.
[57] The price of ethyl alcohol excluding the Federal tax is discussed in the section on industrial chemicals.

125 percent for belladonna leaves and valerian root and 165 percent for henbane leaves. Supplies of other imports (for example, those from the Far East) became more expensive to obtain as ocean freight rates rose and war-risk insurance became necessary. This situation grew more serious as the theater of war was extended. Price movements became directly related to changes in the prospective availability of the various channels of trade. Moreover, speculators were extremely active and they, as well as usual consumers, accumulated huge stock piles. Thus, during the course of the Defense Period, large consumers of some products had stored supplies equivalent to 3 and 4 years' consumption.[58]

Through the fall of 1939, prices of then virtually unobtainable imports generally maintained their huge initial increase, and for the most part later moved constantly higher. For other imports, initial advances were much smaller but still substantial—for example, 8 percent for menthol, 11 percent for quinine sulfate, and 17 percent for camphor, between August and December 1939.

These advances continued in most cases through 1940. The Dutch surrender following the German invasion in May cut off the Netherlands as a source of quinine supplies and made the United States dependent upon direct shipments from the Netherlands East Indies for both cinchona bark and quinine.[59] Although the Trade Commissioner for the Netherlands assured importers that Java would satisfy all United States requirements,[60] the uncertainties involved in maintaining normal trade with the Indies were many. No sulfate was imported in May and only 256 ounces in June. Effective August 11, the Netherlands Indies placed an ad valorem export tax of 5 percent on cinchona bark and its derivatives, which was immediately reflected in the price of quinine.

Imports of synthetic camphor were expected from time to time, but only in April 1940 were shipments received—48,300 pounds—the first after August 1939. In the meantime, however, domestic production was being expanded by du Pont and two other concerns, and natural camphor continued to be received in fairly large amounts from Japan and China, although these shipments remained sporadic and uncertain. In the case of crude tartar and argols, supplies from Italy were shut off and shipments from Spain were not arriving according to schedule.[61] By December 1940, tartaric acid sold at 67 percent above its pre-war level. On the other hand, heavy shipments of natural menthol continued to arrive from Japan and domestic production of the synthetic product expanded. However, domestic production was dependent upon supplies of citronella imported from Java.

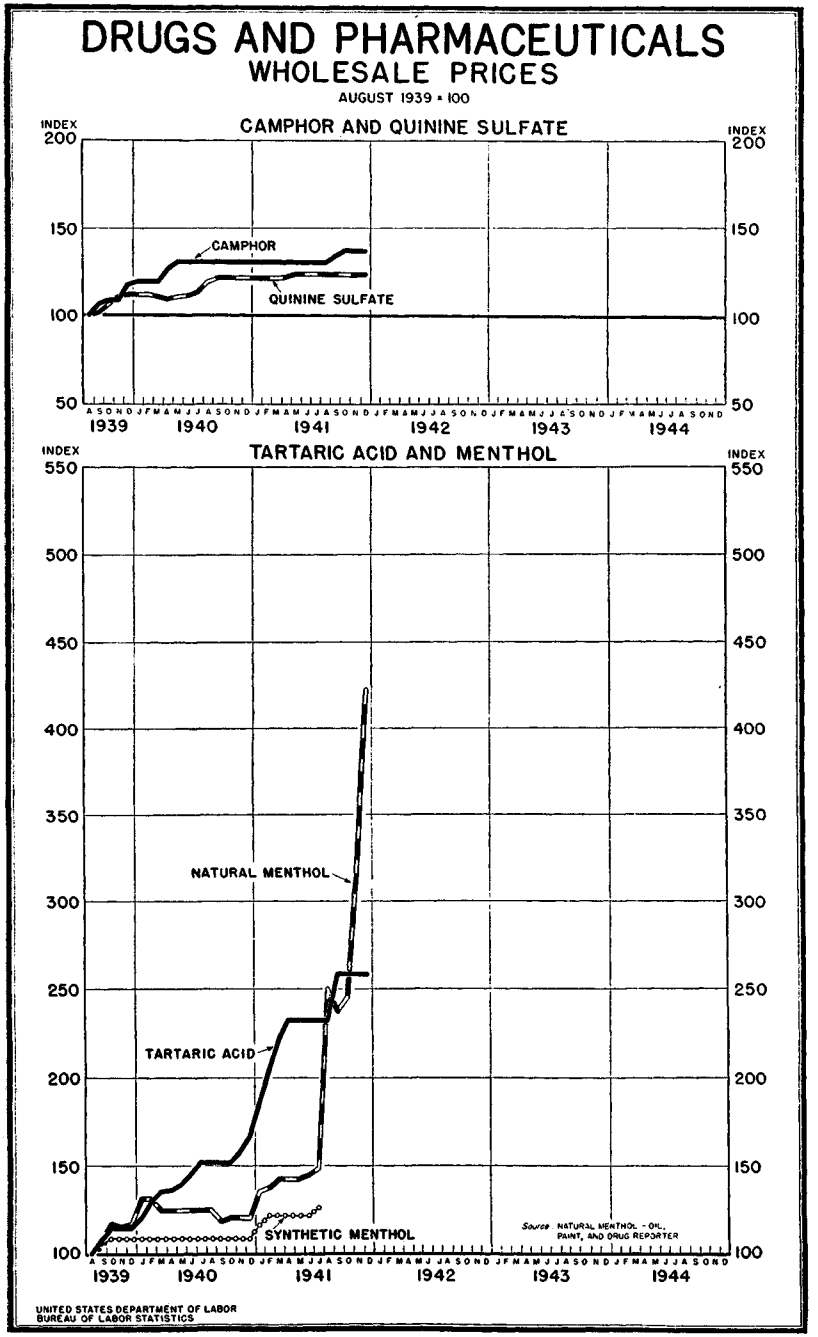
In 1941 there was an acceleration of the price advance. As tension with Japan mounted, prices of Far Eastern products generally skyrocketed. On July 25, Japanese credits in the United States were frozen, thus stopping shipments of menthol and camphor as well as many other products from Japan and making it more difficult to get

[58] The Supply of Menthol and Java Citronella, by Melville J. Ulmer and John H. Kaufmann, November 14, 1941 (U. S. Bureau of Labor Statistics), pp. 15–17.
The sharpest price increases for drugs and pharmaceuticals during the Defense Period were mainly the result of this general scramble for supplies. Thus, only 1¼ percent of the sharp advance in the price of menthol during the Defense Period was attributable to increased shipping costs. In the case of Java citronella, the raw material for producing synthetic menthol, the equivalent relationship was 3 percent. (*Ibid.*, p. 19.)

[59] A quinine factory had been in operation at Bandoeng, Java, for several years and capacity was to be increased.

[60] Journal of Commerce, April 10, 1940;

[61] Idem, December 27, 1940.



supplies from China. The price of imported menthol, which still supplied 80 percent of American needs, rose to $9.13 per pound in November 1941, about three times its pre-war price. Domestic menthol rose to $3.80 in July, as compared with $3.00 before the war, and in August the chief producer of this product withdrew formal quotations. The price of Java citronella had risen to 87½ cents per pound, compared with an August 1939 price of 27½ cents.

In the case of camphor and quinine sulfate, price advances were moderated by the domestic supply situation. United States stocks of quinine were considered sufficient for between 2 and 3 years' consumption, and imports from the Dutch East Indies were increasingly being supplemented by those from South and Central America.[62] Domestic production of synthetic camphor was expanding constantly.

TABLE 40.—*DRUGS AND PHARMACEUTICALS: Indexes of Wholesale Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939=100) of wholesale prices of—						
	Ethyl alcohol [1]	Acetyl-salicylic acid	Tartaric acid [2]	Camphor, synthetic, domestic [3]	Menthol		Quinine sulfate, USP X [4]
					Synthetic	Natural	
1939							
August	100.0	100.0	100.0	100.0	100.0	100.0	100.0
September	100.7	100.0	107.3	106.5	105.0	105.2	101.3
October	101.1	100.0	114.7	108.7	108.3	117.2	106.6
November	101.1	100.0	114.7	108.7	108.3	115.5	110.3
December	101.1	100.0	114.7	117.4	108.3	117.2	111.5
1940							
January	101.1	100.0	120.1	119.6	108.3	131.0	111.5
February	101.1	100.0	129.3	119.6	108.3	131.0	111.5
March	101.1	100.0	135.2	119.6	108.3	124.1	110.8
April	101.1	100.0	136.6	126.1	108.3	124.1	109.8
May	101.1	100.0	139.6	130.4	108.3	124.1	110.8
June	101.1	100.0	145.8	130.4	108.3	124.1	111.5
July	132.9	100.0	151.3	130.4	108.3	124.1	113.9
August	133.3	100.0	151.3	130.4	108.3	124.1	119.3
September	133.3	100.0	151.3	130.4	108.3	119.0	121.3
October	133.5	100.0	151.3	130.4	108.3	120.7	121.3
November	133.6	100.0	157.1	130.4	108.3	120.7	121.3
December	133.7	100.0	166.7	130.4	108.3	120.7	121.3
1941							
January	133.7	100.0	185.0	130.4	116.3	135.5	121.3
February	133.7	100.0	205.1	130.4	121.7	137.9	121.3
March	133.7	100.0	221.6	130.4	121.7	142.4	121.3
April	134.0	100.0	232.6	130.4	121.7	142.4	122.0
May	134.2	100.0	232.6	130.4	121.7	142.4	123.8
June	134.2	100.0	232.6	130.4	121.7	144.8	123.8
July	134.2	100.0	232.6	130.4	126.7	148.3	123.8
August	134.2	100.0	232.6	130.4	[5]	250.0	123.8
September	134.2	100.0	258.2	133.7	[5]	237.2	123.8
October	176.5	100.0	258.2	137.0	[5]	245.9	123.8
November	176.5	100.0	258.2	137.0	[5]	314.8	123.8
December	176.5	100.0	258.2	137.0	[5]	[6] 422.4	123.8

[1] 190 proof, ex-molasses, tax-paid.
[2] Crystals, granulated, powdered.
[3] Granulated, powdered.
[4] Japanese or Chinese, from Oil, Paint and Drug Reporter.
[5] No prices available after July 1940.
[6] December price mainly nominal.

By December 1941, advances above the August 1939 level amounted to 158 percent for tartaric acid, 37 percent for camphor, 24 percent for quinine sulfate, and for menthol (imported, natural) about 300 percent.[63] (See table 40.) Similarly, increases were very large for

[62] Oil, Paint and Drug Reporter, March 24, 1941.
[63] At the time of the attack on Pearl Harbor, several new firms were undertaking production of synthetic menthol in the United States and experiments were under way to use as a raw material domestically produced peppermint oil, or other more readily available "essential" oils, in place of Java citronella.

other imported products such as nux vomica, which advanced 105 percent during the Defense Period, and castor oil, which rose 47 percent.

On the other hand, markets for numerous other drugs and pharmaceuticals remained remarkably stable. Prices of acetylsalicylic acid, citric acid, salicylic acid, chloroform, codeine, morphine, and others remained unchanged during the Defense Period. Quotations for opium rose only 10 percent, for iodine 14 percent. Relative stability in these cases was due either to satisfactory domestic production, as in the case of citric acid; to the availability of sufficient imports, as in the case of iodine from Chile; or to the accumulation of satisfactory stock piles, as in the case of opium.

Aside from the rise in prices of imports, a large part of the average advance for all drugs and pharmaceuticals during the Defense Period was attributable to price changes for ethyl alcohol. Because of its importance this product is "weighted" very heavily in the Bureau of Labor Statistics index.[64] Between August 1939 and December 1941 the Federal tax on this product, which amounts to about 95 percent of the total price, was raised twice, and accounted in the main for a 77-percent price increase.[65]

[64] As of January 1941, ethyl alcohol accounted for about 60 percent of the aggregate value of all products included in the Bureau of Labor Statistics wholesale-price index of drugs and pharmaceuticals.

[65] The tax was $4.27½ per gallon in August 1939, and was raised to $5.70 in July 1940 and to $7.60 in October 1941. In October 1941 the price of ethyl alcohol, 190 proof, was $7.92½.

Chapter VII.—Fuels

Summary

The increase in the price of fuels during the Defense Period was relatively moderate, the average wholesale price[1] rising 15 percent between August 1939 and November 1941, as compared to a corresponding advance of 23 percent in wholesale markets generally.

After the outbreak of war in Europe, the price of fuels rose approximately 4 percent between August and November 1939, a sharp movement for this generally stable group of commodities. Higher prices for fuel oil and gasoline in the East, resulting from sharp advances in tanker rates from the Gulf Coast, were largely responsible for the advance. The price of fuels then fell by more than this amount, remaining slightly below its pre-war level during the spring and summer of 1940. In October 1940, however, when minimum prices were established for the first time under provisions of the Bituminous Coal Act, the average price of fuels rose slightly above its pre-war level. It then remained relatively stable until the following May when substantial price increases for bituminous coal, following the miners' strike and the wage increase of April 1941, initiated a steady upward movement in the composite price of fuels for the remainder of the Defense Period. In March 1941, the average price was only 1 percent higher than in August 1939; by November it had advanced to 15 percent above that level.

Each of the various fuels participated in the advance; bituminous coal rising least and fuel oil most. The net increases for typical grades of fuels discussed in this chapter follow:

	Percent of increase
Bituminous coal, prepared sizes	14
Anthracite, chestnut size	20
Crude oil, Oklahoma-Kansas	25
Gasoline, national tank-car average	19
Fuel oil, light	34
Fuel oil, heavy	29

These price advances were due in large part either to increases in manufacturing, mining, and railroad activity which swelled demand for the industrial fuels—principally bitiminous coal and heavy fuel oil—or to the simultaneous rise in consumer purchasing power which led to greater purchases of gasoline, anthracite, and light fuel oil. Although both types of demand, industrial and domestic, started expanding with the beginning of the National Defense Program in the summer of 1940, it was not until the spring of 1941 that prices of fuels began their sustained advance. This delayed rise may be attributed partly to the conditions of excess capacity which for years had characterized the bituminous-coal, anthracite, and crude-oil industries. It was not until demand for fuels had been strengthened by almost a year of rapidly increasing defense activity that fuel markets were strong enough to support a sustained price advance.

[1] This composite index is a weighted average of the 16 published price series of the fuels discussed in this chapter: Bituminous coal, anthracite, crude oil, gasoline, and fuel oil. It omits the series on byproduct coke, electricity, and gas, of which the latter two are broad realization figures that tend to move inversely to the rates actually charged, reflecting the changing relationship between the volume of industrial and domestic sales.

The price increases would probably have been even further delayed had it not been for the curtailment of output and the establishment of minimum prices by various Government bodies. Minimum prices for bituminous coal, established under provisions of the Bituminous Coal Act, were put into effect for the first time on October 1, 1940. The establishment of this price floor—which, according to the terms of the Bituminous Coal Act, was set at a level approximately equal to average unit costs in the industry in 1936–37—resulted both in price increases and in greater purchases of higher priced coals, owing to changes in grade differentials.

Prices of both anthracite and crude petroleum were strengthened by limitations imposed on output. In the State of Pennsylvania, the center of anthracite mining, a voluntary plan of controlled output was put into effect in February 1940, and was accepted by nearly all of the industry's operators. Similarly, crude-oil production was limited by the operation of conservation measures in most of the oil-producing States. The "drastic" and "severe" curtailments of production imposed by State bodies during 1940 and the early part of 1941 were frequently cited by the trade press as a principal cause of strength in the crude-oil market.

Prices of fuels were also affected by wage increases and by higher transportation costs. Following the strike in the bituminous-coal mines during April 1941, hourly earnings in the industry were raised 16 percent, from an average of 88 cents per hour in March to $1.02 in June. Since the minimum prices had been set in October 1940 at a level approximately equal to total unit costs as of 1936–37, and costs had declined between 1936–37 and 1940, the wage increase did little more than offset the decline which had taken place in costs. Nevertheless, extensive increases in prices were announced following the wage advance.[2]

Higher transportation costs were a further source of price increases in fuels, particularly gasoline and fuel oil. Widespread fluctuations in tanker rates between Gulf ports and the Atlantic Coast were a principal cause of price changes for these products. The tanker-rate increases, especially toward the end of the period, reflected partly the shortage of shipping space owing to the transfer of tankers to other areas, but they also were a means by which the delivered price of gasoline on the Atlantic Coast was advanced. Thus, between August and December 1939, before any important tanker shortage had developed, tanker rates for gasoline were raised from 15 to 52 cents a barrel; and in the fall of the following year they were increased from 18 cents in September to 65 cents in December, despite the fact that during this same period the Gulf Coast price was actually declining.

Finally, prices of fuels were directly influenced by weather conditions. The severe and prolonged winter—December 1939 and January and February 1940—swelled the demand for household fuels, especially fuel oil; at the same time, however, the market for gasoline was materially weakened by reduced automobile driving.

The over-all increase of 15 percent in the price of fuels between August 1939 and November 1941 was less than half of the advance which took place in the average price of fuels during the corresponding

[2] Wage and Price Structure of the Bituminous-Coal Industry, by Witt Bowden (Monthly Labor Review, August 1941).

period of the previous war; between July 1914 and October 1916 prices of fuels rose 39 percent.

Immediately following the beginning of conflict, fuel prices in the first war began to fall, whereas in this war they moved moderately upward. Seasonal declines during the spring and summer of 1915 and of 1940 carried the prices somewhat below their pre-war positions. Thus, after 1 year of conflict fuel prices were 13 percent below their pre-war level in the first period and 2 percent below in the second. Thereafter prices advanced strongly in both war periods. The major increases during the first 2 years of World War I came at the end of 1915 and in the fall of 1916. In World War II, up to November 1941, most of the advance came in the last 6 months of the period.

The main reason for the substantially greater increase in fuel prices as a group during World War I was the sharp advance in prices of bituminous coal. A serious congestion in railroad traffic resulted in a shortage of coal in industrial centers, and prices rose in September and October 1916 to a point nearly 100 percent above their pre-war level.

Crude Oil

Prices of crude oil, with the exception of Pennsylvania grade, are relatively stable, the major oil companies generally leaving the "posted prices" which they pay for crude unchanged for months at a time, After rising from 89 to 96 cents per barrel between August and September 1939, the price of a typical grade of crude oil (Oklahoma-Kansas, 33 to 33.9 degrees, well) remained at the latter level until April 1941, when it rose to $1.01 as demand increased. Further advances brought the price in June to $1.11, where it remained for the remainder of the Defense Period.

At the outbreak of the war in Europe, producers had just completed a major effort to obtain higher prices by reducing the size of crude stocks. During the first 15 days of August 1939, States which were members of the Interstate Oil Compact Commission—Texas, Oklahoma, Kansas, New Mexico, Colorado, and Michigan—shut down their crude-oil production. Thus, total domestic crude output fell from 111 million barrels in July to 81 million in August. This action was taken as a response to a price reduction instituted in August by one large buyer and immediately followed by all other major oil companies.[3]

As a consequence of this action, stocks of refinable crude in the United States dropped from 271 million barrels in July 1939 to 238 million in August; prices then advanced from 89 cents a barrel in August (Oklahoma-Kansas, 33.0 to 33.9 degrees) to 96 cents in September (see table 41).

After the outbreak of the war, the industry increased its production in the expectation of larger orders, particularly from foreign sources. Thus, in October, output advanced to 114 million barrels, the highest level of the year. However, the war actually brought with it no material increase in the demand for petroleum in 1939 and most of 1940.

[3] Appearing before the special oil subcommittee of the House Interstate and Foreign Commerce Committee on February 8, 1940, Mr. A. Andreas, State geologist and member of the Oil Conservation Commission of New Mexico stated that the shut-down was due solely to the price reduction.

These large stocks were a depressing force upon the price of crude petroleum throughout 1940. Stocks of refinable crude rose steadily from 231 million barrels in October 1939 to 262 million in May 1940, remaining around the latter level for the rest of the year (see table 41). At the same time the large stocks of gasoline resulted in price reductions of the motor fuel which in turn constituted a depressing force upon the price of crude oil. In February 1940, it was reported that because of the weakening of the gasoline market, refiners would "be under increasing pressure to obtain their crude at lower cost. It has been demonstrated repeatedly that a stable price structure for crude cannot be sustained while low prices are being received for the major refined product." [4]

This pressure of supply was aggravated especially in the early part of the year by the high levels of production maintained in the State of Illinois, which did not have pro-ration control. When in the third week of February production in the Illinois field reached a daily average of 408,000 barrels, causing the Nation's aggregate output to move upward, the New York Journal of Commerce (February 21, 1940) stated:

> Long a source of worry to the other large oil-producing States, the rising production rate in Illinois is leading some observers to believe that if the production there is not checked, the crude-oil price structure throughout the Southwest may become undermined.

In the summer of 1940 a general reduction of crude-oil prices appeared imminent. The fall of France and the closing of the Mediterranean seriously curtailed American exports. Exports of crude petroleum, which had declined from a monthly average of 6,187,000 barrels in the last half of 1939 to 4,403,000 barrels in the first half of 1940, dropped still further to 4,098,000 barrels in the last half of 1940; in the last quarter of 1940 exports averaged only 3,716,000 barrels a month.

During the third week of July two petroleum companies actually lowered their buying prices in North Texas, "and fear was expressed in many quarters that a general crude-oil price-cutting movement might develop." [5]

In an effort to avert "a wide open break in the price structure of the petroleum industry," two members of the Texas Railroad Commission on July 17, 1940, asked the Governor of Oklahoma to hold a meeting of the Interstate Oil Compact Commission "to weigh the current crisis in the industry" and "to consider the need for a further cut in the production of oil." [5]

Although no shut-down was ordered, a general price reduction did not materialize. The strengthening in the market was due primarily to a marked increase, beginning in August 1940, in the domestic demand for petroleum products. As estimated by the United States Department of Interior, total domestic demand, rose from 110 million barrels in July to 113 million barrels in December, a sharp rise in the demand for fuel oil during the latter months more than offsetting a decline for gasoline. This upward movement, carried the monthly level of demand by September above that of production, the first time that this had occurred, except in January 1940, since the outbreak of the war. (See chart, page 175.)

[4] Journal of Commerce, February 1, 1940.
[5] Idem, July 18, 1940.

In addition, the market was strengthened by a decline in Illinois production which in mid-August dropped below the 400,000 barrel mark after reaching an all-time peak of 518,000 barrels late in June.[6] This decline was due primarily to a drop in the output from shallower formations and was regarded as "a helpful factor" to the crude-oil market.

The market was also aided by a drastic curtailment in the output of the Venezuelan oil industry, controlled in large part by two American major oil companies. Venezuelan production and exports, which had been running close to 600,000 barrels a day, were lowered in July to 450,000 barrels daily, the curtailment about equaling purchases made by France before its conquest.[7]

In the first 4 months of 1941, domestic demand for petroleum products, except for a brief decline in February, remained at the high levels attained during the last part of the previous year. Production also remained relatively stable and well below the level of demand. As a consequence of the continuation of demand above production, stocks in March began an extended decline, falling from 266 million barrels in March to 250 million in August, and to 244 million in November, just before Pearl Harbor (see table 41).

TABLE 41.—*CRUDE PETROLEUM: Domestic Production, Demand, Stocks, and Producers' Prices, August 1939–December 1941*

[Sources: Production, demand, and stocks—U. S. Bureau of Mines; prices—U. S. Bureau of Labor Statistics]

Year and month	Production (thousands of barrels)	Demand (thousands of barrels) [1]	Stocks, end of month (thousands of barrels) [2]	Price (per barrel) [3]
1939				
August	80,865	110,007	238,479	$0.89
September	108,168	108,419	234,555	.96
October	114,198	114,066	230,854	.96
November	111,887	106,929	234,027	.96
December	114,810	107,933	238,910	.96
1940				
January	113,140	109,949	239,794	.96
February	108,668	103,038	244,417	.96
March	120,075	112,144	251,120	.96
April	116,045	107,975	258,066	.96
May	118,283	113,972	261,839	.96
June	111,690	109,485	261,971	.96
July	113,244	110,221	263,498	.96
August	110,523	110,228	264,252	.96
September	109,337	110,353	263,124	.96
October	113,418	111,441	263,856	.96
November	106,904	107,820	263,163	.96
December	110,520	112,614	264,079	.96
1941				
January	110,647	112,648	263,251	.96
February	100,791	101,592	264,432	.96
March	112,817	112,812	266,380	.96
April	111,080	112,750	266,012	1.01
May	116,976	120,965	262,111	1.04
June	115,027	118,991	259,075	1.11
July	118,251	123,783	255,378	1.11
August	121,354	127,778	249,620	1.11
September	119,446	125,338	246,111	1.11
October	126,145	(4)	243,735	1.11
November	123,355	(4)	243,679	1.11
December	128,293	(4)	246,884	1.11

[1] Apparent domestic consumption compiled from U. S. Department of Interior, Monthly Petroleum Statement.
[2] Refinable crude petroleum in the United States.
[3] Kansas-Oklahoma, 33.0 to 33.9 degrees gravity, well.
[4] Not available for publication.

[6] Journal of Commerce, August 22, 1940.
[7] Idem, July 23, 1940.

This strengthening of the oil market resulted in two price advances within a period of less than 60 days. The first movement began in the last part of March and took a number of forms. By April 1, 1941, advances of from 5 to 11 cents a barrel had been made in oil fields, accounting for approximately 15 percent of the oil produced in the Southwest. In Illinois the advance first took the form of premium payments, which amounted to as much as 10 cents a barrel before upward revisions were made in the posted prices.[8] In Louisiana, buyers resorted to a 2-cent differential between gravity and high grade and, in purchasing, used the higher gravity schedules instead of flat prices, with consequent advances of from 3 to 11 cents a barrel.[9]

This first set of advances, which averaged 5 to 7 cents a barrel for the United States, was followed by a second series of increases instituted on March 19. Producers were anticipating this increase as they had been reported to be "of the opinion that another advance in prices would take place in the near future." [10] In this second rise, Oklahoma and Kansas prices were raised 10 cents a barrel to the highest level after 1938, and Texas Panhandle prices were raised 9 cents a barrel.[11] Similar advances followed in other fields throughout the country.

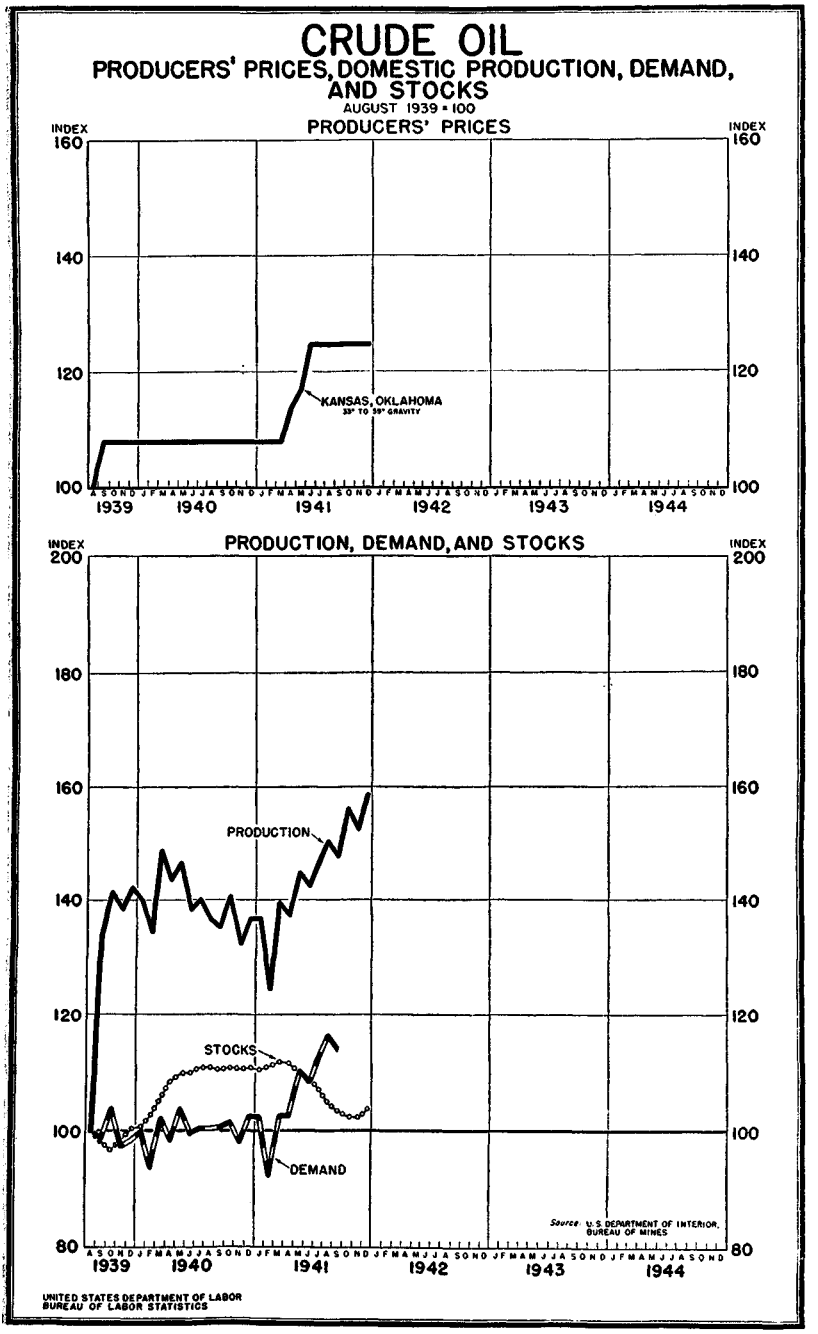
These upward movements were offset by the inability of large oil companies to obtain petroleum sufficient to meet their increasing demand:

> Among these, Consolidated Oil is known to have encountered some trouble in obtaining nominations in Texas sufficient to meet local refinery needs in full, necessitating the withdrawal of crude oil from storage and the purchase of petroleum products from other refineries in the Southwest.[12]

This difficulty of the major oil companies in securing satisfactory quantities was attributed to the restrictions on production imposed by the various State regulatory bodies. "Drastic production curtailment," according to the New York Journal of Commerce (April 1, 1941), "already has made it difficult for some major units to obtain as much crude oil as they need for their current requirements."

These curtailments on production also tended to increase production costs. This was particularly true in the case of the small producing companies operating pumping wells. Although more than half of the crude-oil output is produced by 20 major oil companies,[13] which are able to operate on a mass-production basis and can also balance transportation, refining, and marketing profits against crude-production losses, these smaller units are large in number and produce an appreciable proportion of total domestic output. To offset the increasing costs of pumping wells, these companies in the past had often brought into operation flowing or so-called "flush" wells. But during the latter part of 1940 and the early months of 1941 State curtailments on production severely restricted this practice. On April 1, 1941, the New York Journal of Commerce reported that "drastic curtailment in the Southwestern States virtually bars any possibility of the existence of such (flush) wells, which are confined mainly to such States as Illinois, which do not have pro-ration."

[8] Wall Street Journal, April 1, 1941.
[9] Idem, April 11, 1941.
[10] Journal of Commerce, April 29, 1941.
[11] Wall Street Journal, May 20, 1941.
[12] Journal of Commerce, April 1, 1941.
[13] In 1937, 20 major oil companies owned 23.7 percent of the producing oil wells in the United States but produced 52.5 percent of the total domestic production of crude petroleum. (Source: Temporary National Economic Committee, Hearings, Part 14-A, 1940, p. 7714.)



In the spring and early summer of 1941 the market lost some of its tightness as curtailments on output were relaxed. Production rose from 111 million barrels in April to 117 million in May, and then, after a slight decline in June, to 121 million in August. At the same time the cost-price relationships in the industry were eased by the increase in profits resulting from the price advances made during the spring:

> Despite increased costs and State restrictions reducing crude petroleum so far this year about 4 percent under 1940, oil-producing companies generally have been able to improve their profit showings, due to higher prices posted in April and May.[14]

In July and August, however, the market once again became firmer as a result of a sharp increase in demand. Demand for petroleum products which, since March, had been relatively stable at around 113 million barrels per month shot up to 124 million barrels in July and continued to increase during October. At the same time stocks of refinable crude declined from a peak of 266 million barrels in March to 244 million in November (see table 41).

As a result of these developments, the pressure on price became more intense toward the end of the year. Several producers requested price increases but in each case the Office of Price Administration refused permission.[15] On November 7, three firms in the Texas area posted notices of price increases in the face of a request from the Price Administrator that no advances be made. A few days later, however, these increases were withdrawn after vigorous objection had been voiced by the Office of Price Administration.[16] At the same time the Price Administrator formally requested the industry to refrain from making any price increases without the prior approval of his office, adding, "Prices cannot be advanced first and discussed afterward."

The controversy between the industry and the Government became acute during the final months of 1941. On October 22 the Independent Petroleum Association of America insisted that prices would have to rise in order that greater reserves could be discovered and that premature abandonment of wells could be avoided.[17] In support of its position, the association on December 2 released a cost study purporting to indicate that costs had advanced 35 cents per barrel since 1937, and that, consequently, an appreciable increase would have to be made in prices.[18]

The Office of Price Administration, however, remained firmly opposed to any further price rise. This Office, with the cooperation of the U. S. Tariff Commission, was conducting a study of crude-petroleum costs. Pending the completion of this study, the Administrator stated that a price increase was premature, particularly in view of the fact that in October, November, and December crude production rose to the highest levels reached after the beginning of the war in Europe.

Fuel Oil

The most important types of fuel oil are distillate or "light," which is used almost exclusively for domestic oil burners, and residual or "heavy," which finds its way into industrial and maritime uses. Demand for these two types is affected by different factors. Domestic

[14] Wall Street Journal, August 6, 1941.
[15] The Mid-Continent producers made particularly strong representations for price increases.
[16] Journal of Commerce, November 12, 1941.
[17] Baltimore Sun, October 23, 1941.
[18] Journal of Commerce, December 3, 1941.

consumption is greatly influenced by weather conditions, while the rate of industrial activity largely determines the requirements for "heavy."

Starting from a pre-war level of $3.88 per barrel, the New York price of No. 2 fuel oil advanced between September 1939 and April 1940 to $5.40, its peak for the Defense Period. The price then eased until August, when it once more started up, continuing to rise until November 1941. An informal ceiling established by the Office of Price Administration on November 7 froze the price of light oil at $5.20 per barrel—34 percent above its pre-war level.

Heavy fuel oil (bunker C, New York) followed a similar pattern during the Defense Period, rising from $1.05 per barrel in August 1939 to a peak of $1.50 in February 1940, easing throughout the remainder of the year and again rising during 1941. By November 7, when the Office of Price Administration requested that fuel oil prices be held at their current levels, the price of heavy oil had risen to $1.35 per barrel—29 percent higher than in August 1939.

TABLE 42.—*FUEL OIL: Prices, Production, Demand, and Stocks, August 1939–December 1941*

[Sources: Production, demand, and stocks—U. S. Bureau of Mines; prices—National Petroleum News]

Year and month	Prices per barrel of—		Production		Demand [3]		Stocks, end of month	
	Light No. 2 and 3 [1]	Heavy, bunker C [2]	Light	Heavy	Light	Heavy	Light	Heavy
			Thousands of barrels					
1939								
August	$3.88	$1.05	16,246	25,299	7,829	25,735	37,626	101,361
September	4.00	1.05	12,975	26,302	9,684	27,292	38,138	100,063
October	4.38	1.15	15,017	27,594	10,548	28,683	40,093	99,921
November	4.60	1.15	13,757	26,088	14,074	29,796	37,888	96,696
December	4.70	1.15	14,433	26,944	16,843	31,587	33,718	92,290
1940								
January	5.10	1.15	16,548	28,082	22,462	32,473	26,462	89,281
February	5.10	1.50	16,262	24,680	17,623	27,123	24,640	89,784
March	5.10	1.50	16,346	26,870	16,187	31,188	23,086	89,351
April	5.40	1.50	15,260	25,372	11,849	26,887	25,092	88,932
May	5.40	1.50	14,541	26,548	9,738	26,338	28,220	89,835
June	4.75	1.35	14,154	25,469	7,028	25,048	33,685	91,148
July	4.70	1.35	14,439	25,248	7,223	23,990	39,412	93,029
August	4.40	1.15	14,957	26,451	8,362	26,267	45,041	94,421
September	4.10	1.15	14,735	25,504	10,439	25,843	48,828	94,658
October	4.10	1.15	14,381	27,944	13,358	30,192	49,037	94,647
November	4.10	1.15	15,073	26,125	16,848	29,980	46,624	92,392
December	4.50	1.15	16,608	27,925	19,702	33,955	42,940	89,304
1941								
January	4.90	1.25	17,018	27,958	21,010	32,885	37,926	85,092
February	4.50	1.25	14,732	25,979	17,783	30,647	34,790	82,902
March	4.00	1.25	15,326	27,858	19,847	32,626	29,805	81,634
April	4.20	1.25	14,692	27,310	12,264	31,354	31,725	79,138
May	4.70	1.25	15,546	28,393	11,233	30,328	35,389	79,218
June	4.90	1.25	14,697	28,255	10,853	29,413	38,274	79,948
July	4.90	1.35	15,746	28,624	10,653	29,290	43,037	80,760
August	4.90	1.35	15,409	29,836	9,667	30,122	47,163	82,268
September	5.20	1.35	16,024	28,118	11,516	31,831	51,412	83,752
October	5.20	1.35	16,554	30,871	(4)	(4)	55,385	84,960
November	5.20	1.35	16,230	29,666	(4)	(4)	55,073	83,730
December	5.20	1.35	17,142	31,127	(4)	(4)	49,926	(4)

[1] Bulk, tankcars, New York Harbor.
[2] New York Harbor.
[3] Apparent domestic consumption.
[4] Not available for publication.

At the outbreak of war in August 1939, the price of No. 2 light oil on the East Coast began a month-by-month rise which carried the New York price from $3.88 per barrel to $5.10 in January 1940, an increase of 31 percent. (See table 42.) This rise, which was con-

siderably greater than the usual winter advance, was due both to soaring tanker rates and to an unusually severe winter. Between August and December, shipping rates for light oil from the Gulf to the North Atlantic Coast [19] rose from 17 cents per barrel to 62.6 cents,[20] an advance considerably greater than the customary seasonal change.[21] Domestic demand, which had totaled 7,800,000 barrels in August, rose to 16,800,000 barrels in December, and to 22,500,000 in January 1940; the corresponding figure for January 1939 had been 16,500,000 barrels.

The price of heavy fuel oil (bunker C, New York), which was not directly stimulated by any demands resulting from the severe winter, experienced a more moderate increase, rising from $1.05 per barrel in August to $1.15 in December. This was largely a reflection of the increase in tanker rates.[20] Foreign, as well as domestic, demand showed little unusual change as the belligerent nations resorted to severe rationing to conserve their supplies for war industries.

The year 1940 was characterized by two outstanding developments, which, to some extent, offset each other. First, a tanker shortage developed toward the end of the year as a number of ships were transferred to other runs: "Gulf to North Atlantic Coast tanker rates * * * advanced sharply from an average of 27.8 cents a barrel for clean boats in 1939 to 52.6 cents in 1940, and charges for carrying residual grades (heavy) rose from an average of 25.8 cents a barrel in 1939 to 46.9 cents in 1940." [22]

On the other hand, the tightness in supply resulting from the shortage of coast-wise tankers was eased by a radical change which took place in foreign trade. Imports of fuel oil for some time had—

> * * * been limited largely to heavy or residual grades brought in under bond for the supply of vessels; however, with the ships' bunkering business on a decline and an active domestic market, this custom was reversed in 1940, so that the larger share of fuel-oil imports was entered as duty-paid and was intended for domestic consumption.[22]

Exports of light oil fell from 32 million barrels in 1939 to 19 million in 1940, a decline of 41 percent, whereas duty-paid imports, which were practically nonexistent in 1939, amounted to 3 million barrels in 1940. Exports of "heavy" declined 8 percent in 1940 while duty-paid imports (i. e., intended for domestic consumption) rose from 929,000 to 17,940,000 barrels.[23] This increase in imports was a result, partly, of a reciprocal trade treaty concluded with Venezuela on December 16, 1939, whereby the tariff on fuel oils was cut from 21 cents to 10½ cents per barrel for a limited quantity of oil.[24] Aided by the treaty and by the prevailing high coast-wise tanker rates, Venezuela and Netherlands West Indies were enabled to send considerable quantities of fuel oil to the United States during the year.

During the first 3 months of 1940, No. 2 fuel oil remained unchanged at $5.10 per barrel. Some sellers posted higher quotations in January, but it was not until April that a new price, $5.40, was generally announced. This quotation proved to be too high in the face of the seasonal decline in demand, the increase in stocks which accumulated

[19] Approximately 70 percent of the consumption of heating fuel is concentrated in the Atlantic Seaboard States. (Journal of Commerce, April 12, 1941.)
[20] U. S. Bureau of Mines, Minerals Yearbook, Review of 1940, pp. 1006-7.
[21] Cf. Gasoline, p. 180.
[22] U. S. Bureau of Mines, Minerals Yearbook, Review of 1940, p. 1006.
[23] Idem, p. 1003.
[24] Imports under the new duty were limited to 5 percent of the previous year's crude-oil runs to stills in American refineries.

rapidly after April, the decline in exports following the blockade of European ports, and a fall in tanker rates. Prices continued to drop until September by which time the price had reached a low of $4.10.

Heavy fuel followed somewhat the same course, although price changes, while less frequent, were ordinarily more severe when they did occur. Thus, in February 1940 the price jumped from $1.15 to $1.50 per barrel, an increase of 30 percent. Supplies had become scarce in January and there took place "an almost wild scramble for oil," [25] accompanied by occasional price advances; by February the increases had become general. In spring, however, supplies of "heavy" became easier, tanker rates declined seasonally, and the rate of industrial production fell, thereby decreasing demand. The price dropped back to $1.15 by August, where it remained during the remainder of 1940.

At the beginning of 1941, higher prices were expected by the trade. The tanker shortage became more severe when, in May, 50 tankers were transferred to Great Britain. Both the high rate of industrial production called forth by the defense program and an estimated increase of 300,000 domestic oil burners during 1941 (14 percent) were expected to swell materially the demand for oil.[26]

An advance did take place in January when "light" moved up to $4.90. However, a contraseasonal reaction set in, the price falling to $4 in March, which, in turn, was followed by a contraseasonal increase during April, May, and June. These erratic movements were due to several unusual developments: tanker rates dropped from 55 cents in January 1941 to 42 and 45 cents in February,[27] and exports of distillate fuel oil in February and March had fallen almost 50 percent below the corresponding period in 1940. Finally, the industry had accumulated a large supply of heating oil early in the season in order to insure itself against a recurrence of the previous year's experience. Since the tanker shortage proved to be less acute during the early months of 1941 (and the winter less severe than the preceding one) the industry found itself overstocked; consequently prices were depressed.[28] These factors gradually dissipated themselves during the late spring, and by June the price had returned to its January level.

During the summer months the usual seasonal decline in price did not take place, the price remaining unchanged through August. An increase in the price of crude oil, coupled with rumors to the effect that 50 additional tankers were to be transferred to Great Britain,[29] made sellers reluctant to grant any reductions. Prices of "heavy" during the first part of 1941 remained stable after an initial seasonal advance of 10 cents in January. However, the market remained strong as stocks declined while demand reached levels about 10 percent above those of the corresponding period in 1940. In May, for example, domestic demand was 14 percent higher than in May 1940, while stocks were 13 percent lower. This situation was aggravated on the East Coast by the failure of inventories to build up during the summer months,[30] and by increases in costs of crude oil and in transportation charges. As a result, many refiners in June began to post a price of $1.35, 10 cents higher than the prevailing quotation. Although some discounts

[25] Journal of Commerce, January 8, 1940.
[26] Idem, April 12, 1941.
[27] New York Times, February 7, 1941.
[28] Journal of Commerce, March 3, 1941.
[29] Idem, May 21, 1941.
[30] Idem, July 1, 1941.

were allowed to most buyers, by July the discounts had disappeared and the new price was firmly established at $1.35,[30] where it remained through November.

In June 1941, the Office of Price Administration and Civilian Supply began to express an interest in all petroleum prices, including fuel oil. Letters were sent by the Price Administrator to refiners and marketers, requesting that no price advances be instituted without prior consultation with his office. It was also announced that the industry and the Government were in agreement that no price changes should take place unless "basic conditions change."

Despite these requests, subsequent price increases did occur in addition to the above-mentioned July increase in "heavy." The price of "light," which had experienced no seasonal decline during the warm months, nevertheless rose from $4.90 in August to $5.20 in September as the heating season began. Expectations of a heavy demand in the fall combined with a peculiar supply situation exerted a strong upward pressure on prices. The unusually large demand for gasoline caused refiners to use distillate fuel oil as a refining stock to produce motor fuel and aviation gasoline. In addition, tankers, which ordinarily would have been used for fuel oil, carried gasoline until unusually late in the season. Additions to inventories of fuel oil consequently lagged on the Atlantic seaboard, causing "misgivings about the supply outlook." [31]

In order to put an end to further price advances—which by November had carried the prices of "light" and of "heavy" to levels 34 percent and 29 percent above their respective pre-war figures—the Office of Price Administration, in its letter of November 7, formally requested sellers of fuel oil to make no further price changes. Under this informal price ceiling, prices of fuel oil remained stable to the end of the Defense Period.

Gasoline

The retail price of gasoline paid by the motorist at the service station represents an accumulation of prices at several levels, the base of which is the price at the refinery. Prices on the eastern seaboard are therefore based upon the quotations of refiners on the Gulf Coast, while in the Midwest they are based upon refiners' quotations in the midcontinent area. Principal emphasis in this section is upon the refinery figures; the "tank car" price, which is the quotation for a tank car at a major distribution center; the tank-wagon figure, which is the price to the dealer; and the average retail price as recorded by the Bureau of Labor Statistics.

From a pre-war level of 5.67 cents per gallon, the national average of tank-car prices rose to 6.16 cents in December 1939, and subsequently dropped sharply during 1940 to 5 cents in January 1941. In February 1941 a sustained rise began which carried the average tank-car price in November to a peak of 6.77 cents. Dealer prices followed the same pattern, although frequent minor fluctuations interrupted the general trend of the national average, which stood at 10.02 cents per gallon at the close of the Defense Period in contrast to a level of 9.70 cents in August 1939. (See table 43.) The average retail price,[32] which remained stable at 18.6 cents per gallon during

[30] Journal of Commerce, July 1, 1941.
[31] Idem, March 3, 1941.
[32] The average retail price of regular or house brand grade gasoline in large cities, calculated by the Bureau of Labor Statistics.

the fall of 1939 and declined steadily throughout 1940, began to rise in February 1941. Reaching a peak of 19.6 cents in September and October, it levelled off at 19.5 cents for the remainder of the year. (See table 44.)

TABLE 43.—*GASOLINE: Wholesale Prices, Production, Demand, and Stocks, August 1939–December 1941*

[Sources: Production, demand, stocks—U. S. Department of Interior, Annual Petroleum Supplement; prices—National Petroleum News]

Year and month	Wholesale prices per gallon		Production	Demand [3]	Stocks, end of month
	Dealer [1]	Tank car [2]	Thousands of barrels		
1939	*Cents*	*Cents*			
August	9.70	5.67	52,335	54,025	73,072
September	9.69	5.92	52,047	49,505	71,389
October	9.74	6.21	55,161	49,854	73,256
November	9.84	6.26	52,893	47,407	76,198
December	9.59	6.16	52,464	43,807	81,722
1940					
January	9.79	6.03	50,281	40,385	89,339
February	9.68	5.91	47,609	37,416	97,478
March	9.60	5.86	51,223	44,532	101,860
April	9.60	5.84	50,612	47,716	102,727
May	9.07	5.66	52,222	52,913	99,988
June	8.93	5.48	51,362	55,497	93,276
July	8.89	5.35	51,918	53,904	89,669
August	8.93	5.37	52,694	55,382	84,836
September	8.86	5.22	52,351	52,335	82,953
October	8.57	5.13	52,945	53,845	79,907
November	8.71	5.06	50,931	49,113	79,531
December	8.66	5.04	52,547	46,452	83,647
1941					
January	8.55	5.00	53,384	46,190	88,800
February	8.58	5.12	49,155	42,782	93,920
March	8.65	5.14	54,221	49,572	96,832
April	8.93	5.48	54,493	55,879	93,918
May	9.41	5.80	59,072	60,121	91,281
June	9.77	6.49	57,689	59,062	88,646
July	9.93	6.69	60,594	63,906	83,746
August	9.96	6.71	61,578	63,575	79,205
September	9.96	6.73	61,067	59,768	78,134
October	9.98	6.77	63,273	(4)	79,568
November	10.00	6.77	62,187	(4)	83,935
December	10.02	6.80	64,581	(4)	90,688

[1] Average of tank-wagon prices, ex-tax, for regular-grade gasoline in 50 cities; earliest date reported in month.
[2] Weighted average of prices for regular-grade gasoline, ex-tax, in 9 markets (August and September 1939, 12 markets); earliest date reported in month.
[3] Apparent domestic consumption.
[4] Not available for publication.

In the first 3 months following the outbreak of the war in 1939, tank-car prices throughout the country advanced approximately 11 percent, the national average rising from 5.7 cents per gallon in August to 6.3 cents in November. As is usually the case, a less abrupt advance took place in national dealer prices. On the eastern seaboard the dealer price rose in New York City from 8.5 cents in August to 9.2 cents in December, while in Chicago no change occurred. The average retail price likewise remained unchanged.

The advance along the eastern seaboard was due to a sharp rise in the Gulf Coast refinery price, coupled with a very marked increase in tanker rates. The anticipation of enlarged foreign demand resulting from the wartime needs of the belligerents was the apparent cause of the increase in Gulf Coast refinery prices.

TABLE 44.—*GASOLINE: Retail Price of Regular or House Brand Grade in Large Cities, September 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Average retail price	Retail-price index (June 1939=100)	Year and month	Average retail price	Retail-price index (June 1939=100)
1939	*Cents*		*1941*	*Cents*	
September	18.6	101.6	January [1]	17.6	96.3
December	18.6	101.6	February [1]	17.7	96.9
1940			March	17.8	97.5
March	18.5	101.1	April [1]	18.0	98.6
June	17.7	96.8	May [1]	18.6	101.9
September	17.8	97.4	June	19.2	105.2
October [1]	17.5	95.7	July [1]	19.3	105.7
November [1]	17.7	96.8	August [1]	19.2	105.2
December	17.5	95.7	September	19.6	107.4
			October [1]	19.6	107.4
			November [1]	19.5	106.9
			December	19.5	106.9

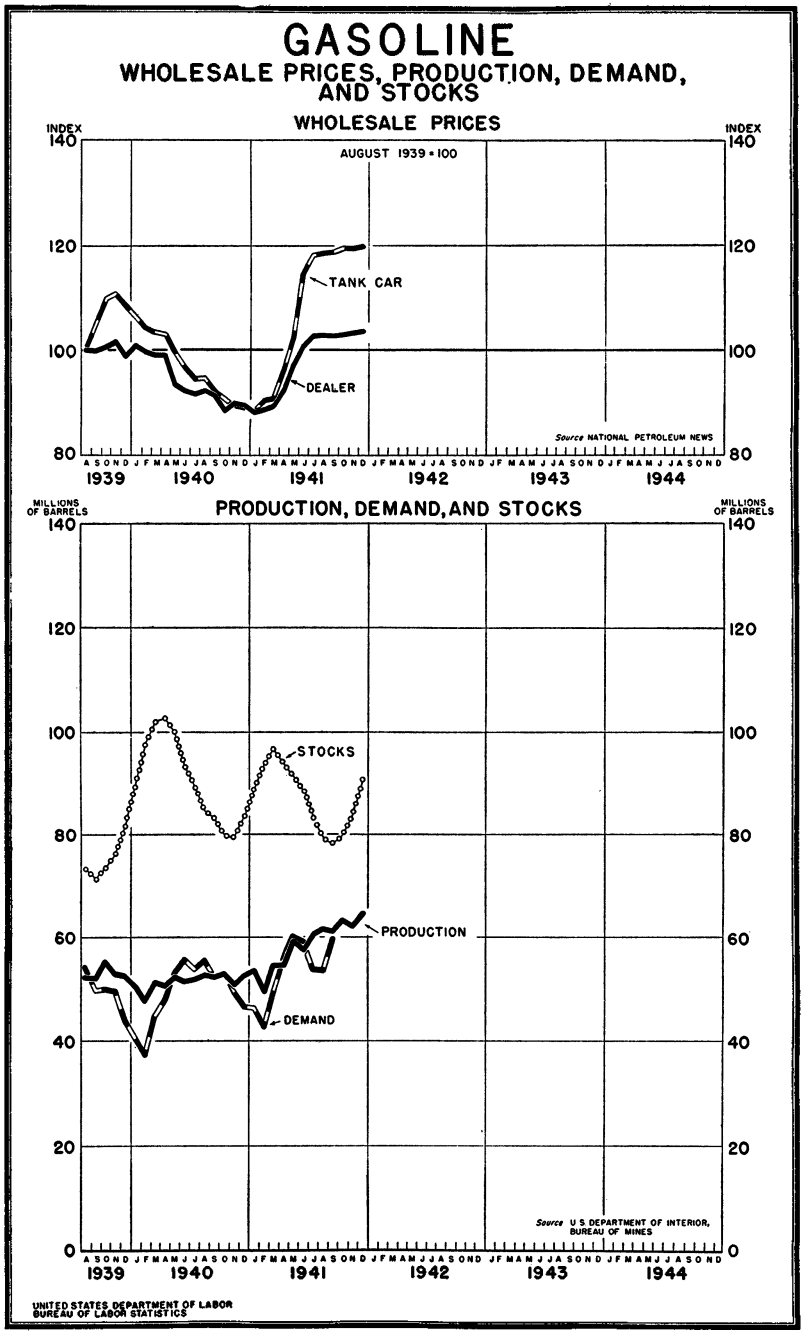
[1] Monthly prices have been adjusted to the quarterly level.

Between August and December, tanker rates from the Gulf to New York rose from 15 to 52 cents a barrel, an increase of 247 percent. Individual quotations were made at even higher levels; "Reports current in the trade," at the end of December, "indicated that some shipowners if they had the vessels available would ask around 75 cents a barrel for gasoline." [33] The increase in tanker rates alone was responsible for 0.88 cent of the total advance of 1.51 cents per gallon which took place between August and December—the aggregate of the Gulf price plus the tanker rate to New York.

Although these increases in tanker rates carried prices upward on the eastern seaboard to the end of the year, both tank-car and dealer prices throughout most of the Nation had begun to decline by November while retail prices turned downward early in 1940. This was due to a decline in demand and to the continuation of a high rate of refinery operations. Domestic demand for gasoline, as estimated by the United States Department of Interior, dropped from 53 million barrels in August to 44 million in December. This resulted partly from the failure of any large-scale expansion of industrial activity to materialize and partly from the seasonal down-turn in consumption which regularly occurs in the winter months. Demand from abroad also fell off, as exports in the last quarter of 1939 were 33 percent less than in the corresponding quarter in 1938. This decline ran contrary to expectations that the effects of the war would create a widespread export demand for American gasoline.

The downward trend in prices, which began in the last part of 1939, continued throughout the entire year 1940, as progressive German conquests further cut export markets and refinery operations continued at a high rate. Stocks increased greatly, reaching a high of 103 million barrels in April 1940 as compared to 73 million in August 1939 and to 87 million in April 1939. After April, stocks declined moderately, but remained well above the pre-war levels throughout the year. (See table 44.)

[33] Journal of Commerce, December 29, 1939.



A number of efforts were made during 1940 to reverse the downward trend of prices. An attempt was thus initiated in May to increase prices in the midcontinent area by raising the Oklahoma tank-car price from 4.50 to 4.75 cents a gallon; but the increase could not be maintained, and by October the price had fallen back to 4.50 cents.

On the eastern seaboard, prices rose late in 1940 as tanker rates again advanced. These rates, which by the early fall of 1940 had fallen almost to their pre-war level, were raised from 18 cents a barrel in September to 65 cents in December. This advance in transportation charges caused the delivered cost on the eastern seaboard to increase between September and December from 4.30 to 5.05 cents per gallon, despite an actual decline in the Gulf Coast price from 3.88 to 3.50 cents in the same period. This increase was subsequently reflected along the eastern seaboard in higher tank-car and dealer prices; between December 1940 and January 1941, they rose in New York from 5 to 5.5 cents and from 7 to 7.5 cents, respectively.[34]

During the first quarter of 1941 prices remained comparatively stable; the decline in demand during the winter months was not nearly so great as in the preceding year, and the rise in stocks was moderate owing to a curtailment of production in February.

In April, however, prices began to rise abruptly, reflecting a sharp increase in domestic demand. Higher levels of industrial output, large purchases of gasoline by the Government for defense purposes, increased employment and overcrowding in many defense centers which meant a greater use of automobiles as a means of transportation to work, and the rise in purchasing power with the consequent increase in pleasure driving—all contributed to swell the domestic demand for gasoline from 43 million barrels in February to 61 million in May.

The average tank-car price, for the Nation as a whole, rose from 5.14 cents in March to 5.80 cents in May, while the dealer price mounted from 8.65 to 9.41 cents, increases of 12.8 percent and 8.8 percent, respectively.[35] During the same period the average retail price increased from 17.8 cents to 18.6 cents.

In May it was reported that officials of the Office of Price Administration and Civilian Supply "have been concerned over recent price increases" in gasoline and other petroleum products. On May 23 a meeting was held between those officials and representatives of leading oil companies in the New England and Mid-Atlantic areas, the consensus of which was reported to be that "no further substantial increases in gasoline prices are called for unless basic cost conditions change," and that no advances were to be made, for any reason, without prior consultation with the Government.

This proposed stabilization of prices was based, in part, upon the favorable condition of earnings in the industry. At the end of the

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[34] The advance in tanker rates also had other consequences. In the Oil and Gas Journal of December 12 1940, it was reported: "From a refinery-market standpoint, however, particularly as it affects the independent and nonintegrated companies on the Gulf Coast, depending on the chartering of outside bottoms for the movement of their products, the high tanker rates now in force from Texas, as well as Louisiana ports, to the Atlantic seaboard are serving as a check against material improvement of prices at refineries. Companies which own their own fleets of boats, on which costs of operation are more or less constant over a period of time, may be in a position to offset to some extent the low Gulf Coast quotations by the higher prices received in the Atlantic seaboard market by reason of the tanker-rate increases, but the other companies cannot expect to get higher prices at the Gulf until the strengthening on the East Coast is sufficient to absorb entirely the higher transportation cost, which so far has not been the case."

[35] In New York the tank-car price during this period rose 27.3 percent, while the dealer price advanced 13.9 percent. In the mid-continent area the Oklahoma tank-car price mounted 17.1 percent and the Chicago dealer price increased 6.2 percent.

first 6 months of the year, the Wall Street Journal (July 11, 1941) reported:

> Further strengthening in gasoline prices in recent weeks, together with a peak demand for oil products, gives a clear indication that the 1941 profit outlook for the oil industry is the best since 1937, the record year.
>
> It would not be surprising, moreover, if some companies this year came through with new record profits. * * *
>
> A number of companies, in the first half of this year, more than covered their full year's dividend requirements. Continuance of the present demand and price trends—there seems to be nothing on the horizon to alter the course for the immediate future—presages some extra dividend distributions before the year is out.

After the May meeting, however, prices continued to advance, the national average tank-car figure rising from 5.80 cents per gallon in May to 6.49 cents in June, while the dealer price advanced from 9.41 to 9.77 cents and the retail price from 18.6 to 19.2 cents. On June 19, the Price Administrator sent a telegram to leading refiners and marketers of petroleum products throughout the country, in which he asked that no further advances be made without consultation with the Government; he pointed out that in the meeting of May 23 a general agreement to that effect had been reached, the agreement to hold unless "basic conditions change."

Nevertheless, another increase took place in July, with the national tank-car price moving up to 6.69 cents per gallon and the dealer price to 9.93 cents. This advance brought the national tank-car and dealer prices 33.8 and 16.1 percent, respectively, above their January 1941 levels; with increases on the eastern seaboard continuing to be well above the average for the Nation.

To arrest this movement, the Price Administrator on July 17 requested all refiners in the Gulf Coast area to maintain a base price of 6 cents for Gulf Coast gasoline. This price had already risen from 3.62 cents per gallon at the beginning of the year to 6 cents per gallon on June 19, and in July several cargoes were reported to be moving at prices ranging from 6.25 to 6.50 cents.

After this action, tank-car and dealer prices throughout the United States remained relatively stable. On the eastern seaboard this stability was maintained in spite of a further sharp increase in demand and action by the Office of Price Administration on September 17 permitting small refiners on the Gulf Coast to raise their price from 6 to 6.50 cents a gallon because of increases in costs.

Retail prices showed a different trend, as the national average, which rose in July to 19.3 cents, declined 0.1 cent in August, and advanced in September to 19.6 cents, its peak for the Defense Period.

In a further effort to put an end to sporadic advances which had occurred in spite of the June requests, the Office of Price Administration on November 7 sent a letter to all marketers of refined products, formally requesting that no increases be instituted without the prior approval of the Price Administrator. Following this action no further price changes took place, partly because of an apparently better balance between supply and demand.

The average retail price, which remained at its peak level of 19.6 cents in October, subsequently eased slightly and stood at 19.5 cents during November and December.

Anthracite

During the 2¼-year period, August 1939–December 1941, economic conditions of the anthracite industry, long known as a "depressed" industry, improved materially—wholesale prices for the common size increased 15 to 20 percent, and operations became generally profitable.

The depressed condition of the industry which had lasted for over a decade, had resulted largely from the competition of other types of fuels, principally bituminous coal and fuel oil and to a lesser extent byproduct coke, range oil, natural gas, and manufactured gas.

> The production of anthracite during the generally accepted period of stability from 1913 to 1921 (excluding the 2 war years of 1917 and 1918) averaged between 85 and 90 million net tons. By 1936 its production had declined to 54½ million tons, representing a reduction in output of approximately 35 percent. Since there was a substantial increase in total fuel consumption during this period, the decline may be attributed entirely to the growth in the consumption of competitive fuels.[36]

To improve the condition of the industry, the State of Pennsylvania in February 1940 instituted a voluntary plan of controlled output which was adopted by anthracite operators representing over 95 percent of the industry's production. Thus, during most of the Defense period, prices of anthracite were directly affected by the operation of this allocation plan, under the provisions of which estimates were made each week of production requirements "for the industry as a whole and for each producer in accordance with his percentage position." [37]

Anthracite prices, up to 1941, had for years been subject in the spring to a seasonal reduction of approximately 50 cents a ton, with the discount gradually being withdrawn in the summer and fall. In 1941, however, the seasonal discount was not allowed in the spring, with the result that prices were approximately the same in April as in the winter months. This omission came at a time when the industry was conducting wage negotiations with the United Mine Workers. The basic wage increase agreed upon in May was 7½ percent for all day and piece-work rates, retroactive to May 1, 1941, and effective for the 6 months ending October 1; after the latter date and for the duration of the new contract the increase was to be 10 percent. In addition, a vacation payment of $20 was granted to each person employed for 1 year or more.

The Journal of Commerce in its issue of June 26, 1941, reported that these wage increases had been completely offset by more profitable operations:

> Better control over the "bootleg" coal situation, the trend toward coal burners in new construction, and an improved price structure are all expected to contribute to earnings of leading anthracite producers. Price advances and economies due to larger volume have offset wage increases, so that profit margins are unimpaired.

This reported "better control over the 'bootleg' coal situation" was an important market factor. Bootleg-coal operations, which in 1936–37 accounted for 5 percent of the total output of all legal anthracite mined in Pennsylvania,[38] had for years disturbed the anthra-

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[36] Commonwealth of Pennsylvania, Report of the Anthracite Coal Industry Commission, 1938, pp. 185–196.

[37] Coal Age, February 1940, p. 104. (For example, for the week ending February 3, 1940, the production quota was placed at 960,000 tons; for the second week it was reduced to 480,000 tons; and then for the week ending February 17 it was raised to 720,000 tons, etc. Coal Age, March 1940, p. 67.)

[38] Report of the Anthracite Coal Industry Commission, op. cit. p. 43.

cite price structure; this coal "was sold directly by the bootleggers in competition with legitimate producers and generally at prices below the market." [39] The improvement in this situation resulted from the introduction by the State of Pennsylvania of a plan in March 1941 to reduce and eventually eliminate bootleg mining, the plan providing that "legitimate" producers could increase their production allocations by 3¼ net tons per day for every bootlegger which they put on their own pay roll.[40]

The increase in profits resulting from the lessening of bootlegging, from increased sales, and from the omission of the seasonal discount was reported to be substantial. According to the Wall Street Journal of June 30, 1941—

> The hard coal industry is closing the most successful second quarter in a number of years * * * tentative indications are now that the industry as a whole not only was in the black for the period, as compared with a substantial net loss in the same period of 1940, but that its earnings showed a contraseasonal gain over the first quarter of this year.

In July, leading producers announced that they intended to introduce the regular seasonal price increases, despite the fact that the usual seasonal discounts had been omitted. This would maintain prices at a level 50 cents a ton above those of the previous winter.[41]

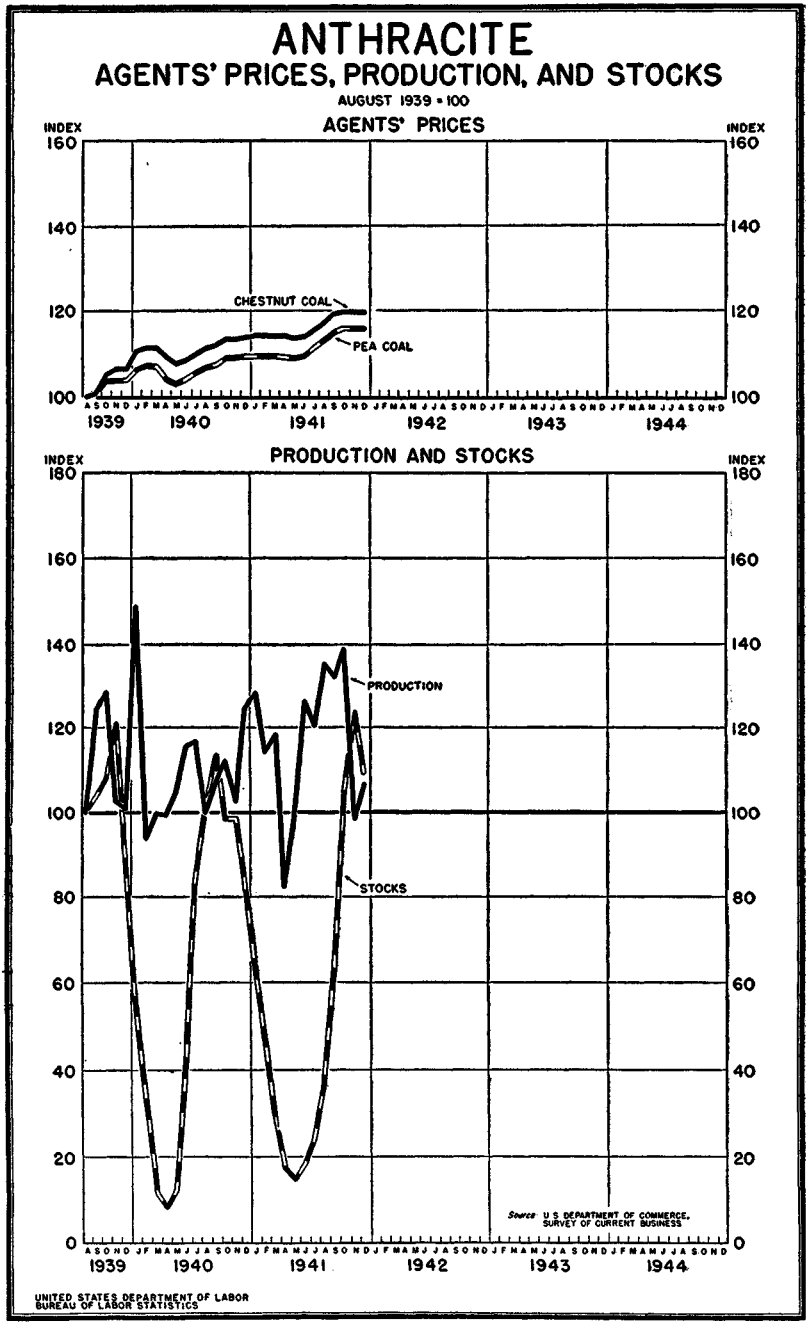
Following this announcement, producers representing most of the industry were summoned on July 10 to a conference with the Office of Price Administration and Civilian Supply, at which it was requested that the advance be withdrawn. The meeting ended in disagreement, and 2 weeks later the operators announced that they intended to continue with the proposed increases.[42] On its part the Office of Price Administration and Civilian Supply was reported to be planning the establishment of a price ceiling if these increases actually were put into effect. This report was met with statements by the operators—who were joined in their stand by the United Mine Workers [43]—that the price advances were justified by the wage increase and that consequently any attempt by the Government to impose a price ceiling would be "vigorously fought":

> The anthracite producers * * * made it plain that the concessions in wages and working conditions under the new wage-hour contract governing the industry merited the increased price schedule and they intended to carry it out.[44]

The proposed "seasonal" advances were instituted by Pennsylvania anthracite producers on July 15 and August 15. On September 12, the Government established a price ceiling which was intended to block the additional 15 cents per ton increase which the producers had planned to put into effect on September 15. Administrator Henderson stated that the operators had failed to supply his office with reports and statistics necessary to justify the increase, and he added that no advances would be allowed until the operators produced such information.

The operators nevertheless proceeded with the announced increases. They maintained that the Administrator "* * * had, in effect,

[39] Wall Street Journal, June 30, 1941.
[40] Coal Age, March 1941.
[41] Wall Street Journal, July 9, 1941.
[42] New York Journal of Commerce, August 7, 1941.
[43] Scranton Tribune, August 16, 1941.
[44] Idem, August 22, 1941.



prejudged the situation," [45] as information had been submitted which, in their opinion, was adequate to justify a price advance.

On September 18, the Price Administrator revoked the price ceiling, stating that this action was taken "following the submission of full and comprehensive data supporting the price advance." Although he approved the price advance, he criticized the action of the operators in violating the price schedule while it had been in effect, stating that he could not "condemn such arbitrary action too strongly. If followed by other industries it would threaten the whole basic structure of price stabilization."

TABLE 45.—*ANTHRACITE: Agents' Prices, Production, and Stocks, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; production and stocks—U. S. Department of Commerce, Survey of Current Business]

Year and month	Prices (per ton)		Stocks, end of month [1] (in thousands)	Production (in thousands)
	Chestnut	Pea		
1939			*Short tons*	*Short tons*
August	$8.60	$7.67	1,129	3,883
September	8.65	7.70	1,172	4,849
October	9.03	7.93	1,219	4,985
November	9.16	7.95	1,365	3,989
December	9.16	7.97	994	3,914
1940				
January	9.50	8.18	647	5,783
February	9.58	8.23	372	3,648
March	9.58	8.21	128	3,881
April	9.39	7.98	91	3,853
May	9.28	7.89	137	4,070
June	9.33	7.98	506	4,492
July	9.46	8.10	953	4,534
August	9.56	8.19	1,164	3,883
September	9.64	8.26	1,279	4,172
October	9.77	8.37	1,112	4,355
November	9.78	8.37	1,112	3,980
December	9.80	8.38	939	4,834
1941				
January	9.83	8.40	704	4,977
February	9.83	8.40	531	4,432
March	9.81	8.40	331	4,595
April	9.81	8.39	197	3,198
May	9.79	8.36	169	3,858
June	9.81	8.41	205	4,891
July	9.95	8.56	268	4,681
August	10.10	8.68	414	5,246
September	10.25	8.83	708	5,143
October	10.30	8.89	1,177	5,380
November	10.30	8.89	1,393	3,632
December	10.29	8.89	1,237	4,118

[1] In producers' storage yards.

At the same time the Office of Price Administration and the coal producers agreed that no further price increases would be made without the prior approval of the Price Administrator. This constituted in effect an informal price ceiling; no changes took place subsequent to the agreement.

At the time of Pearl Harbor, in December 1941, the wholesale price of anthracite was reported at $10.29 per ton for the chestnut size as compared to $8.60 in August 1939, while the quotation for the pea size had risen to $8.89 from the pre-war figure of $7.67 per ton, advances of 20 and 16 percent, respectively.

[45] Wall Street Journal, September 16, 1941.

Bituminous Coal

Between the invasion of Poland and the attack on Pearl Harbor, bituminous-coal prices were marked by two important upswings, the first following the establishment of minimum prices by the Bituminous Coal Division on October 1, 1940, the second following the coal strike in April 1941. During this period the average wholesale price of prepared sizes rose from $4.31 to $4.93 per ton, an increase of 14 percent. Screenings advanced in about the same proportion, mine-run coal somewhat less (see table 46).

From the outbreak of the war to October 1940, prices remained relatively stable, a minor increase in the fall of 1939 being offset by a roughly corresponding decline in the spring of 1940. Production, industrial consumption, and stocks of industrial and retail dealers followed normal seasonal fluctuations.

In the latter part of the summer of 1940, buyers entered the market for large quantities of coal, but with little effect on prices. This movement was attributed to reports that minimum prices for the coal industry would shortly be established by the Bituminous Coal Division of the Department of the Interior, and that these minimum prices, as fixed by the Government, would be higher than the prevailing quotations. The Journal of Commerce, July 27, 1940, stated that—

> Since current quotations are materially below the minima proposed, a considerable advance buying of soft coal is likely during August. Prevailing prices are about 30 cents below the legal minima for low volatile, and 50 to 75 cents a ton lower for higher volatile coal.

On October 1, 1940, minimum prices became effective under the provisions of the Bituminous Coal Act. There was an immediate increase in coal quotations from the mine to the dealer, prepared sizes rising from $4.35 in September to $4.60 in October, mine run from $4.28 to $4.38, and screenings from $3.45 to $3.53. In addition, the minimum prices reduced the differentials formerly existing between high-grade and low-grade coals and thus induced a more widespread purchase of the higher-priced grades:

> With the minimum prices on bituminous coal only 4 days old, already there has been one effect noted: a shift in demand to the higher grades both of mine run and nut and slack * * *. Coals which are now required to sell at $2.25 net tons mines, for example, under distress conditions of accumulation, have often been disposed of well under $2. Now that the difference between the top and the medium or lower grades is established by law at only 20 to 30 cents, dealers have noted a tendency already for buyers to call for the better types.[46]

In the winter and early spring of 1941, coal prices remained relatively stable despite large-scale purchases of buyers who were stocking up in anticipation of possible disagreement in the pending wage negotiations. By March, stocks were reported to be at the highest levels in 4 years.[47]

The negotiations failed to achieve agreement and on April 1, at the expiration of the old wage contracts, miners in both northern and southern mines went on strike and did not return to work until April 29–30. During this period, both production and stocks fell precipitously, the former from 48 million tons in March to 6 million in April, and the latter from 51 million to 36 million tons (see table 46).

[46] American Metal Market, October 5, 1940.
[47] Daily Metal Trade, March 11, 1941.

TABLE 46.—*BITUMINOUS COAL: Prices, Production, Consumption, and Stocks, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; consumption, production, and stocks—U. S. Department of Commerce, Survey of Current Business]

Year and month	Prices per ton			Industrial consumption	Production	Stocks (industrial and retail dealers), end of month
	Mine run	Prepared sizes	Screenings	Thousands of tons		
1939						
August	$4.25	$4.31	$3.43	23,437	35,016	33,624
September	4.27	4.36	3.43	24,980	38,465	36,943
October	4.33	4.44	3.48	29,519	46,394	41,919
November	4.33	4.43	3.48	30,243	43,301	45,542
December	4.32	4.40	3.48	31,031	38,066	44,571
1940						
January	4.32	4.43	3.50	33,183	44,976	40,222
February	4.32	4.46	3.48	28,780	39,277	39,077
March	4.30	4.40	3.44	28,538	35,244	35,108
April	4.28	4.30	3.43	26,072	32,790	35,721
May	4.27	4.23	3.43	25,741	34,896	39,203
June	4.26	4.23	3.42	24,988	32,400	41,563
July	4.25	4.28	3.42	25,877	35,890	45,438
August	4.26	4.31	3.44	27,079	39,010	48,111
September	4.28	4.35	3.45	26,783	38,650	51,122
October	4.38	4.60	3.53	30,333	38,700	51,564
November	4.37	4.62	3.54	30,961	40,012	51,872
December	4.37	4.62	3.54	32,637	41,400	50,998
1941						
January	4.37	4.63	3.54	33,588	44,070	48,702
February	4.37	4.63	3.54	31,161	41,695	48,518
March	4.37	4.63	3.54	34,041	47,996	50,690
April	4.38	4.54	3.56	29,023	5,975	35,971
May	4.55	4.63	3.69	31,199	43,400	37,483
June	4.58	4.67	3.75	30,881	42,774	42,929
July	4.63	4.75	3.81	31,510	43,300	47,051
August	4.67	4.85	3.86	32,400	45,650	52,801
September	4.69	4.91	3.92	31,928	46,880	56,994
October	4.70	4.92	3.93	34,978	49,800	61,401
November	4.71	4.93	3.93	34,555	43,770	61,763
December	4.70	4.93	3.92	37,192	46,667	62,737

To prevent prices from soaring during the strike, the Price Administrator on April 2 issued a ceiling order for bituminous coal. Prices were frozen as of March 28 for the duration of the coal strike, the ceiling being revoked on May 1.

Although the market was thus stabilized during the strike, it was widely reported that if a settlement allowing a $1-a-day wage increase were accepted, prices would advance:

> An increase of 20 to 25 cents a ton in soft-coal prices was predicted by operators yesterday as the Joint Appalachian Conference * * * was moving forward in its efforts to reach an agreement on the basis of a flat wage increase of $1 a day for 450,000 miners in the Appalachian and outlying districts.[48]

These predictions were confirmed by Howard A. Gray, Director of the Bituminous Coal Division, who, on April 18, disclosed that "the Bituminous Coal Division would raise and coordinate minimum prices to protect all producers, North and South, against hardships resulting from wage increases." He further added that hearings would be called to revise the price structure set October 1, and stated that "any general increase in costs would be followed by a general upward revision of prices." [49]

[48] New York Times, April 9, 1941.
[49] Journal of Commerce, April 19, 1941.

Five days later, however, the Bituminous Coal Division published statistical data which indicated that the average cost of producing coal for all districts combined had dropped 18.8 cents or 9 percent between 1936–37 and 1940. This decline, from $2.09 a ton in 1936–37 to $1.90 in 1940, was attributed primarily to the growth of mechanical loading and to the increase in sales. It was especially significant, because the prices established by the Division in 1940 had been set as closely as possible to the $2.09 figure. In accordance with the provisions of the Bituminous Coal Act, the minimum prices, as established in 1940, yielded the coal industry an estimated minimum income averaging $2.07 per ton, which was as near to the average cost of $2.09 per ton during the base period as the income could be brought and still reflect the other requirements contained in the act.

As a consequence of this 19-cent decrease in costs between the base period and 1940, Secretary Ickes announced on April 23 that hearings would be held within a short time to determine whether the minimum prices should be reduced in accordance with the decline in cost.[50] However, no immediate action was taken on this program.

The effect of the wage agreement reached between the operators and the union on costs and prices was analyzed in a study published by the Bureau of Labor Statistics.[51] In this report it was found that the increases in cost resulting from the wage agreement were little more than the decreases which had taken place between 1936–37 and 1940; in other words, "average costs by minimum-price area after the 1941 wage changes are not greatly in excess of average costs in the price-base period." In summarizing the cost change in the Appalachian fields (minimum price area 1), which produces more than 70 percent of the country's bituminous coal, the report stated:

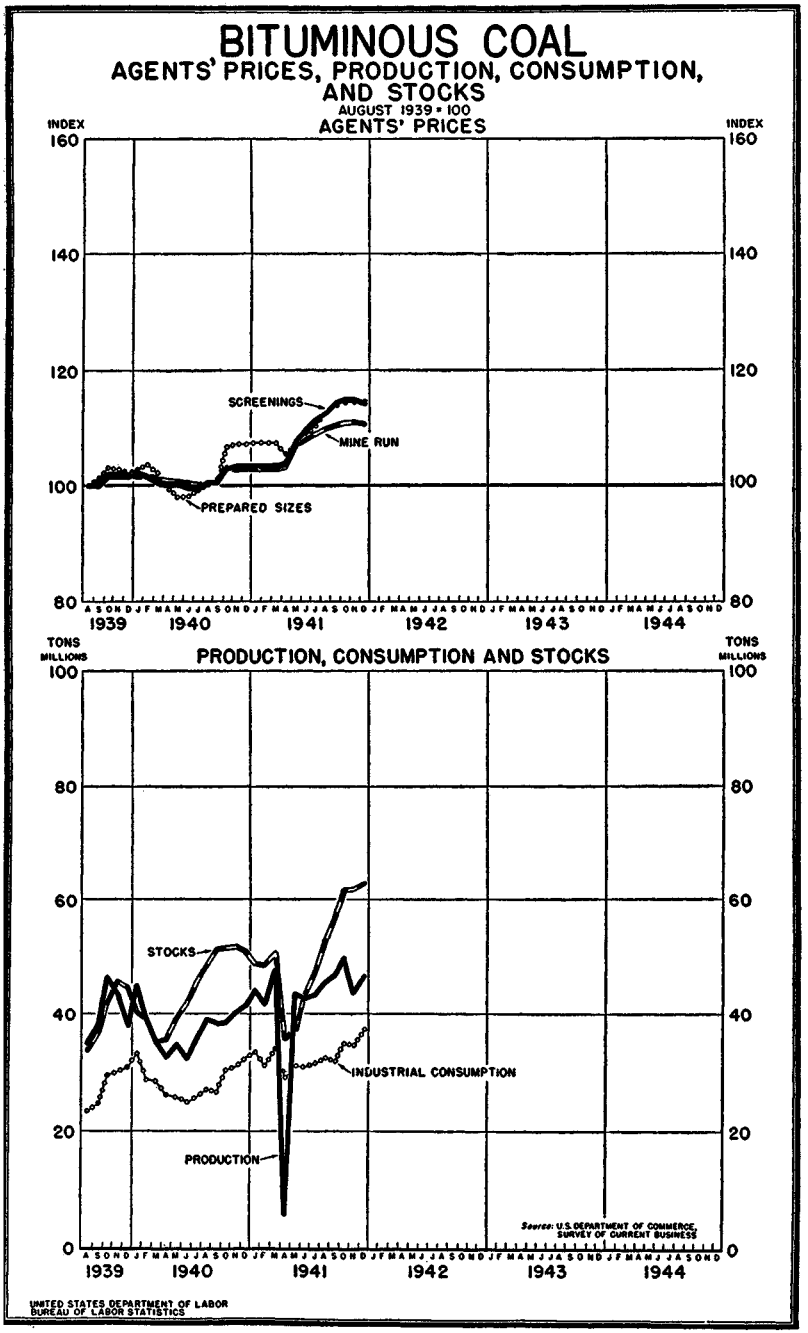
> On the basis of the estimated increases in wages paid per ton after the 1941 wage changes, and assuming no other changes in costs from the 1940 averages, the cost per ton in minimum-price area 1, after the 1941 wage changes, is 4.47 cents greater than in the price-base period.

The actual increase in prices which occurred after the end of the strike considerably exceeded this estimate of the rise in costs. Between April and August 1941 the average price of prepared sizes and mine run advanced 31 cents, and screenings rose 30 cents. The upward movement was sharpest immediately after the end of the strike and again upon the acceptance on June 5 of the report of the National Defense Mediation Board, recommending the elimination of the wage differential between northern and southern mines.

Thus, in the Boston area leading shippers during May advanced their prices 30 to 40 cents per net ton, "as a result of the wage concessions to the United Mine Workers." [52] Then in July, prices in the area were increased 15 to 25 cents per ton, an advance, which, reportedly was "the result of the operators' final surrender to the U. M. W. demands in the southern fields." [53]

Similarly in the Pittsburgh area, prices were increased both after the strike and after the elimination of the wage differential. In June, advances in bituminous-coal prices, following the wage boost of $1 a day, were placed in effect: Central Pennsylvania, 30 cents

[50] Journal of Commerce, April 24, 1941.
[51] Wage and Price Structure of the Bituminous-Coal Industry by Witt Bowden. (Monthly Labor Review, August 1941).
[52] American Metal Market, May 9, 1941.
[53] Idem, July 23, 1941.



a ton; Western Pennsylvania, 25 cents, etc.[54] In July, the prices were again increased, quotations on domestic sizes advancing 15 to 25 cents a ton.[55]

These increases were held to be unjustified by the Office of Bituminous Coal Consumers' Counsel. On May 11, the Acting Director of that agency stated:

> In the past week bituminous-coal consumers have reported that prices quoted on bituminous coal were from 15 to 35 cents a ton above minimum mine prices fixed under the Coal Act * * * it would seem obvious that most, and in some producing districts all, of the increase in labor cost required in the production of coal can be met out of present minimum prices.[56]

Following this announcement, the Consumers' Counsel moved to establish a ceiling over coal prices. On July 24, it petitioned the Bituminous Coal Division to establish maximum prices at approximately 10 percent above the existing minimum prices.[57]

Three weeks later the Bituminous Coal Division announced that hearings would be held, beginning September 9, to determine whether or not it should exercise its legal power to establish maximum prices, the Consumers' Counsel "charging that consumers are being seriously injured by excessive and oppressive coal prices in many markets, which, in many instances, approach the proportions of profiteering." [58]

During the course of the hearings, the Consumers' Counsel amended its petition, which originally had called for the establishment of maximum prices 10 percent above the minimum prices, to a request that the ceiling prices be set at levels 20 percent above the established costs.[59]

The arguments presented by the Consumers' Counsel were, however, regarded as inconclusive by the Bituminous Coal Division; the Director of the Division held that the Consumers' Counsel had failed to prove that "maximum prices are necessary because the coal industry is charging 'excessive and oppressive' prices." [60]

In the remaining months of the year, bituminous-coal prices moved slightly higher. The 4-day captive mine strike at the end of October brought some strengthening of price, but this resulted more from anticipated shortages than from any actual lack of supply.[61] Similarly, the 2-week renewal of the stoppage in November caused production to fall somewhat, but by the end of the month stocks in the hands of industrial and retail dealers were at the record level of 62,000,000 tons, in spite of the fact that industrial consumption was 47 percent higher than it had been in August 1939.

[54] American Metal Market, June 5, 1941.
[55] Idem, July 25, 1941.
[56] Journal of Commerce, May 12, 1941.
[57] Wall Street Journal, July 24, 1941.
[58] Journal of Commerce, August 15, 1941. This charge was later withdrawn during the time of the hearing.
[59] Idem, September 6, 1941.
[60] Idem, October 6, 1941.
[61] American Metal Market, November 6, 1941.

Chapter VIII.—Metals and Metal Products

Summary

In the light of their strategic position in a war economy, prices of metals and metal products as a group remained fairly stable during the Defense Period. The average increase between August 1939 and December 1941, as measured by the Bureau of Labor Statistics index, was only 11 percent, considerably less than the average advance for all other commodities and only a fraction of the advance in prices of metals and metal products during a comparable period in World War I. For several reasons discussed later in this chapter, actual price increases for this group of commodities are not fully reflected in the Bureau's index,[1] but on the average the difference does not appear to be so large as to alter the general conclusion drawn in this discussion.

Sharp price increases were confined mainly to zinc, some of the minor metals, and scrap metals of all kinds. Iron and steel prices rose moderately. The average advance for all major nonferrous metals between August 1939 and December 1941 was 14 percent. Prices of agricultural implements increased only 3 percent; plumbing and heating equipment,[2] 12 percent; motor vehicles, 21½ percent (see table 47.)

Understatement of price advances in the Bureau's index of metals and metal products arises mainly from the nature of price changes in the iron and steel industry. The Bureau's average price for iron and steel rose only 2 percent, but this average was computed almost entirely from published "base" prices. Particularly in the early months of the Defense Period, price increases in the steel industry were primarily indirect in form. That is, while published base prices generally remained unchanged or rose only slightly, "concessions" and deductions formerly allowed to purchasers were in many cases withdrawn, thereby increasing actual costs.[3] A special study by the Bureau of Labor Statistics shows that net-price increases to consumers, including concessions, deductions, and extras, ranged from 0.5 to 15 percent between the third quarter of 1939 and mid-1941.

These price advances for steel occurred in conjunction with the progressive development of a serious supply shortage as the National Defense Program expanded. In April 1941, maximum prices were established by the Office of Price Administration and Civilian Supply, and this order placed limits upon and materially reduced the extent of the indirect price increases which occurred thereafter during the Defense Period.

Markets for nonferrous metals were likewise affected by the rapid rise of demand to levels well above immediately available supply. Nevertheless, except for zinc, price advances were effectively limited by the prompt establishment of Government controls and the co-

[1] The chief reason is the fact that the greater part of the price advance for steel-mill products during Defense Period occurred in indirect form (see pp. 206-211). Such increases are not reflected in the published base prices for steel carried in the Bureau's wholesale price index.

In addition, the index does not include quotations for nonferrous scrap and certain imported ores, prices of which rose sharply during the Defense Period. However, prices of certain other products not in the index, such as industrial machinery, rose less than the average for all metals and metal products.

Unfortunately, available data are not sufficient for an accurate estimate of the amount by which the index understates the true extent of the price increase for this group.

[2] Prices of plumbing and heating equipment are discussed in Chapter IX—Building materials (see p. 253).

[3] For details see discussion on iron and steel (p. 199).

operation received from many producers. Average increases between August 1939 and December 1941 amounted to 7 percent for tin, 18 percent for lead, 20 percent for copper, and 70 percent for zinc. The price of aluminum departed from the general trend and declined 25 percent.

TABLE 47.—*METALS AND METAL PRODUCTS: Wholesale Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939=100) of —					
	All metals and metal products	Agricultural implements	Iron and steel	Motor vehicles	Nonferrous metals	Plumbing and heating
1939						
August	100.0	100.0	100.0	100.0	100.0	100.0
September	101.7	100.0	100.4	99.6	113.5	100.0
October	102.8	99.9	100.9	101.5	114.3	100.0
November	103.0	99.8	100.9	102.4	114.1	100.0
December	103.0	99.8	101.1	102.4	113.4	100.0
1940						
January	102.8	99.9	101.3	102.4	110.7	100.0
February	102.3	99.9	101.3	102.4	106.2	99.7
March	102.5	99.9	101.4	102.5	106.8	102.1
April	101.4	100.0	99.2	102.5	106.2	102.0
May	101.4	98.9	99.1	102.5	107.6	101.6
June	101.6	98.9	99.2	102.5	108.8	101.5
July	102.0	98.8	99.5	103.4	108.3	101.5
August	101.8	98.7	99.7	103.4	106.0	101.5
September	102.4	98.8	99.8	103.9	108.2	101.5
October	104.4	98.9	99.8	108.2	112.1	101.5
November	104.7	99.0	100.2	108.4	112.5	101.5
December	104.7	99.0	100.3	108.4	111.8	101.5
1941						
January	104.8	99.1	100.6	108.4	112.1	101.5
February	104.7	99.3	100.4	107.9	112.6	103.7
March	104.8	99.1	100.6	107.9	113.0	104.4
April	105.0	98.7	100.8	108.2	113.0	104.7
May	105.3	98.8	101.1	108.3	113.1	104.7
June	105.5	98.8	101.5	108.4	113.3	104.8
July	105.7	98.9	101.8	108.5	113.5	104.9
August	105.8	99.4	101.9	108.5	113.1	109.5
September	105.8	99.9	101.9	108.5	113.1	109.8
October	110.6	100.3	102.0	121.4	113.4	110.7
November	110.8	103.0	102.1	121.4	113.7	110.8
December	110.8	103.1	102.0	121.5	113.7	112.4

Except for aluminum, nonferrous metal prices shared in the speculative rise which occurred as soon as the war broke out in Europe, eased in the early months of 1940, and then turned up again as the pressure upon supplies intensified in the latter part of that year and throughout 1941. Beginning in September 1940, however, numerous Government orders controlling supply and price halted or retarded the price advance. Initially, informal price regulations were issued, later replaced by formal schedules. Priority control was established for all major metals.

In the case of zinc, the price increase between August 1939 and December 1941 was much greater than that for the other major metals, in part because of a serious bottleneck in smelting and refining capacity and later because of the need for working high-cost mines.

On the other hand, sharp price increases were general for scrap metals of all types and were a direct result of the general shortage

prevailing for primary metals.[4] The large number of small firms engaged in collecting and assorting scrap made control of supply and price difficult. The need for greater supplies involved certain higher costs of collecting and processing. The strong sellers' market made a broad expansion of profit margins simple. Thus, between August 1939 and their peaks in March 1941, prices of aluminum scrap rose as much as 112 percent; zinc scrap, 126 to 140 percent; and copper and brass scrap, 16 to 44 percent. The price of heavy melting scrap steel increased 43 percent. By December 1941, maximum prices had been established on virtually all scrap metal, and in many cases the ceilings fixed were substantially below the peaks reached in earlier months. Meanwhile, although evasion of price schedules was widely reported in scrap markets in certain periods, such reports had become relatively infrequent by the time of the attack on Pearl Harbor.

There were also substantial price increases for certain less important metals, and these were especially sharp for those obtained in whole or in part from abroad. The price of quicksilver, for example, rose 148 percent between August 1939 and December 1941; the price of chrome ore rose 149 percent, and iridium, 169 percent. Since these metals have particular uses essential to the war effort, their supply was of great concern and higher prices were in some part required to meet greater costs of transportation or to increase domestic production. On the other hand, markets for some metals such as iridium were at times highly speculative.[5]

The price increases for motor vehicles, which averaged slightly more than 21 percent over the Defense Period, came at the beginning of each of the three "model years," 1940, 1941, and 1942. The last of these advances was effected in the face of strenuous opposition from the Office of Price Administration. However, by the latter part of the Defense Period, output had been curtailed sharply because of the shortage of materials, on order of the Office of Production Management.

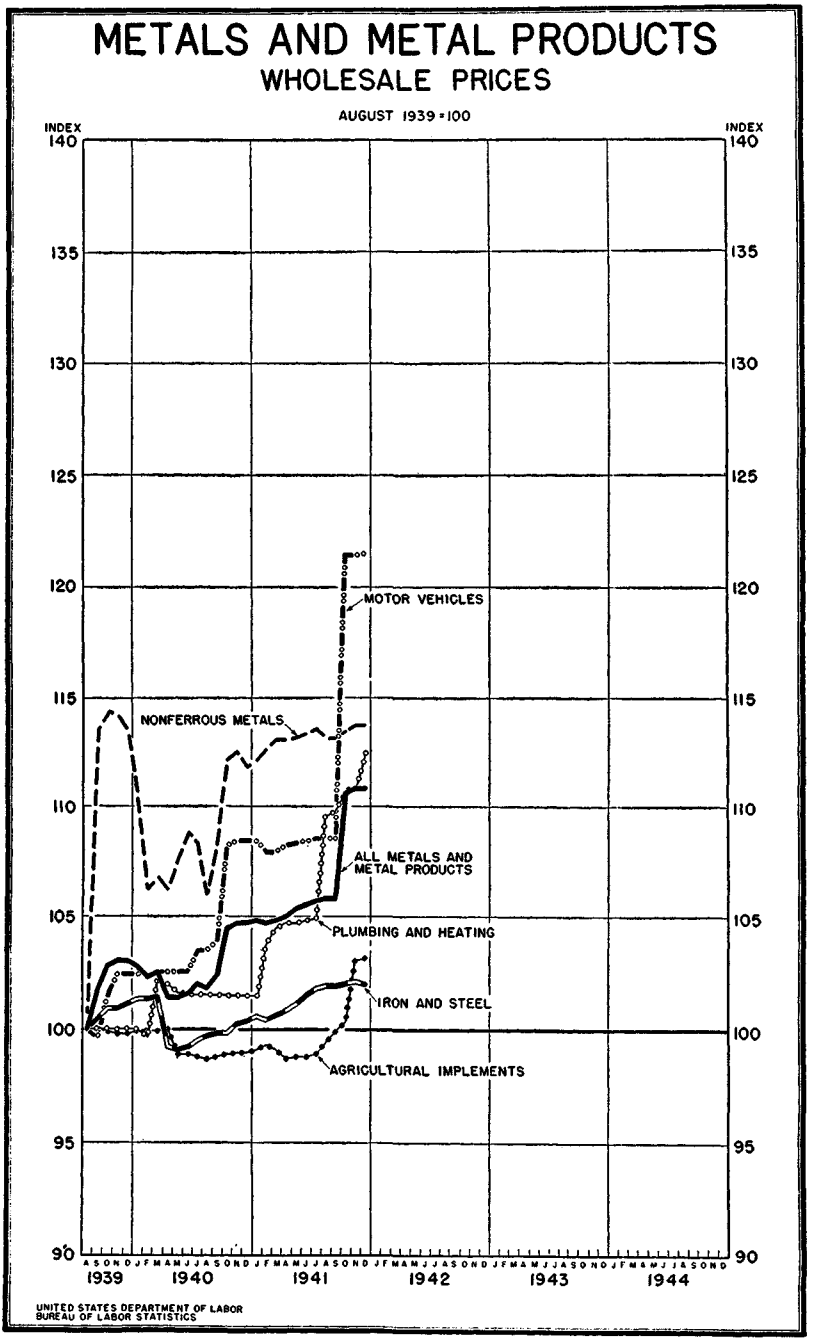
As previously indicated, the reasons underlying the generally moderate price advances for metals and metal products varied. In virtually all cases there were higher direct costs of production. Unit labor costs between 1939 and 1941 rose from 11 to 12 percent in steel works and rolling mills, in blast furnaces, and in nonferrous primary smelters and refineries.[6] For imported products such as chrome ore and tin, there were higher costs of transportation. For commodities such as quicksilver and zinc, there were the added expenses of operating mines formerly considered too costly to work in order to expand production. New facilities of many types were constructed to meet the growing demands of military preparation.

On the other hand, greater utilization of existing productive capacity reduced overhead costs substantially, and in combination with price increases, tended to expand profit margins. Partly because of this,

[4] There is an important difference, however, in the relationship between scrap and primary metal in the case of steel and in the case of nonferrous metals. Steel scrap is used as a raw material in new steel production, but nonferrous scrap is often melted and used as such, as a substitute for (or interchangeably with) virgin metal for many purposes.

[5] In 1 month in late 1940 the price of iridium more than doubled, rising from $163 to $350 per troy ounce. Following this rise the Price Stabilization Division of the National Defense Advisory Commission warned traders in iridium against speculative activity, and shortly thereafter the price declined to $190. (See OPA First Quarterly Report, 1942, p. 148.)

[6] Productivity and Unit Labor Cost in Selected Manufacturing Industries, 1919–40. Supplement 1941. (U. S. Bureau of Labor Statistics, mimeographed report.)



but also because of a much greater volume of business, profits in the industries producing metals and metal products rose on a broad scale.[7]

Of all commodity groups, metals and metal products present the most striking contrast in the behavior of prices in this war and in World War I. Prices of all metals and metal products from July 1914 to November 1916 (equivalent to a period from August 1939 to December 1941) rose 54 percent; of iron and steel, 103 percent; and of nonferrous metals, 114 percent. These sharp advances occurred in response to a flood of orders from belligerents, especially in 1916.

The difference between the two periods is mainly attributable to the timing and scope of Government price control. Price controls in World War I were not established until sometime after the United States actively entered the war, and there was little effective public pressure upon producing corporations to limit price increases during the earlier period. In the current war, the pressure of publicity and public opinion became effective soon after establishment of the National Defense Advisory Commission in May 1940, and was promptly supplemented by direct controls for leading metals early in 1941.

Iron and Steel

IRON ORE

In contrast to the trend for most products, prices of iron ore were somewhat lower in December 1941 than they had been in August 1939. Two successive price reductions in the spring of 1940 lowered prices on the average by about 10 percent; these quotations were maintained throughout the remainder of the Defense Period, despite the fact that stocks of ore fell to very low levels early in 1941.

In April 1940, the price of nonbessemer Mesabi iron ore f.o.b. lower Lakes ports was reduced from $4.95 per gross ton to $4.75; in May the quotation was further lowered to $4.45 (see table 48). Prices of bessemer ore, which ordinarily commands a differential of 15 cents per ton above nonbessemer, were reduced correspondingly. At the same time the United States Steel Corporation, reversing an established policy, placed some of its ore upon the market, selling a large quantity to a leading automobile concern.

As the defense program gathered momentum in the early fall of 1940, it became apparent that there was danger of a serious shortage in the early months of 1941. Steel operations were increasing rapidly

[7] Percentage increases in profits before and after taxes and in the dollar volume of sales between 1939 and 1941 for various metals and metal products industries were as follows. (Office of Price Administration, War Profits Studies Number I—Profits of 1753 Large Industrial Corporations, 1939–41.)

Industry	Percent of increase, 1939 to 1941		
	Profits—		Net sales
	Before taxes	After taxes	
Iron and steel	345.2	148.2	95.3
Nonferrous mining and products	128.5	62.1	54.1
Agricultural machinery	292.3	199.4	72.8
Railway equipment	422.9	247.1	146.9
Automobiles and accessories	155.4	40.2	85.5

and only a limited amount of ore could be shipped during the remainder of the 1940 shipping season before ice closed the Lakes shipping routes.[8] By March 1941, scarcities developed in some special grades of ore, and resort became necessary to years-old accretions of ores at various lower Lakes ports.[9]

To relieve the situation, ice breakers were put to work on the Soo Canal during March and ore shipments were resumed on the first of April, about 2 weeks ahead of the usual schedule. Eighty million tons of ore were moved during 1941, nearly 15 million tons above the previous all-time record. As a result, stocks at furnaces and Lake Erie docks by December 1 reached the record level of 45,500,000 tons.[10]

PIG IRON

Immediately upon the outbreak of the war, prices of all the important types of pig iron rose; the increase in the composite price of 5 types during September and October amounted to about 10 percent.

During the following 12 months, pig-iron prices remained generally stable. The decline in demand during the spring of 1940, and lower prices for steel scrap, brought no corresponding drop in pig-iron quotations.

The first effect upon pig-iron prices of the increase in steel operations resulting from the defense program was felt early in October 1940. One large producer raised his quotations by amounts ranging from $1.50 to $2 per ton, but this increase was not followed by the United States Steel Corporation and was not accepted by the industry. At the same time, the National Defense Advisory Commission called conferences with pig-iron producers in an attempt to head off a general price rise. It was announced that the Commission had made a survey of pig-iron costs and prices, and that, in the view of the Commission, the "demand outlook for pig iron does not now justify price increases." [11]

Two months later, however, trade journals reported that increases would probably be announced for the first quarter of 1941. This reflected the sharp upturn in steel production during the last half of 1940 which had, by the end of the year, brought most of the Nation's pig-iron producing facilities into operation. The December 12, 1940, issue of Iron Age reported that 201 furnaces were active, leaving not more than 22 idle furnaces; many of the latter were reported to be in need of extensive repairs, while others were very old and of small capacity.[12]

The first actual advance in price in December was announced on the 11th by a midwestern producer, who increased his price for the first quarter of 1941 by $1 per ton. This increase was generally adopted by the entire industry for the same period, although in the South it did not go into effect for several months.

The advance brought pig-iron prices for most grades to about $3 above pre-war levels. Between August 1939 and March 1941, basic pig iron had risen from $20.50 per gross ton to $23.50; foundry No. 2 northern, from $22.89 to $25.89; malleable valley, from $21 to

[8] Iron Age, September 12, 1940.
[9] Daily Metal Trade, March 21, 1941.
[10] American Metal Market, December 27, 1941.
[11] Wall Street Journal, October 28, 1940.
[12] Idem, June 2, 1941.

$24. In addition, the delayed increase in the South had, by April 1941, brought foundry No. 2 southern to $20 per gross ton as compared with $17 in August 1939. The Bureau of Labor Statistics composite price of pig iron by April was almost 15 percent above the pre-war figure, at which level it remained throughout the remainder of the Defense Period.

In the spring of 1941 an acute shortage of pig iron developed. This was aggravated in May by the coal strike which decreased the supply of coke and caused a number of furnaces to shut down. Even after settlement of the strike, the shortage continued. Trade journals, in the early summer, stated that pig-iron capacity was "admittedly less than required." [12] At the same time, they carried rumors of a further price increase.[13]

On June 24, the Office of Price Administration and Civilian Supply established ceiling prices for pig iron in an order which froze quotations at the existing levels. According to the Price Administrator, the shortage of pig iron (which was later estimated to be approximately 5 million tons for the year [14]) and the wage increases recently granted by the industry, "have been exerting pressure upon the price structure, causing the prices of certain grades and kinds of pig iron to be increased."

In addition to the advance in published prices, there were also some indirect increases resulting from the charging of premiums. Thus, a month before pig-iron prices were fixed, the magazine Steel (May 19, 1941) stated, "in occasional instances tonnage has been booked at premium prices from customers unable to obtain sufficient supplies from nearby producing points." In some cases, pig-iron buyers were required to pay freight charges normally absorbed by the producers. The May 5, 1941, issue of Steel reported that "some Midwest pig-iron producers are now selling f.o.b. furnace into outside districts, refusing hereafter to absorb freight."

The price ceiling established in June prevented further advances in the base price of pig iron and also prohibited the charging of premiums or other changes in terms of sale which would result in higher costs to the buyer.[15] The order specifically stipulated that "the price limitations set forth in this Price Schedule shall not be evaded by * * * direct or indirect methods."

The pig-iron supply situation remained so tight, however, that even after the ceiling was established various attempts were made to obtain higher prices by passing freight charges on to the buyer.[16] The Office of Price Administration on occasion allowed such changes where the producer was selling in an area in which he had not previously operated and where such sales would otherwise have necessitated heavy freight absorption. However, the amount of tonnage affected was negligible.

As the Defense Period came to a close, there appeared to be an acute shortage of supply. Although production in 1941 totaled 55,900,000 tons, a gain of 18 percent over the previous record year of 1929, the sustained high rate of steel operations continued to strain the

[12] Wall Street Journal, June 2, 1941.
[13] American Metal Market, June 5, 1941.
[14] Journal of Commerce, August 2, 1941.
[15] In effect, the ceiling froze the delivered price since the "governing basing point" was defined as "that basing point the use of which results in the lowest delivered price at the place of delivery * * *."
[16] For example, certain producers in Toledo, selling in the Cincinnati area, planned in December to quote prices f.o.b. point of origin instead of at the customary basing point, Hamilton, Ohio, which would thereby increase the delivered price at Cincinnati by $1.80 per ton when purchased from Toledo. (Journal of Commerce, November 17, 1941.) This particular advance was permitted.

216 blast furnaces in operation. The pig-iron shortage for 1942 was estimated in November by the Office of Production Management at 6,400,000 tons,[17] a situation whose gravity would increase if the steel-scrap market became tighter.

TABLE 48.—*IRON: Wholesale Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	All types: Price index [1] (August 1939=100)	Pig iron: Wholesale price per gross ton			Iron ore: Wholesale price per gross ton	
		Basic, gross ton	Foundry No. 2 northern, gross ton, Pittsburgh	Malleable valley, gross ton	Bessemer [2]	Nonbessemer [2]
1939						
August	100.0	$20.50	$22.89	$21.00	$5.10	$4.95
September	104.9	21.50	23.89	22.00	5.10	4.95
October	109.8	22.50	24.89	23.00	5.10	4.95
November	109.8	22.50	24.89	23.00	5.10	4.95
December	109.8	22.50	24.89	23.00	5.10	4.95
1940						
January	109.8	22.50	24.89	23.00	5.10	4.95
February	109.8	22.50	24.89	23.00	5.10	4.95
March	109.8	22.50	24.89	23.00	5.10	4.95
April	109.8	22.50	24.89	23.00	4.90	4.75
May	109.8	22.50	24.89	23.00	4.60	4.45
June	109.8	22.50	24.89	23.00	4.60	4.45
July	109.8	22.50	24.89	23.00	4.60	4.45
August	109.8	22.50	24.89	23.00	4.60	4.45
September	109.8	22.50	24.89	23.00	4.60	4.45
October	109.8	22.50	24.89	23.00	4.60	4.45
November	109.8	22.50	24.89	23.00	4.60	4.45
December	111.4	22.90	25.29	23.40	4.60	4.45
1941						
January	113.5	23.50	25.89	24.00	4.60	4.45
February	113.5	23.50	25.89	24.00	4.60	4.45
March	114.1	23.50	25.89	24.00	4.60	4.45
April	114.7	23.50	25.89	24.00	4.60	4.45
May	114.7	23.50	25.89	24.00	4.60	4.45
June	114.7	23.50	25.89	24.00	4.60	4.45
July	114.7	23.50	25.89	24.00	4.60	4.45
August	114.7	23.50	25.89	24.00	4.60	4.45
September	114.7	23.50	25.89	24.00	4.60	4.45
October	114.7	23.50	25.89	24.00	4.60	4.45
November	114.7	23.50	25.89	24.00	4.60	4.45
December	114.7	23.50	25.89	24.00	4.60	4.45

[1] Includes five series.
[2] Iron ore, Mesabi, lower Lakes ports.

SCRAP STEEL

The price of steel scrap rose rapidly after the outbreak of war and again in the fall of 1940; the total increase for representative grades between August 1939 and December 1941 approximated 20 to 35 percent. Because of the critical importance of steel scrap to the economy, this advance constituted one of the most urgent and most difficult problems of Government price control during the period from the initiation of the defense program in June 1940 to the attack on Pearl Harbor in December 1941.

In the first 2 months after the war began in Europe, prices of steel scrap advanced sharply, the heavy melting price published by the Bureau of Labor Statistics rising from $13.88 per ton in August 1939 to $19.05 in October.[18] Prices then dropped during the last 2 months of the year, partly because it appeared doubtful that the British would

[17] Journal of Commerce, November 17, 1941.
[18] Per gross ton, bulk, f.o.b. Chicago.

be able to provide enough ships to transport the reportedly enormous tonnages which they had bought in this country.[19]

During the early months of 1940 steel-scrap prices showed little change. However, although the price of scrap ordinarily varies directly with the rate of steel operations, a material decline in this rate during the first half of 1940 was not accompanied by any drop in scrap prices.

Following the beginning of the defense program in June 1940, and the rapid expansion in steel operations which ensued, scrap prices advanced steadily, heavy melting rising from $18.03 per gross ton in August to $20.60 in December.[20] On October 8, 1940, the Price Commissioner called a meeting of steel producers and scrap dealers to discuss this increase in scrap prices. "On the eve of the conference," according to the Wall Street Journal of October 8, 1940, "the attitude of officials was that nothing in the supply-demand situation justifies the recent sharp rise in scrap prices, particularly the 'jumpy' way in which the prices have moved."

Although it was reported that producers had agreed to cooperate "in preventing wide fluctuations in scrap prices," [21] the meeting disclosed considerable difference of opinion concerning what was to be regarded as a "desirable" price. It was contended by some that the suggested prices were not high enough to attract sufficient scrap in view of the high rate of steel operation and by others that uncontrolled rising prices would aggravate the shortage by encouraging hoarding.[22] The latter group also asserted that prices higher than those then prevailing for scrap would threaten the stability of steel prices and that the cost increases would fall chiefly on small steel producers.

These producers, through the chairman of their organization, the Independent Steel Producers, stated their position in the following terms:

> Rising scrap prices would lift the cost of steel production and enormously complicate the problem of avoiding the spiralling of prices. Certainly it would be a great blow to the small nonintegrated steel producer now engaged in defense work. I see no justification for any sharp advance in scrap prices.[23]

In the meantime the price of scrap continued to rise from the date of the first conference in October to the end of the year. At the beginning of 1941, on January 10, Price Commissioner Henderson, addressing the Scrap Iron and Steel Institute, stated that these increases were not justifiable and called for immediate price reductions.[24] At the same time, the National Defense Advisory Commission issued a statement calling for a reduction of approximately $3 a ton. Within a few days after this warning, scrap quotations at principal centers were reported to be $0.50 to $2.00 a ton lower on a majority of grades.[25]

The Government also took steps to obtain the cooperation of leading railroads, the largest single source of scrap, in limiting the prices charged for their scrap. Thus No. 1 heavy melting (a railroad grade) was restricted to $21 per gross ton, Pittsburgh, a reduction of $1 per ton from the January price.

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[19] Journal of Commerce, November 30, 1939.
[20] Institute of Scrap Iron and Steel Yearbook, 1940, p. 3.
[21] New York Times, October 11, 1940.
[22] During the early part of the 1940 increase, for example, it was reported that "gatherers and dealers, as well as producers of scrap, such as the automobile manufacturers, are holding back supplies in expectation of higher prices. This practice tends to hasten the rise." (Journal of Commerce, September 18, 1940.)
[23] Journal of Commerce, December 7, 1940.
[24] American Metal Market, January 10, 1941.
[25] Idem, January 14, 1941.

Quoted prices for scrap dropped following these steps, but it soon became apparent that many "bootleg" sales were being made at prices above the nominal figures. According to the American Metal Market of March 29, 1941:

> There is a sinister word that has crept back into popular use in the scrap trade: "Bootlegging." And it applies to the quiet selling of iron and steel scrap at prices well above the maximum levels previously suggested, but not demanded, by the Government. It is not uncommon for buyers to ask for two prices on scrap—first, the legitimate price; then, the bootleg price. And there's no mistaking or denying the fact that a large amount of so-called "bootleg" business has been recently transacted.

Because of this "bootlegging" and of uncertainties surrounding the suggested prices, a formal price ceiling for iron and steel scrap was established on April 2 at levels from $1 to $3 per ton below those then in effect. Scrap dealers were reported by trade journals as greatly opposed to these ceilings, arguing that prices were too low, that sufficient scrap would not be drawn out, that shortages would develop, and that steel operations would be hampered.[26]

Trading in marketed scrap fell off sharply, partly because of widespread hoarding. Two months after the ceiling had gone into effect, the Price Administrator openly condemned this practice, adding that it was accentuated by the "circulation of rumors to the effect that ceiling prices were to be raised in substantial amounts." The Commissioner then requested the Department of Justice to investigate. He stated that there were approximately 15 large brokers of iron and steel scrap who supplied roughly 90 percent of the scrap purchased by steel mills, and that "the control thus exercised through these combinations has, by inviting the expectation of increased prices, encouraged the hoarding of iron and steel scrap and thus seriously shortened an already reduced supply."

The slump in marketed scrap was offset to some extent by a marked increase in "direct dealing" between primary suppliers of scrap and the steel mills. Thus, mills entered into agreements with purchasers for the return of any scrap derived from processing, thereby insuring their receipt of all scrap provided by their own steel operations.[27]

Although scrap dealers objected to these practices,[28] their effect was to stave off temporarily a general scrap shortage.[29]

By the end of August 1941 scattered instances were reported of steel mills and foundries which had been forced to suspend operations because of inadequate scrap supplies. In the meantime bootlegging had apparently developed on a large scale. The Wall Street Journal of August 25, 1941, stated that the scrap-price schedule was admitted by OPACS as "being violated 100 percent." Scrap, in some instances, was reported to be "selling for as much as $5 above the ceiling prices."

In an effort to speed the flow of scrap, the ceiling was modified in September, and again in October. The first revision was designed to bring out scrap in areas remote from consuming centers by allowing higher shipping point prices on scrap in nine States and permitting consumers to pay greater transportation charges from these areas.

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[26] Indications of this attitude are to be found in the following 1941 issues of these publications: Journal of Commerce, May 16, June 13 and 19, July 25, August 12; American Metal Market, June 17 and 26, August 8; Wall Street Journal, May 1, July 16, 24, and 26; Waste Trade Journal, April 12; Daily Metal Trade, July 12.
[27] Journal of Commerce, July 18, 1941.
[28] Idem, July 25, 1941.
[29] Cf. New York Journal of Commerce, June 27, 1941; American Metal Market, July 29, 1941.

Under the second revision, arrangements were made to grant buyers special permission to pay prices in excess of the ceiling on imported scrap.

Even before these revisions, the help of the Office of Production Management had been enlisted to obtain a larger flow of scrap, which would move at prices within the ceiling levels. It was announced on August 25 that iron and steel scrap would be placed under full priority control, and sale of scrap without authorization of the Priorities Division was prohibited. The belief was expressed that this would result in observance of the prices which had been established.[30] The order was issued on October 9, but it does not appear to have been uniformly observed, although the Office of Production Management on December 3 forced five large dealers to reallocate scrap steel in accordance with the regulation.

At the same time, the Office of Price Administration was taking direct steps to enforce its ceilings. On October 9 it induced a large broker to refund to buyers all amounts in excess of ceiling levels on sales subsequent to September 2. This procedure was repeated on several occasions, the names of violators who agreed both to refund excess charges to buyers and to obey the order being withheld from publication. However, on December 6, the day before Pearl Harbor, two firms were publicly cited for refusing to desist from persistent violations.

Throughout this period, compliance appears to have been unsatisfactory.[31] When the City of New York in September asked for bids on scrap reclaimed from an elevated structure, several bidders publicly offered prices above the ceiling.[32] In Los Angeles, widespread violations were reported, premiums of 75 percent being paid on some sales.[33]

TABLE 49.—*HEAVY MELTING SCRAP STEEL:*[1] *Wholesale Prices, January 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Month	Wholesale prices per gross ton			Month	Wholesale prices per gross ton		
	1939	1940	1941		1939	1940	1941
January	$13.85	$16.38	$20.00	July	$13.56	$17.35	$18.75
February	14.06	15.75	19.25	August	13.88	18.03	18.75
March	14.25	15.69	19.88	September	16.22	19.22	18.75
April	13.38	15.33	18.95	October	19.05	19.75	18.75
May	12.80	16.88	18.75	November	17.66	20.06	18.75
June	13.56	18.19	18.75	December	16.56	20.60	18.75

[1] Scrap steel, bulk, f. o. b. Chicago.

The flow of scrap also remained inadequate. The Bethlehem Steel Co. on October 20 was forced to shut down five open hearth furnaces at its Lackawanna steel plant because of the shortage,[34] and plants in other areas were also forced to curtail steel operations.[35] On November

[30] Wall Street Journal, August 25, 1941.
[31] Cf. American Metal Market, September 12, 1941; Journal of Commerce, September 19, 1941; New York Times, December 4, 1941.
[32] American Metal Market, September 16, 1941.
[33] Los Angeles Times, November 9, 1941.
[34] Journal of Commerce, October 21, 1941.
[35] American Metal Market, December 9, 1941.

1, it was announced by the Office of Production Management that a "serious shortage of iron and steel scrap" was imminent and had already resulted in some reduction in steel output.

STEEL

As the rearmament program gained momentum, steel production became progressively inadequate for total civilian and military demands. The results during the Defense Period were a depletion of mill and warehouse inventories, expansion of production facilities, and progressive conversion from production for civilian needs to armament. Some advances in price, principally indirect in form, accompanied the increase in demand.

The term "price of steel" requires some explanation. Although steel mills sell some "semifinished" products (ingots, blooms, and billets), their principal sales are "finished" products (sheets, strip, bars, rods, structural shapes, tubular goods, and wire products). Each of these products is made in many sizes and shapes and with varying chemical analyses and physical qualities. The calculation of a price for most products starts with the so-called "base price" [36] which applies, in principle, to the cheapest size and type of the given product and to an order of stipulated size. For smaller orders, for sizes more difficult to roll, or for more rigorous specifications than those covered by the base price, the customer's price will be augmented by "extras" which are determined by reference to a detailed "Extra Book" ("extras" of the leading steel companies are alike). Conversely, on orders with less rigid specifications than those covered by the base price, "deductions," also listed in the Extra Book, are subtracted from the base price. The third element in a steel price is freight, which is railroad freight, and normally is calculated from the recognized "basing point" nearest the consumer's establishment.

The final price then, is the sum of "base price," "extras" (minus deductions), and freight from the applicable basing point. This resultant "published price" is identical for all steel mills for a given customer. In practice this "published price" is often modified by "concessions" granted buyers in a strong bargaining position, particularly when steel mills are not operating at capacity. The granting of concessions is an indirect method of reducing steel prices, as compared to the direct reduction in base price or extras.

During the Defense Period, the most important changes which occurred in the prices of steel were indirect, involving the withdrawal of concessions which had been granted during the buyer's market preceding the outbreak of war. There were, of course, some direct increases in published prices. Higher charges were made for a few extras, and some new extras were imposed in part at least to offset the expenses of meeting the more rigid specifications required of steel for military material. Minor increases in the base price of several steel products also were announced. Among these few changes in base prices, between August 1939 and December 1941, were hot-rolled sheet and strip from $2 to $2.10 per 100 pounds and wire rods from $43 to $44.80 per gross ton.

[36] Base prices of many steel products are published regularly in certain trade journals and with few exceptions these are the steel prices included in the BLS wholesale price index.

The indirect changes in price which constituted, as previously stated, the most important increases in actual steel prices during the Defense Period are difficult to measure statistically on any over-all basis. In general, they may be regarded as falling into the following three major types: (1) Withdrawal of concessions; (2) shift to higher priced sources of supply, such as warehouses; and (3) customers' "absorbing" freight on "dislocated tonnages."

Concessions are reductions from the published prices of the steel companies, and usually conform to one of the following patterns: (a) Reductions in base prices; (b) discounts for special reasons; (c) waiving some of the extra charges for which the customer's specifications call; (d) delivery of material of higher specifications than that shown on the invoice; and (e) rebates based upon the total quantity of steel purchased over a given period of time.

This last type of rebate was quite commonly given to large purchasers of certain types of steel. Information on such rebates is difficult to obtain, but it is probable that their use was curtailed during the Defense Period.

Withdrawal of Concessions

Some indication of the extent to which the withdrawal of concessions affected the price of steel during the Defense Period may be gained from a special survey of Consumers' Prices of Steel Products, conducted by the Bureau of Labor Statistics for the Office of Price Administration during 1942. (See table 50.) In the first illustration, the increase resulted from the revocation of concessions from the base price. In each case, the buyer had in August 1939 received a reduction of 40 cents a hundred pounds from the published base price. By May 1941, the concession was reduced to 15 cents, and at the end of the year it had disappeared altogether.

The second illustration shows the withdrawal of a special discount previously granted. The purchaser in this case claimed the pipe produced by the mill in question was much more difficult to machine than the pipe produced by certain competitors. To meet this alleged deficiency, the mill had in August 1939 granted a special discount of 10.1 cents per foot, but by the latter part of 1941, this special machining discount had been discontinued. On the other hand, a much larger special discount remained in effect. It is noteworthy that the customer did not change his source of supply when the special machining discount was withdrawn.

The third example illustrates a somewhat different method of obtaining a higher price—i. e., charging for a regular "extra" which previously had been waived. In this case, the steel maker formerly had granted a concession by failing to charge the customary extra for "heading"—a special softening process to make wire suitable for rivets. When the steel company began to charge for this extra, the actual price increased 50 cents per 100 pounds.

In many cases, sellers who had failed to charge the appropriate extras for departures from base-price specifications in 1939 imposed these extras when the market grew tighter. At various times in the past, cold-rolled sheets, for example, had been billed as hot-rolled sheets, bars requiring added chemical constituents were invoiced as standard carbon steel bars, and special sized steel strip as sheet.

TABLE 50—*STEEL: Indirect Price Increases, Selected Dates, 1939–42*

[Source: Data submitted by purchasers to U. S. Bureau of Labor Statistics]

Commodity	Date	Published base price	Actual base price paid	Freight from basing point	Extras actually paid (size)	Total unit price paid (delivered)
EXAMPLE 1.—Withdrawal of Concessions in Base Prices						
Reinforcing bars (100 pounds):						
½" round	Aug. 13, 1939	$1.90	$1.50	$0.095	$0.20	$1.795
	May 27, 1941	2.15	2.00	.095	.20	2.295
	Dec. 31, 1941	2.15	2.15	.095	.20	2.445
¾" round	Aug. 28, 1939	1.90	1.50	.095	----------	1.595
	May 27, 1941	2.15	2.00	.095	----------	2.095
	Jan. 15, 1942	2.15	2.15	.095	----------	2.245

Commodity	Date	Published base price	Actual net price at basing point	Freight from basing point	Discounts actually allowed: Special discounts	Discounts actually allowed: Special discounts for machining[1]	Total unit price paid (delivered)
EXAMPLE 2.—Withdrawal of Special Discounts							
Standard pipe (per ft.)	Aug. 12, 1939	$4.12	$1.37	$0.13	$2.649	$0.101	$1.50
(10¾" O.D., 40–48 lbs)	Apr. 23, 1941	4.12	1.432	.13	2.587	.101	1.562
	Dec. 22, 1941	4.12	1.471	.13	2.649	----------	1.601

Commodity	Date	Published base price	Actual base price paid	Freight from basing point	Extras: Size	Extras: Processing[2]	Extras: Heading[3]	Total unit price paid (delivered)
EXAMPLE 3.—Withdrawal of a Conceded Extra								
Manufacturer's wire	Aug. 17, 1939	$2.60	$2.60	$0.32	$0.10	$0.60	----------	$3.62
(per 100 lbs.) (0.118"	Apr. 24, 1941	2.60	2.60	.32	.10	.60	----------	3.62
bright basic wire)	Feb. 7, 1942	2.60	2.60	.32	.10	.60	$0.50	4.12

Commodity	Date	Published base price	Actual base price paid	Freight from basing point	Extras: Size	Extras: Phosphorus[4]	Extras: Sulphur[4]	Extras: Mill run	Total unit price paid (delivered)
EXAMPLE 4.—Withdrawal of Concessions by Reverting to Accurate Specifications									
Plates: (per 100 lbs.)	May 15, 1941	$2.10	$2.10	$0.1303	-------	-------	-------	-------	$2.2303
(⅜" x 67⅛" x 10'11"	May 14, 1942	2.10	2.10	.1384	-------	$0.05	$0.15	-------	2.4384
RX 788)									
Cold-rolled strip (per									
100 lbs.)	Sept. 21, 1939	[5] 3.05	2.75	.15	-------	-------	-------	−$0.10	2.80
(0.065 x 12½" x 96")	June 23, 1941	[5] 3.05	3.05	.15	-------	-------	-------	−.10	3.10
	Apr. 15, 1942	[6] 2.80	[7] 2.80	.15	[7] $1.20	-------	-------	-------	4.15

[1] Allowance made because of difficulty of machining this pipe.
[2] A process to soften the wire.
[3] A further softening process to make the wire suitable for rivets.
[4] Steel furnished earlier than May 1941 had the same chemical analysis but extras on chemical content were waived.
[5] Base price of sheet.
[6] Base price of strip.
[7] Priced as strip but previously sold as sheet.

As illustrated in the fourth example, one buyer had been purchasing, at no extra charge, plates with phosphorus and sulfur content below that normally found in carbon steel. In 1942 listed extras amounting to 20 cents per 100 pounds were imposed, for reducing the phosphorus and sulfur content. Prior to April 1942 the same buyer had been obtaining cold-rolled strip, billed as sheets. Although the base price for strip is slightly lower than for sheets, the change to the strip designation in 1942 made it possible for the producer to impose a size extra of $1.20, resulting in a price increase of $1.05 per 100 pounds. The mill in this case also withdrew the special concessions which the customer had been granted for accepting mill-run material.

Shift to Higher Priced Sources of Supply

As the demand for steel increased under the defense program, many buyers who had formerly experienced no difficulty in purchasing less-than-carlots of steel from mills were forced to obtain their supplies from warehouses at the higher prices applying to less-than-carlot shipments. For example, an Eastern seaboard manufacturer, during the depression years, had been purchasing a certain type of steel from a nearby rolling mill in less-than-carlots at $2.10 per hundredweight, delivered. As the business of the mill increased, such small orders, were no longer accepted, and the customer was forced to obtain his supply from a rather distant warehouse at a delivered price of over $6 per hundredweight.

At times carload purchasers who wanted steel immediately turned to warehouses to supply their needs. Since the warehouses were only allowed to sell less-than-carlots, carload buyers either placed more than one order or bought from more than one warehouse at the higher less-than-carlot prices. Deals of this kind probably were not contemplated by OPA under its ceiling orders.

Dislocated Tonnage

The third type of indirect increase pertained to the extra freight costs caused by the so-called "dislocated tonnage." Large backlogs of orders for particular types of steel made it unnecessary and undesirable for many mills to change their rolls frequently. Customers who wanted early deliveries had to go outside their normal sources of supply in order to obtain steel when it was needed. Some consumers turned to warehouses, as described above, others shopped around until they found a mill which could fill their order. Frequently this mill was outside the customer's normal basing-point territory. Under the ordinary operation of the basing-point system, this should not have affected the delivered price, since the mill would charge only the freight from the basing point nearest the buyer and absorb the difference. In the sellers' market that developed during 1941, however, the competitive pressure leading to such absorption was absent, and the consumer in many instances was required to pay the added freight costs. In certain circumstances the Office of Price Administration considered this practice legitimate.

A special case of "dislocated tonnage" is that of the Pacific Coast consumers. In peacetime, prices of much of the steel sold on the Pacific Coast were predicated on a combination of rail and water freight rates through the Panama Canal With the virtual closing of

the Canal to commercial intercourse, the Pacific Coast consumers of steel had to pay the all-rail freight from their sources of supply in the Middle West and on the Eastern Seaboard. In one case coming to the attention of the Bureau of Labor Statistics, the all-rail freight charge increased the delivered price more than $1 per hundredweight, or almost 50 percent.

It is difficult to determine the over-all extent of these various indirect advances in steel prices. There can be little doubt, however, that their importance steadily increased from the beginning of the defense program to the imposition of a price ceiling in the spring of 1941, and that by April, the month preceding the ceiling, indirect price increases of these kinds had become common.

Some indication of the net effect of all these increases, however, may be obtained from averages computed on the basis of the Bureau of Labor Statistics steel consumers survey for representative firms and transactions.[37] Percentage increases in delivered prices are shown in the following statement for eight types of steel, comparing the second quarter of 1941 with the third quarter of 1939. Increases range from a half of 1 percent for cold-finished bars to 15 percent for hot-rolled strip. Changes in base prices were only a minor factor in these advances, as may be seen from the base-price figures shown for August 1939 and December 1941.

	Delivered prices [1]—Percent of increase 3d quarter, 1939, to 2d quarter, 1941	*Base prices [2] per hundredweight (Pittsburgh)*	
		August 1939	*December 1941*
Cold-rolled sheets	8	$3.05	$3.05
Hot-rolled sheets	11	2.00	2.10
Universal and sheared plates	3	2.10	2.10
Merchant bars	1	2.15	2.15
Cold-finished bars	([3])	2.65	2.65
Hot-rolled strip	15	2.00	2.10
Cold-rolled strip	5	2.80	2.80
Structural shapes	2	2.10	2.10

[1] Preliminary. Source: Bureau of Labor Statistics Survey of Consumers' Prices of Steel Products.
[2] Source: The Iron Age, January 7, 1943, pp. 205–208.
[3] One-half of 1 percent.

Wage Increases and the Price Ceiling

While the advance in prices, principally indirect, was one of the reasons for placing a price ceiling over the steel industry, the immediate event prompting this action was the granting of a wage increase. By April 15, 1941, most of the large steel companies had put into effect a 16-percent wage advance, raising the basic wage from 62½ to 72½ cents an hour. Following these increases, there were reports to the effect that steel prices would be raised.[38] To forestall such action, the Office of Price Administration on April 17, 1941, issued a schedule, freezing steel prices at the levels which had prevailed during the first quarter of 1941. In announcing the order, specific mention was made of the indirect increases which had been occurring in steel prices:

[37] However, "the extent of price concession shown by this survey is probably understated. First, it is likely that certain big consumers not included in the study receive large concessions (which were withdrawn); and second, the price series obtained, with few exceptions, do not include those concessions which take the form of rebates based upon the volume of steel purchased during a given period." (Consumers' Prices of Steel Products, by Willard Fazar and Fay Bean, Bureau of Labor Statistics mimeographed report, March 31, 1943.)
[38] Wall Street Journal, April 15, 1941.

Despite the fact that published base prices have remained unchanged, concessions have disappeared, extra charges have been increased, and in some cases, premiums have been obtained. In addition, certain contracts have escalator clauses which enable producers to add certain additional costs to contract prices.[39]

The establishment of the ceiling, however, did not put an end to all increases in the cost of steel to buyers.[40] In the first place, a large volume of steel had been sold prior to the ceiling to big users at prices considerably below the published quotations which were established as the ceiling levels, and producers who had been granting concessions were permitted to raise their quotations to the level of the published figures. In addition, a number of minor upward revisions were made in the ceiling itself, though these revisions did not result in any material change in the general level of steel prices. Finally, a few high-cost companies were granted specific permission to charge prices above the general ceiling levels, but the tonnage involved was negligible.

As the Defense Period drew to a close, however, the price increases resulting from these factors—the movement of actual prices up to the ceiling levels, the purchase of steel from warehouses, added freight due to "dislocated tonnage," and the revisions or exemptions from the ceiling—had largely run their course, and by the end of 1941 prices of steel had apparently become relatively stable.

Copper

The net advance in the price of copper from the beginning of the war in Europe to the end of the Defense Period in the United States amounted to 20 percent, the quotation for electrolytic copper (delivered, Connecticut Valley) rising from 10 cents per pound in August 1939 to 12 cents in December 1941. The price advance was limited, with the cooperation of leading producers, under an informal understanding with Price Commissioner Henderson which was subsequently translated into a formal price ceiling. Price stability was maintained during the latter part of 1941, despite the fact that the supply of copper was rapidly becoming one of the most critical problems confronting the defense program.

Immediately after the outbreak of war in 1939, the price of copper started an advance which carried it from 10 cents per pound in the first part of August to 12½ cents in November (see table 51). This rise partly reflected the anticipation that Britain and France would need large quantities of copper in their armament programs and also the efforts by many American copper users to replenish their depleted stocks.

On September 13, President Roosevelt, in referring to this price advance, stated that at 12½ cents a pound a great deal of copper could be produced and sold in this country profitably. The President indicated that if copper advanced very much above the existing level, Government action would be taken to prevent a repetition of the first World War inflation which carried the price of copper to 36.6 cents per pound.

By the turn of the year the demand for copper had begun to subside, owing to inactivity on the western front, reliance of the Allies upon African and South American ore, and late 1939 accumulations

[39] OPA Press release No. PM 279, April 17, 1941.
[40] The BLS survey showed some increase in delivered prices between the third quarter of 1941 and April 1942.

of stocks by domestic consumers. Producers' stocks of refined copper rose sharply, as shown in the chart on the next page. At the same time deliveries to domestic customers lagged, while crude production maintained the comparatively stable rate which was to characterize it throughout the entire 2¼-year period. As a consequence, copper prices slowly but steadily declined, dropping from 12.2 cents in January to 10.8 cents in July.

The copper market reached its lowest point in June upon the capitulation of France. That nation had for some time been shipping large amounts of foreign copper under bond to this country for refining; the cancelation of these orders created fears that copper supplies would back up on the domestic market.[41] This weakness in the copper market was illustrated by frequent sales, during the early months of 1940, by copper producers to the Government at prices well below the prevailing market. In July, for example, the Kennecott Copper Corporation sold 2 million pounds of grade A copper to the Navy at a price three-fourths of a cent below the regular producers' market quotation.[42]

By the fourth quarter of 1940, however, a fundamental change in the market had become apparent under the influence of expanding defense needs. Producers' stocks were declining sharply, while domestic deliveries were increasing. These trends, coupled with stability of production, advanced the domestic producers' quotation from 10.9 cents in August to 12 cents in October, where it remained for the remainder of the Defense Period. According to the Daily Metal Trade of December 12, 1940:

> Not so long ago we were trying to keep copper stocks from piling up but in less than 6 months we may be faced with a severely depressed stock situation. This is the domestic copper situation in a nutshell: Monthly consumption of 103,000 tons * * * monthly domestic production of 85,000 tons, possibly 90,000 tons maximum at the 12-cent price. Thus, stocks are going down 15,000 to 20,000 [tons] a month. This indicates the rate the mills are eating up copper only 5 months after this country first thought of rearming on a serious scale.

To alleviate this growing shortage, the Government, toward the end of the year, moved to bring into the country large amounts of South American ore. Importation of copper, except that which is refined under bond and re-exported, is subject to a tariff of 4 cents a pound. The Metals Reserve Company, a subsidiary of the Reconstruction Finance Corporation, began in December to purchase large amounts of Chilean copper which it resold to American consumers at 12 cents (delivered, Connecticut Valley), the Government absorbing some 2½ cents of the tariff.[43] Beginning in March 1941, deliveries of this South American ore by the Metals Reserve Company swelled domestic supplies by approximately 35,000 tons a month.

Although domestic supplies were thus increased by about a third, the demand for copper in 1941 became so great that producers' stocks continued to decline during most of the year, falling at the end of September to a low of 63,700 tons, as compared to a peak of 215,800 tons at the close of July 1940. (See table 51.)

[41] Business Week, June 22, 1940.
[42] Journal of Commerce, July 19, 1940.
[43] The copper was generally purchased at 10 cents a pound, delivered Chilean ports. Shipping costs to New York totaled approximately one-half cent, the price f. a. s. New York thus ranging around 10.5 cents per pound.

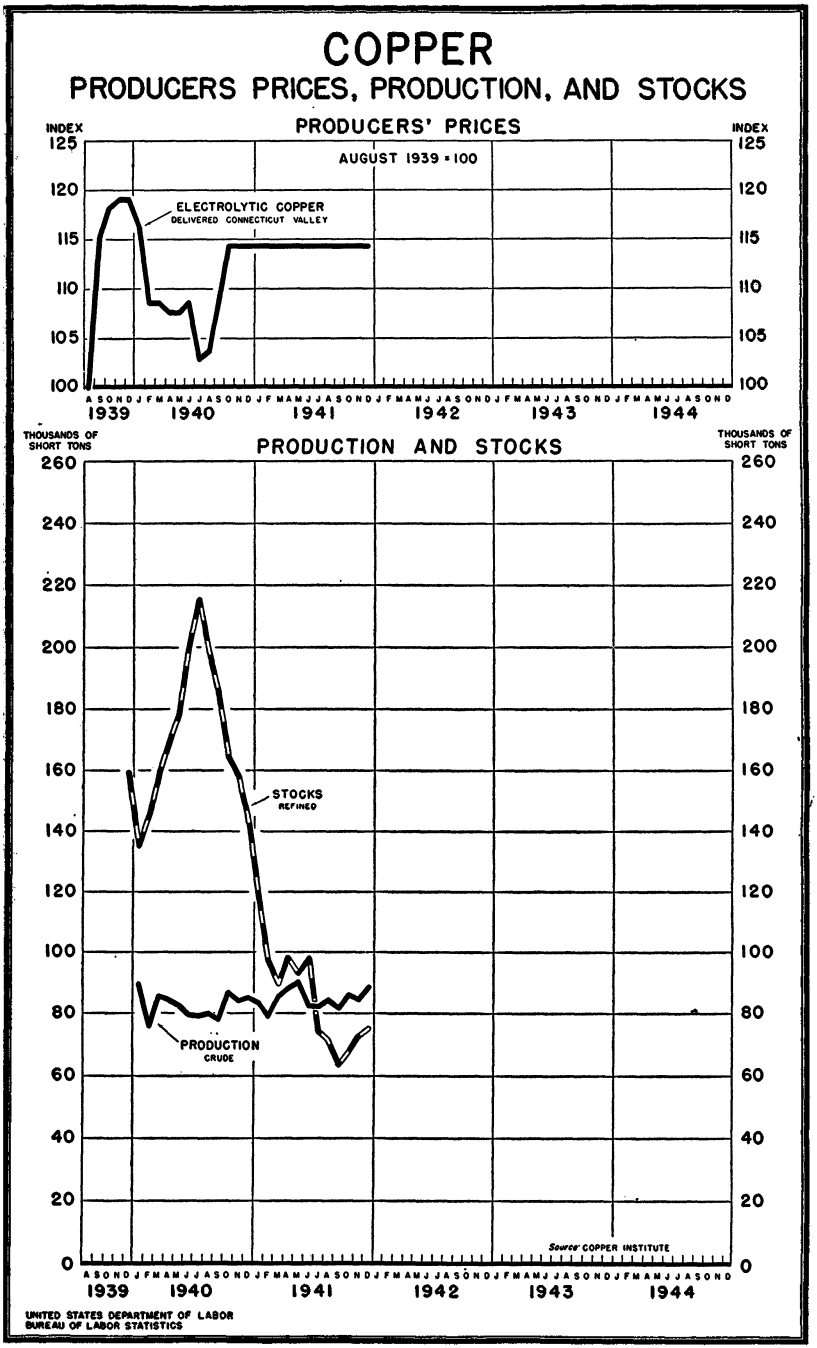


TABLE 51.—*COPPER: Wholesale Prices, Production, Shipments, and Stocks, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; production, shipments, and stocks—Copper Institute]

Year and month	Wholesale price per pound [1]	Production, crude [2]	Domestic shipments	Refined stocks (end of period) [3]
		Short tons		
1939	*Cents*			
August	10.5			
September	12.1			
October	12.4			
November	12.5			
December	12.5	[4] 408,786	[4] 457,315	159,485
1940				
January	12.2	89,598	91,428	135,441
February	11.4	76,145	63,215	145,393
March	11.4	85,796	64,376	159,795
April	11.3	84,366	68,665	169,120
May	11.3	82,682	69,467	178,664
June	11.4	79,845	61,716	199,586
July	10.8	79,327	71,226	215,823
August	10.9	79,967	96,383	198,730
September	11.4	78,328	96,485	185,313
October	12.0	86,911	103,771	164,618
November	12.0	84,283	102,483	158,418
December	12.0	85,135	112,671	142,772
1941				
January	12.0	83,280	119,736	116,854
February	12.0	79,240	112,808	97,698
March	12.0	85,701	134,333	89,873
April	12.0	88,042	123,580	98,789
May	12.0	90,342	148,301	93,076
June	12.0	82,558	121,331	98,164
July	12.0	82,099	150,078	74,384
August	12.0	84,695	119,937	71,930
September	12.0	81,839	125,585	63,670
October	12.0	86,019	126,622	67,260
November	12.0	84,718	124,645	72,352
December	12.0	88,463	138,585	75,564

[1] Delivered, Connecticut Valley.
[2] Mine or smelter production.
[3] At refineries, on consignment and in Exchange warehouses, but not including consumers' stocks at their plants or warehouses.
[4] Total for 5 months, August-December; totals for individual months not available.

This tightness of supply led the Government to attempt other methods of increasing the supply of copper. It developed a plan designed to obtain the output of small high-cost mines without disturbing prices received by the relatively low-cost large producers who supply the bulk of American production. Particular attention was devoted to the problem of increasing the production of high-cost Michigan Lake copper. On August 27, Michigan producers were informed by the Price Administrator that they would be granted a subsidy of 1 cent a pound over their "out-of-pocket" costs (i. e., costs exclusive of such items as depreciation, depletion, and amortization of fixed charges) for the first 6 months of the year, and that provisions would also be made for an increase of $1 a day in miners' wages which had been distinctly substandard. By the adoption of this plan, it was believed that the Michigan mines would add about 75,000 tons yearly to domestic supplies.[44]

Steps were also taken to restrict the export of South American ore to foreign countries. American companies which controlled the South

[44] Journal of Commerce, July 7 and August 13, 1941.

American copper output were requested either to postpone shipments or to cancel contracts made with Japan for March, April, and May (1941) shipments and to transfer that copper to the Metals Reserve Company.[45]

Despite all these measures, the shortage grew more acute. For the month of September 1941, it was estimated that domestic production plus Chilean imports would total only 122,000 tons, while consumption was running at the monthly rate of 135,000 tons.[46]

Until August 1941 the price of copper had been governed under an informal understanding which fixed the most important quotation—that for copper mined and refined by integrated domestic producers—at 12 cents per pound (delivered, Connecticut Valley) and permitted small differentials for other producers. On August 12, 1941, a formal ceiling was issued which, in general, fixed maximum prices for all producers at 12 cents (Connecticut Valley).

The principal reason for the imposition of this formal ceiling was the fact that on August 6 the Office of Production Management had issued a general preference order, placing copper under complete priority control. At the same time, the Office of Price Administration and Civilian Supply, recognizing the fact that a few high-cost copper producers could not sell at 12 cents, recommended that the Metals Reserve Company purchase such copper at a price 1 cent above "out-of-pocket" costs. In announcing the ceiling, Price Administrator Henderson stated that more than 90 percent of the domestic output could be produced without loss for 12 cents a pound or less.[47]

Subsequent price developments did not affect this basic ceiling, but were designed further to stimulate marginal production. Contracts with several Michigan high-cost producers were negotiated at prices, based on a cost-plus formula of 15 and 16 cents per pound. There was also some discussion of the establishment of a third copper price, higher than 12 cents, to be paid to all producers for metal produced in excess of assigned quotas. In December, however, the Office of Price Administration announced its opposition to this plan.[48]

The establishment of the formal ceiling in August had little effect upon production which continued through the year at about the same stable rate. Monthly output during the first 11 months of 1941 averaged only 2 percent higher than during the corresponding period of 1940. Production was actually 6 percent lower in November 1941 than in January 1940. By the latter part of 1941 monthly requirements for purely military needs were well in excess of supplies. For example, the Office of Production Management announced that the demand in November, for direct military and lend-lease uses alone, would reach 150,000 tons, whereas only 128,000 tons were made available. The salvaging of scrap could meet only a small proportion of the requirements.

According to the Office of Production Management, additional refining capacity of some 13,000 tons monthly was to become available early in 1942. Other new plants financed by Government funds were to get into production in January 1943.[49] In addition, the prob-

[45] Daily Metal Reporter, March 13, 1941.
[46] American Metal Market, September 3, 1941.
[47] This would seem to be justified by the record of net earnings of five copper concerns which for the first three-quarters of 1941 were 65 percent higher than the corresponding period of 1940, in spite of much heavier taxes. (New York Times, November 14, 1941.)
[48] American Metal Market, November 6 and December 23, 1941.
[49] U. S. Senate (77th Cong., 2d sess.), Additional Report of the Special Committee Investigating the National Defense Program. Appendix VI, pp. 212–213.

lem of stimulating mine production, which constituted the principal difficulty throughout most of the Defense Period, was being studied by both the Office of Production Management and the Office of Price Administration.

Lead

Starting from its pre-war level of 5 cents per pound, the price of lead (pig, desilvered, New York) rose to 5.5 cents by October 1939, fell by more than this amount in the first half of 1940, and then increased again to 5.85 cents by March 1941, where it was pegged by Price Administrator Henderson. The net advance from August 1939 to December 1941 amounted to 18 percent.

The initial rise in lead prices during September and October 1939 occurred principally because of consumers' efforts to build up stocks. To meet the demand, producers placed large quantities of American lead on the market, with the result that the price remained stable during the remainder of the year.[50] Most of the price advance was lost early in 1940, as both domestic output and imports rose and producers' stocks reached high levels. At the same time, there was a temporary drop in industrial activity, and British and French demand for lead products proved to be less than had been anticipated. As a result, the price continued to ease, falling below 5 cents per pound in August and September.

Imports during this period increased substantially; the bulk of these foreign shipments, however, went into bonded warehouses and accordingly this tonnage is not reflected at once in the figures on "imports for consumption" shown in table 52. Western Hemisphere producers, particularly in Mexico, turned to the United States to compensate for the loss of European markets, despite a duty of 1½ cents per pound on lead in the form of ore and 2½ cents on base bullion and refined pig lead. For many months supplies of foreign lead constituted an important stabilizing influence in American markets.

Prices showed no tendency to rise until October 1940, when the effects of the defense program at last became manifest. Stimulated by a sudden, panicky buying movement the quotation jumped from 4.85 cents in mid-September to 5.75 cents in early November. The demand was so great that immediately available supplies proved inadequate.[51] Price advances only accelerated the movement, which reflected such factors as increased automobile production, heavy buying by cable producers, buying for submarine batteries, bullets, airplane flares, pipe and sheets, caulking lead, etc. Speculation further aggravated the situation. According to the American Metal Market (November 7, 1940):

> Reports from sales offices today indicated that consumers were not at all deterred by the advance and came into the market for further large tonnages. They were not able, however, to contract for all that was wanted, and, had sellers withdrawn all restraint, the bookings today could easily have been twice as large as they were.

Buying pressure eased in December and the price declined slightly when it was disclosed that some 130,000 tons of Mexican ore were held in Texas, under bond, awaiting more favorable prices; being under bond they were not reported in the regular trade statistics. According

[50] American Metal Market, January 1, 1941.
[51] Idem, American Metal Market, October 17, 1940.

to the New York Journal of Commerce (December 6, 1940), "knowledge of their existence in this country would have been sufficient to check the recent nervousness displayed by consumers."

Early in 1941 prices again started increasing, rising to 5.85 cents by April. Large amounts of foreign metal were released from bond, imports for consumption rising to a peak of 65,500 tons in September 1941 as compared with 19,000 tons a month in the last part of 1940. Describing this trend, the American Metal Market of February 11, 1941, stated:

> At the 5.50 cents New York level, quite a lot of foreign lead has been brought in to meet the excess of demand and consumption over domestic production * * * but demand has been extremely strong over the past few weeks and today it reached a point where resort in a very considerable way had to be taken to the foreign supplies and the rise is credited primarily to the necessity of making them available in the required volume.

On April 5, 1941, an informal price ceiling was fixed at the 5.85-cent level then prevailing. The Government also took steps to import lead directly through purchases by the Metals Reserve Company. In July this agency completed negotiations to purchase up to 225,000 tons of Mexican and Canadian lead during the last half of 1941.

The increase in imports, however, was accompanied by an actual decline in production from domestic ores—from 54,700 tons in January 1941 to 41,600 in November. Thus, in the spring, producers feared an oversupply. Domestic trade journals frequently referred to the belief prevalent in the industry that the advance in imports coupled with the use of concentrates accumulated in 1940 would readily meet demand.[52]

However, the increasing pace of the defense program caused actual demand in the latter part of 1941 far to outrun expectations.

At the beginning of October the Office of Production Management pointed out that annual consumption of lead was approximately 960,000 tons, whereas domestic production, including that from foreign ores, was not over 600,000. The balance represented scrap and imports of refined lead. On October 4, formal priorities were established for all foreign and domestic supplies of lead. At the same time steps were taken to reduce the use of lead in nonessential industries and to increase production of the metal.[53] As a result of the failure of production to keep pace with demand, some upward pressure upon prices developed, manifested occasionally by "bootleg" sales—sales of refined lead at prices above the informal ceiling. The American Metal Market of August 28, 1941, reported:

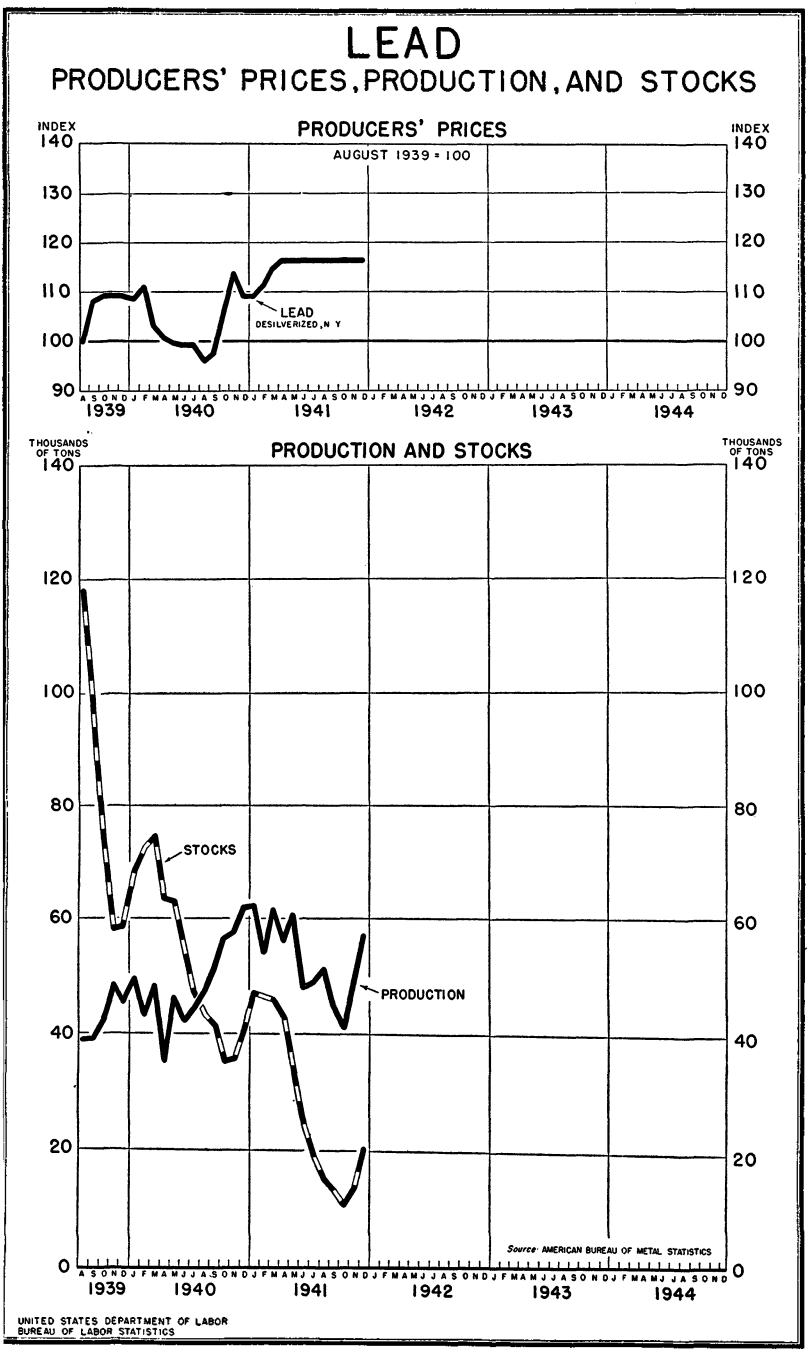
> The producers feel that in the case of lead the amount of this business is very small but that pig lead is here and there bringing 6.12½ cents to 6.25 cents, possibly more, as compared to the 5.85 cents New York and 5.70 cents St. Louis bases.

In October the opinion began to be voiced in the trade press that the informal ceiling should be raised in order to bring forth greater production.[54] It was contended that under existing limitations on hours, continuous operation would require overtime payments to labor and these increased expenses could not be met at 5.85 cents per

[52] Cf. Wall Street Journal, March 5, 1941; American Metal Market, January 1, 1941, April 8, 1941; Daily Metal Reporter, April 16, 1941.

[53] On November 24 the use of lead in lead foil for cigarettes, candy, etc., was restricted. On November 6 Directors Knudsen and Hillman wired all lead mining companies to begin production on a 24-hour, 7-day week basis wherever possible.

[54] Cf. New York Herald Tribune, October 12, 1941; American Metal Market, October 11, 1941.



pound. The decline in domestic production, which by October had carried the output to a level 31 percent below that of January, was attributed to the fact that the ceiling was too low.

TABLE 52.—*REFINED LEAD: Wholesale Prices, Production, Imports, and Stocks, August 1939–December 1941*

[Sources: U. S. Prices—Bureau of Labor Statistics; production, stocks, and shipments—American Bureau of Metal Statistics; imports—U. S. Department of Commerce]

Year and month	Wholesale price per pound [1]	Production from domestic ore	Total production	Imports for consumption except manufactures (lead content)	Stocks, end of month	Domestic shipments
1939	*Cents*	*Net tons*	*Net tons*	*Net tons*	*Net tons*	*Net tons*
August	5.04	36,566	39,000	3,019	117,985	45,025
September	5.45	35,086	39,359	4,391	97,473	59,889
October	5.50	38,903	42,563	4,063	73,963	66,060
November	5.50	44,748	48,467	2,762	58,061	64,365
December	5.50	42,547	45,615	4,164	58,777	44,881
1940						
January	5.47	47,149	49,683	4,496	68,539	39,875
February	5.08	40,564	43,317	2,958	72,658	39,176
March	5.19	44,783	48,400	4,787	74,692	46,353
April	5.07	31,192	35,343	2,866	63,610	46,496
May	5.02	37,918	46,268	7,404	62,955	46,919
June	5.00	34,041	42,306	4,723	55,343	49,904
July	5.00	35,343	44,596	16,581	47,360	52,560
August	4.85	36,851	47,614	10,230	43,321	51,643
September	4.93	41,528	51,441	10,739	41,292	53,456
October	5.31	39,228	56,600	27,739	35,386	62,496
November	5.73	45,089	57,926	19,084	35,791	57,510
December	5.50	47,208	61,906	19,205	40,926	56,755
1941						
January	5.50	54,658	62,048	19,707	47,248	55,711
February	5.60	47,764	54,231	14,321	46,604	54,859
March	5.77	46,748	61,503	27,991	45,996	62,090
April	5.85	43,423	56,086	39,764	42,899	59,169
May	5.85	46,104	60,509	40,553	34,018	69,382
June	5.85	38,669	48,224	33,374	24,265	57,969
July	5.85	42,048	48,989	22,160	19,172	54,067
August	5.85	39,100	51,157	47,891	15,330	55,005
September	5.85	41,373	44,903	65,519	13,148	47,093
October	5.85	37,221	41,127	33,627	10,735	43,537
November	5.85	41,566	48,930	23,119	13,671	45,980
December	5.85	48,829	57,181	17,318	20,185	50,680

[1] Lead, pig, desilverized, New York.

Rumors of an impending price increase were circulated and these accentuated the tightness of the market by causing some producers to hold back supplies. To meet this situation the Price Administrator on November 5 issued a statement criticizing the speculative hoarding of lead scrap and denying that any increase in the ceiling was imminent. He added that "evidence accumulated by OPA clearly indicates that a large part of the mining industry is in a position to increase its output at the present price of lead. The bulk of the industry is not operating at anything like full capacity. Lead output can be increased quickly by various methods."

By the end of the Defense Period the shortage had become acute; refined lead stocks on December 1 were sufficient for only 5 days' requirements,[55] while on December 2 it was reported that scrap dealers were still withholding supplies in anticipation of the hoped-for price increase.[56]

[55] American Metal Market, December 23, 1941.
[56] Idem, American Metal Market, December 3, 1941; Standard (Butte, Mont.), December 6, 1941.

Zinc

Between August 1939 and December 1941, the price of zinc rose about 70 percent, advancing from 5.1 cents per pound (slab zinc, pig, western New York), just before Poland was invaded, to 8.6 cents at the time of Pearl Harbor. This increase was considerably larger than that for any of the other principal nonferrous metals.

Immediately following the outbreak of war, the price of zinc rose from 5.1 cents in August 1939 to 6.9 cents in October. To some extent this increase reflected the fact that zinc prices in the first half of 1939 were relatively low, owing in part to the reciprocal trade agreement with Canada, which on January 1, 1939, reduced the duty on slab zinc by 20 percent.

The October price held during November, but in December the market weakened as a result of the accumulation of large stocks by consumers and increased imports from Mexico and Canada. There was little further change in the first 4 months of 1940, when the price remained at a level of 6.0 cents in January and February and 6.1 cents during March and April. At the same time, shipments fell below production, while producers' stocks rose rapidly.

Summarizing this decline of activity in the zinc market, the New York Journal of Commerce for April 17, 1940, stated: "Buying has now fallen off following the initial rush, which was stimulated by the invasion of Denmark and Norway. * * * The backlog of unfilled orders on producers' books * * * was 30,000 tons of the common grade of the metal as against 90,000 tons last September."

This period of falling prices and declining activity came to an end for zinc sooner than for the other important metals. Prices started rising in May—carrying the quotation to 6.7 cents in August 1940 and to 7.6 cents in October. (See table 53.) At this point, it was stabilized through the intervention of the Price Administrator and there was no further change for the next 11 months.

Production during 1940 advanced somewhat but shipments rose more sharply, especially from April to September. As a result producers' stocks fell precipitously, dropping from 79,000 tons in May to 18,000 in December.

The principal cause of the advance in prices and the decline in stocks was the inability of smelting and refining capacity to meet the swelling armament demand. Zinc was needed in rapidly increasing quantities for the production of cartridge brass as well as for other military purposes.[57] While the rise in prices succeeded in stimulating ore production and in inducing the reopening of high-cost mines, refining capacity took longer to expand. By the fall of 1940, smelting facilities were operating at capacity. In the words of the American Metal Market of September 6, 1940: "It may well be repeated that under present conditions merely raising the price of spelter (zinc) does not release an appreciable additional amount of metal. The situation is distinctly a matter of smelting capacity."

[57] "The tremendous amount of zinc required for small arms is indicated by the fact that in making cases and jackets of .30 caliber, about 16 pounds of zinc are required per 1,000 shells. In a 75 mm. shell case, zinc requirements are about 3,800 pounds of brass per 1,000 cases. During the World War, and before the advent of the rapid-firing Garand rifle and the mounting of four and more machine guns on an airplane, the production of small-arms ammunition reached a peak of 4 billion rounds a month. While no data are available of present-day requirements, it is obvious that this figure must be increased many times." (Journal of Commerce, May 26, 1941.)

Reflecting this acute shortage of supply, quotations of zinc futures on the New York Commodity Exchange rose to very high levels; by December they had advanced to a level 2¼ cents per pound (or 30 percent) over that charged by all principal sellers in the regular market.[58] An investigation was begun by the Commodity Exchange early in December 1940 to determine whether these increases were "tying up zinc for speculative purposes." [59] Two months later the National Defense Advisory Commission requested that no more sales be made by zinc smelters on the Commodity Exchange.[60] Shortly thereafter, the Exchange announced that new sales of zinc futures would be prohibited as of March 4, and that trading would be limited to the liquidation of open positions.[61]

This measure was the first of several adopted in 1941 by both industry and Government to relieve the tightness of the market. Primary attention, however, was devoted to expanding smelting capacity. Although the increase in capacity actually achieved during 1941 fell far below the 100-percent enlargement recommended by the United States Bureau of Mines,[62] production in the last quarter of the year was 16 percent higher than in the first quarter. In addition, a zinc pool was organized by the Government, each producer being required to set aside a certain percentage of his output for allocation by the Director of Priorities. In April, producers were required to set aside 5 percent of their March production; in May the figure was raised to 17 percent; in June, to 22; in August, to 27; and in November, to 31 percent.

Efforts also were made to reduce the large consumption of zinc by the automobile industry. Forged parts and malleable castings were, to some extent, adopted in place of zinc-consuming die castings, while some use was made of substitute parts of glass, copper, and plastics. Nevertheless, the automobile industry in the production of its 1941 models used an estimated 105,000 tons of zinc, or 12 percent of the entire zinc production during the 12 months, August 1940 to August 1941.[63]

Despite all these measures, the shortage of zinc continued to be acute. By August 1941, members of the industry were expressing with growing frequency the opinion that the price ceiling was restricting production,[64] and by September rumors of zinc sales at "bootleg" prices had become current in the market.[65] With the enlargement of smelting capacity, larger ore supplies were needed. Independent zinc miners urged that this required higher prices for concentrates, particularly in view of increases in the cost of mine labor. While any substantial increase in the price of concentrates could not be absorbed by refiners unless the ceiling on slab zinc was raised, a small advance did take place. For 50 weeks, concentrates had been selling in the Joplin market at $48 per ton. However, in the last part of August, sales were reported at $48.58; in a few weeks this advance was accepted by the entire industry.[66]

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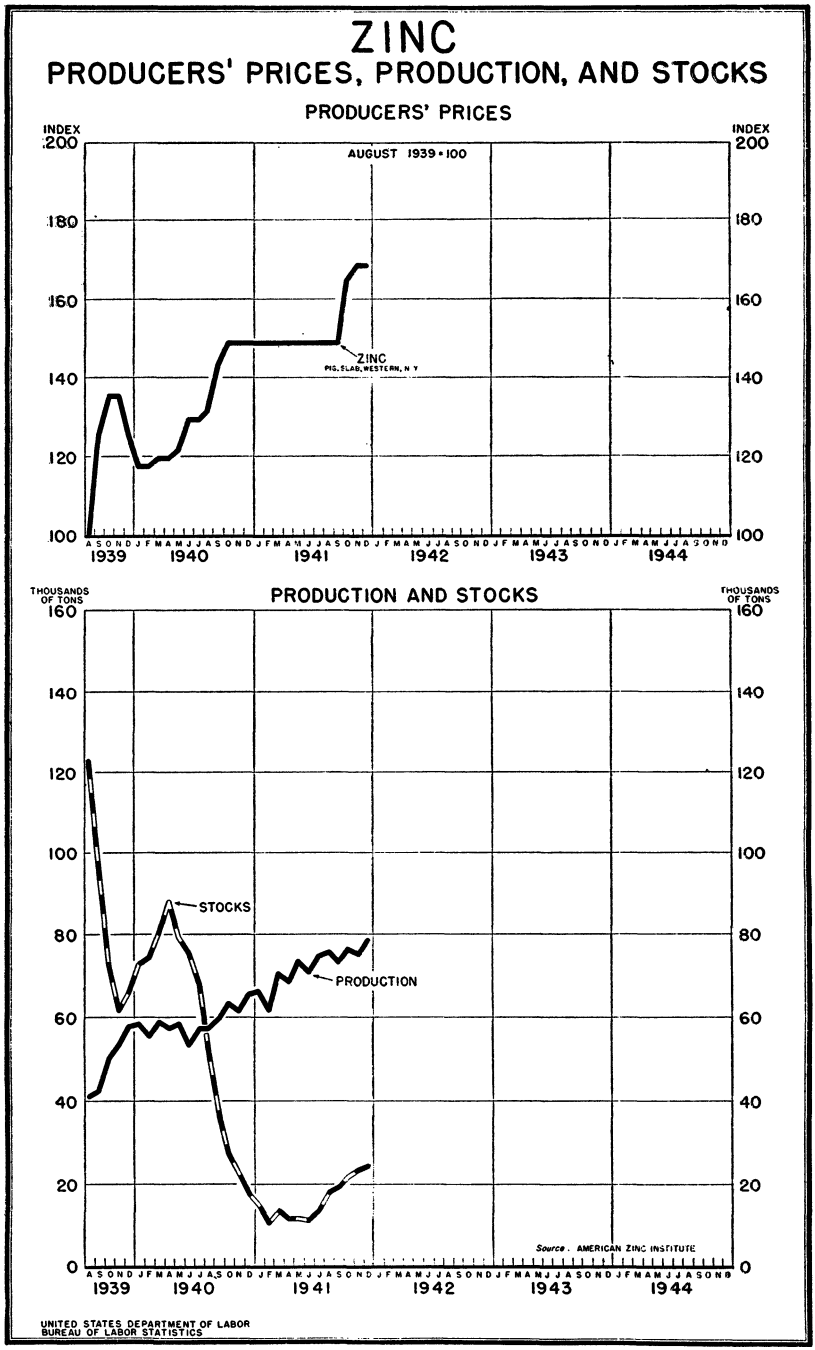
[58] American Metal Market, December 6, 1940.
[59] Journal of Commerce, December 5, 1940.
[60] Idem, January 21, 1941.
[61] Idem, March 4, 1941.
[62] Daily Metal Trade, January 31, 1941.
[63] Journal of Commerce, May 26, 1941.
[64] Idem, August 20, 1941.
[65] American Metal Market, September 12, 1941; Washington Post, September 19, 1941.
[66] Idem, September 18, 1941.



Following this advance, the market became confused as efforts were made to obtain a higher price for the metal. The trade anticipated an immediate increase in the ceiling, a belief reportedly shared by the Office of Production Management which was said to be proposing a price advance.[67] One producer actually announced a new price of 7.32½ cents, East St. Louis (equivalent to about 7.72 cents, New York) but the Office of Price Administration soon persuaded him to withdraw this increase.[68]

Meanwhile, rumors of "bootleg" sales of slab zinc persisted, with the result that several concentrate producers in mid-September were reported refusing to sell at ceiling quotations in the face of the higher prices for slab. Sales in the Joplin area were thus reduced by 20 percent in 1 week in September.[69]

The failure of production of concentrates and also of refined zinc to expand in the summer of 1941 was attributed by producers to rising costs. Mines now in operation, they contended, were growing less profitable and labor was being constantly lost to nearby defense plants. In addition, opening of new mines was held to be commercially impracticable under ceiling prices then prevailing. However, the production situation during this period was interpreted differently by the Senate Committee Investigating the National Defense Program. In the opinion of the Committee:

> It is only natural that * * * the mine operators would calculate normal profits during the number of years of expectancy at normal operation and deduct therefrom normal income tax profits. They would compare the figure so obtained with the larger profits for a lesser number of years after deducting the normal and excess profits tax, and would conclude that it would be more profitable to continue normal production than to increase their production. This fact, together with the fact that the companies assume that if production continues to be unsatisfactory the Government ultimately will increase the base price, explains why the production of these strategic metals (copper, lead, and zinc) is so disappointing.[70]

Confronted with the urgency of stimulating production, the Office of Price Administration on October 10 issued a formal ceiling order, establishing the maximum price for spelter 1 cent per pound above the previous informal ceiling levels. The new price for western slab zinc thus became 8.25 cents at East St. Louis and 8.6 cents at New York. The price for concentrates was raised from $48.58 to $55.28 per ton. In issuing this order the Price Administrator stated: "This action represents a case where intensive study by the OPA staff has disclosed that a price increase is necessary to maintain and expand supply."

The Office of Production Management welcomed this action, stating that the new prices were "expected to stimulate production enough to take care of all existing defense and essential civilian demand." It was hoped that production would be increased by at least 10 percent, possibly by 15 percent.

Sales of ore responded rapidly to the advance, and refinery operations also rose though at a slower rate. By December 1941, production of refined zinc reached 79,000 tons, the highest on record, and stocks were recovering slowly, though remaining far below normal levels.

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[67] Wall Street Journal, September 23, 1941.
[68] American Metal Market, September 24, 1941.
[69] Journal of Commerce, September 25, 1941.
[70] U. S. Senate, 77th Cong., 2d sess., Additional Report of the Special Committee Investigating the National Defense Program, 1942, p. 24.

TABLE 53.—*SLAB ZINC: Prices, Production, Shipments, and Stocks, August 1939–December 1941*

[Sources: Production, shipments, and stocks—American Zinc Institute; prices—Bureau of Labor Statistics]

Year and month	Producers' price [2]	Production [1]	Shipments (total)	Stocks, end of month
		Tons of 2,000 pounds		
1939	*Cents*			
August	5.1	40,960	49,928	122,814
September	6.4	42,225	69,424	95,615
October	6.9	50,117	73,327	72,405
November	6.9	53,524	64,407	61,522
December	6.4	57,941	53,468	65,995
1940				
January	6.0	58,442	59,825	72,878
February	6.0	55,518	53,867	74,529
March	6.1	58,890	52,796	80,623
April	6.1	57,299	50,102	87,820
May	6.2	58,320	67,083	79,057
June	6.6	53,273	56,800	75,530
July	6.6	57,168	64,691	68,007
August	6.7	57,196	72,989	52,214
September	7.3	59,800	75,193	36,821
October	7.6	63,338	73,099	27,060
November	7.6	61,502	66,064	22,498
December	7.6	65,354	70,270	17,582
1941				
January	7.6	66,121	68,844	14,859
February	7.6	61,603	65,818	10,644
March	7.6	70,341	67,640	13,345
April	7.6	68,543	70,414	11,474
May	7.6	73,449	73,090	11,833
June	7.6	70,837	71,569	11,101
July	7.6	74,641	71,894	13,848
August	7.6	75,524	71,403	17,969
September	7.6	73,225	71,767	19,427
October	8.4	76,156	73,989	21,594
November	8.6	74,951	73,363	23,182
December	8.6	78,635	77,755	24,062

[1] All grades. Commencing with January 1940, production from foreign ores is included; the figures for 1939 do not include production from foreign ores.
[2] Zinc, pig, slab, western, per pound, New York.

Tin

Except for a brief flurry immediately after the outbreak of war in Europe, the price of tin remained comparatively stable during the period, August 1939–December 1941. The net advance during these 27 months amounted to a little more than 6 percent, from 48.8 cents per pound in August 1939 to 52 cents at the time of Pearl Harbor. (See table 54.)

Within 2 weeks after Poland was invaded, the price of tin, c. i. f. New York, jumped from 48 cents a pound on August 28 to a peak of 74 cents per pound on September 12.[71] American buyers purchased large quantities of the metal, and imports rose from 4,700 tons of refined tin in August to 12,500 tons in December 1939. To check the rapid price rise resulting from these purchases, the British Government on September 18 established maximum prices in the Straits Settlement market.[72] In addition, the International Tin Committee raised export quotas for the last quarter of 1939 from 60 to 100 percent of so-called standard tonnages[73] and again to 120 percent for the first quarter of 1940. Primarily as a result of these actions,

[71] Iron Age, September 14, 1939.
[72] New York Times, December 10, 1939.
[73] Standard tonnages were originally based on 1929 exports, but were subsequently revised.

the quotation for tin declined steadily from its September high through the remainder of the year and continued at the relatively low level of about 47 cents per pound until May 1940.

Higher prices prevailing in May and June, when tin sold for more than 54 cents, were probably attributable to a reduction in the export quotas for the second quarter of 1940 to 80 percent of the base. According to the Journal of Commerce (February 21, 1940), this reduction "was plainly for the purpose of raising prices." However, quotas were promptly raised for the third quarter to 130 percent of the base, where they remained throughout the Defense Period, and both the United States and British Governments cooperated vigorously in accumulating supplies. The price of tin fell 4 cents during ensuing months to 50 cents per pound in September.

The Reconstruction Finance Corporation during this period set out to purchase 75,000 tons of tin at 50 cents per pound, New York, for stock-pile accumulation.[74] At the same time Government officials urged industrial consumers to increase their holdings to at least 1 year's supply. Stocks of tin in the United States in mid-1940 were estimated at less than 4 months' normal requirements.

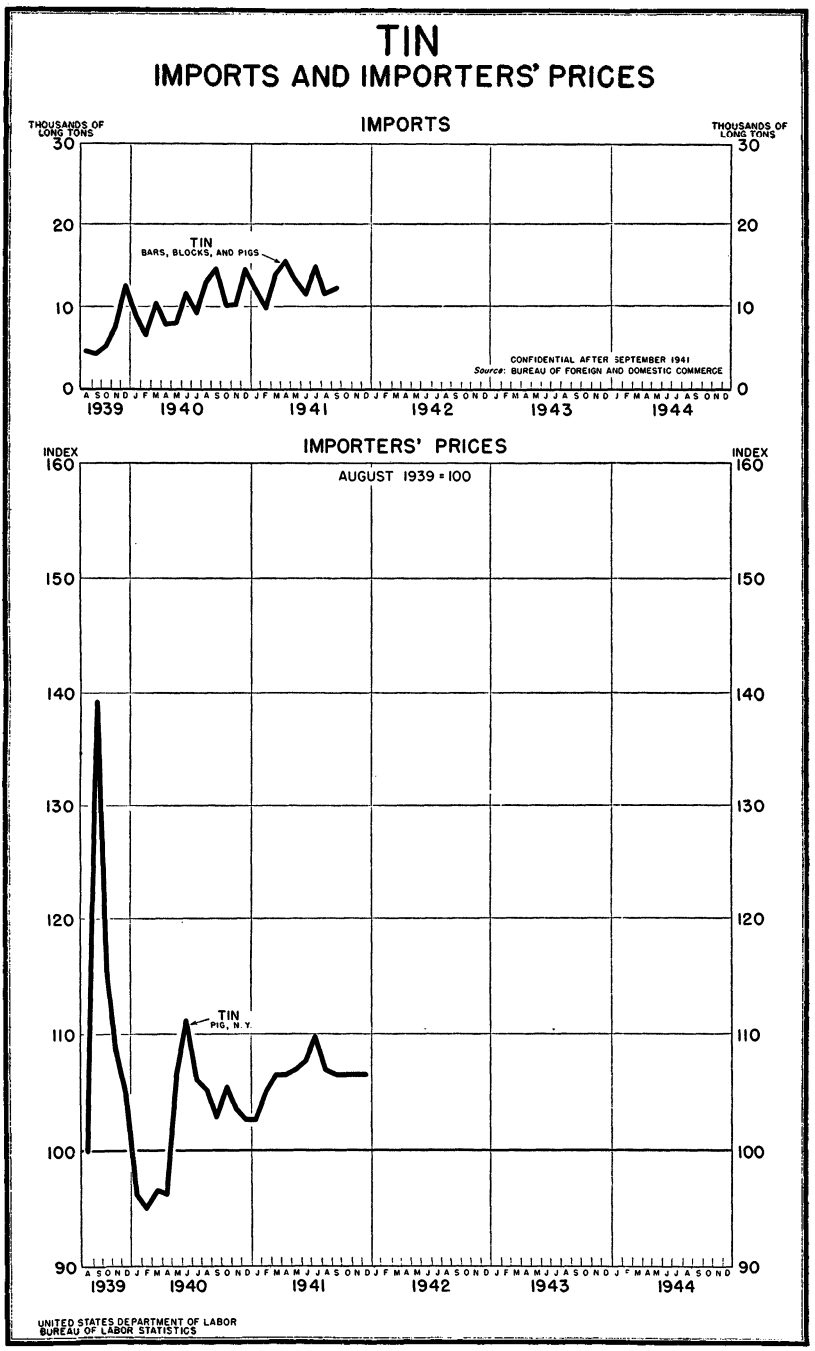
A few months later the Government moved in another direction to increase United States stocks. The Metals Reserve Company in mid-October arrived at an agreement with Bolivian producers to purchase, during the next 5 years, tin concentrates equivalent to 18 thousand tons of fine tin per annum. Average United States consumption of tin ranges in peace years between 70 and 80 thousand tons. By February 1941, plans had been completed for the construction of an RFC-financed plant in this country with sufficient capacity to smelt the Bolivian ore. The plant was to require 8 months for construction and was to be operated by experienced Dutch tin producers.[75]

In 1941 the tin market, after dull trading in January and February, became increasingly active, owing both to the growing tension in the Far East and to the steady increase in demand. Tin was especially needed for tin plate—used in cans—which accounts for 60 percent of United States consumption; and also for solder, babbitt metal, and bronze, requiring 21, 7.2, and 6.8 percent, respectively.[76]

The demand for tin cans was swollen by the rise in domestic consumer purchasing power, by the mounting requirements of the armed forces in this country, and by shipments to Britain under the food-for-defense program. In addition, the British curtailed their tin plate production, with the result that their colonies and certain foreign markets ordinarily served by them were forced to turn for tin plate to the United States.[77] The demand was further increased by efforts of nondefense users in this country to accumulate inventories in response to Government request and also as protection against possible rationing.[78]

This tight market situation and fears that shipments might be interrupted [79] led to a price increase in February. As a result of this increase, the Office of Production Management issued a warning that the Government would commandeer all tin supplies if shipments

[74] Journal of Commerce, July 9, 1940.
[75] Wall Street Journal, February 19, 1941.
[76] Idem, July 24, 1941: Other uses are for collapsible tubes, 5.9 percent; chemicals, 1.8 percent; type metal, 1.9 percent; tinning, 3.1 percent; and tin oxide, 1.7 percent.
[77] Daily Metal Trade, March 26, 1941.
[78] Journal of Commerce, May 26, 1941.
[79] Idem, February 21, 1941.



were interrupted. At the same time, the Reconstruction Finance Corporation assured the International Tin Committee that it would purchase all the tin which the cartel would sell, provided that sufficient shipping space was available.[80] Once again, Government action brought about a relative stabilization in the price.

In May, however, tin prices began another upward movement and in July reached 54 cents. Noting this increase, the Office of Price Administration and Civilian Supply on July 28 issued a warning that a price ceiling might be imposed in the near future. At the same time, the Office of Production Management requested buyers "not only to refrain from increasing their stocks but also to cease replacing their current consumption until such time as the increase acquired by them since June 1940 is reduced by one-half."

The price, however, continued to rise with the result that on August 15 the Office of Price Administration and Civilian Supply established a ceiling of 52 cents a pound for grade A pig tin. The expressed reaction of the trade was given in the Journal of Commerce for August 15, 1941: "Tin dealers here yesterday expressed relief at the provisions of the tin ceiling * * * earlier talk of a 50-cent maximum had been disquieting."

Within a week after the imposition of the ceiling it became difficult for buyers to obtain tin.[81] To meet this situation, the Metals Reserve Company—which on September 13 reported the possession of 39,592 tons of refined tin, delivered—agreed on August 23 to release some of its tin to consumers who could produce evidence that they needed the metal for current requirements and not merely for stock accumulation. Very few applications, however, were made, a fact which was interpreted by the trade as indicating the inability of consumers to furnish evidence that the metal was needed for current use.[82]

Although thus adequately supplied in August for short-term requirements at least, industrial users of tin were faced with a decline in shipments, a problem aggravated by the beginning of an advance in the Singapore price. By the end of August that price had advanced to a figure equivalent to 51.8 cents, c. i. f. New York, which was so close to the ceiling price of 52 cents that many importers reportedly did not feel justified in handling the business.[83] The upward price trend in Singapore continued until at one time in October 1941, the Singapore price was 52.57 cents in the New York equivalent,[84] part of the rise being a result of the increase in shipping insurance rates from ½ to 1 percent via the Pacific route.

Between the end of August and the Pearl Harbor attack the Singapore price fluctuated within a narrow range around the ceiling, with the result that many dealers were reluctant to buy tin for resale. Imports accordingly declined considerably in the last 3 months of the year, a situation which gave rise to reports from time to time that the Government was planning to take over the entire purchase, transportation, and distribution of tin.[85] No such action was taken during the Defense Period, however, although immediately after Pearl Harbor rigid restrictions were placed on the use of the metal. At that time, it was estimated that the supply of tin on hand was sufficient for 15 months.[86]

[80] Daily Metal Trade, February 28, 1941.
[81] American Metal Market, August 22, 1941.
[82] Idem, August 27, 1941.
[83] Idem, Metal Market, September 9, 1941.
[84] American Metal Market, October 24, 1941.
[85] Cf., e. g., American Metal Market, September 12, 1941.
[86] American Metal Market, December 9, 1941.

TABLE 54.—*TIN: Prices and Imports, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; imports—U. S. Bureau of Foreign and Domestic Commerce]

Year and month	Imports in long tons [1]	Price per pound [2]	Year and month	Imports in long tons [1]	Price per pound [2]
1939			*1940*		
August	4,735	$0.488	November	10,237	$0.506
September	4,427	.680	December	14,504	.501
October	5,247	.562			
November	7,629	.530	*1941*		
December	12,518	.512	January	12,055	.501
			February	9,836	.513
1940			March	13,896	.520
January	8,851	.470	April	15,427	.520
February	6,499	.464	May	13,060	.522
March	10,334	.472	June	11,552	.526
April	7,886	.470	July	14,765	.536
May	7,982	.520	August	11,575	.522
June	11,611	.542	September	12,196	.520
July	9,185	.518	October	8,222	.520
August	12,926	.514	November	9,114	.520
September	14,604	.502	December	9,356	.520
October	10,116	.515			

[1] Bars, blocks, and pig.
[2] Pig, New York.

Aluminum

In contrast to the trend of most other strategic metals, the price of aluminum dropped steadily during the Defense Period. Four successive reductions brought the price charged by the Aluminum Co. of America for virgin pure aluminum ingot down from 20 cents per pound in August 1939 to 15 cents in October 1941—25 percent below the pre-war level—where it remained for the remainder of the year. (See table 55.)

TABLE 55.—*ALUMINUM Ingot, 98–99 Percent Virgin: Producers' Prices, 1939–41*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Price (in cents) per pound			Year and month	Price (in cents) per pound		
	1939	1940	1941		1939	1940	1941
January	20.0	20.0	17.0	July	20.0	19.0	17.0
February	20.0	20.0	17.0	August	20.0	18.0	17.0
March	20.0	19.8	17.0	September	20.0	18.0	17.0
April	20.0	19.0	17.0	October	20.0	18.0	15.0
May	20.0	19.0	17.0	November	20.0	17.5	15.0
June	20.0	19.0	17.0	December	20.0	17.0	15.0

Although long-term stability of price has been the outstanding characteristic of its policy, the Aluminum Co. of America in February 1940 lowered its price to 19 cents from the 20-cent level which had prevailed from March 1937. A reduction to 18 cents followed in August, with a further drop to 17 cents in November.[87] In August

[87] Shortly before the outbreak of war in Europe, the Department of Justice, which was prosecuting the Aluminum Co. of America for violation of the antitrust laws, placed in the public record of the trial figures showing the cost of producing aluminum as computed by the Department from the books of the company.

According to these figures, in 1937, the total net mill cost of producing pig aluminum, plus the cost of converting the pig aluminum into commercial ingot, plus administrative and selling expenses, was 9.6 cents per pound. (Source: United States District Court, Southern District of New York, *U. S. of America v. Aluminum Company of America et al.*, Vol. XVI, Exhibit 718. Received in Evidence, May 5, 1939.)

These figures, which did not include the following overhead expenses—freight and express, duty paid, interest and discount paid, cash discounts on sales, royalty paid, premiums and special items, expense A. M. I. lease, idle plant expense, rent expense (Buffalo, Detroit, Edgewater)—were contested by the company.

1941, as a result of negotiations with the Government, the company agreed to lower its price to 15 cents on all shipments made after September 30.[88]

Meanwhile the Reynolds Metal Co., which in 1940 began the production of aluminum at its first plant of 40 million pounds capacity, announced that its initial price would be approximately 12 cents per pound and that a 2-cent reduction would be effected "after the machinery and men were broken in." [89]

The reduction in the price of aluminum during the Defense Period occurred in the face of acute shortages of supply which developed during 1940 and 1941. In June 1940, the Office of Production Management estimated that a primary annual production of some 400 million pounds,[90] together with a secondary output of 75 million pounds, would be sufficient to meet the military requirements of a 2-year emergency period. The Army and Navy Munitions Board had estimated annual requirements to be 480 million pounds.[91]

However, tremendously increased demand rapidly outstripped available supplies. In the fall of 1940, plans were announced for an annual production of 50,000 airplanes, requiring an additional estimated 150 million pounds of aluminum per year. The inauguration of the British Aid Program in 1940 further increased requirements, while estimates were steadily revised upward during 1941 as the defense program was intensified.

The Office of Production Management estimated the aluminum shortage for defense and essential civilian demand during the month of June 1941 alone, at 4,400,000 pounds,[92] and in July announced that not only was there no aluminum available for civilian use, but that there also existed an "urgent problem" in supplying enough fabricated aluminum parts even to defense plants.

Various steps were taken by the Government to increase aluminum production. In January 1941, plans were made to increase annual output to 880 million pounds a year by the fall of 1942.[93] By the end of August this figure had been raised to 1,500 million pounds, a rate which, it was hoped, would be achieved by the fall of 1942 or at least the beginning of 1943. On August 19, 1941, the Government contracted with the Aluminum Co. of America for the construction of four new plants with an annual capacity of 340 million pounds,[94] and further contracts were subsequently let for expansion amounting to an additional output of 300 million pounds annually.

In December 1941, the supply situation was as follows:

	Pounds (in millions)
Capacity as of December 1941	650
New capacity under construction	640
Imports from Canada	200
Total	1,490

[88] Journal of Commerce, August 21, 1941.
[89] Idem, May 14, 1941.
[90] In 1940, the total output of the Aluminum Co. of America was 412.6 million pounds.
[91] Investigation of the National Defense Program, U. S. Senate (77th Cong., 1st sess.), Special Committee, S. Res. 71, Hearings, Pt. III, p. 824.
[92] Journal of Commerce, July 17, 1941.
[93] Investigation of the National Defense Program, op. cit., p. 825.
[94] Cf. Huge Expansion of Aluminum Capacity Will Help Meet Wartime Demand for Light Metal, by H. A. Franke, of the Metal Economics Division, U. S. Bureau of Mines. (Daily Metal Reporter Monthly Supplement, December 1941.)

Chapter IX.—Building Materials

Summary

Construction activity during the Defense Period kept pace with the swift growth of military preparation, industrial expansion, and the rise in consumer purchasing power. Beginning in the summer of 1940 the Federal Government awarded contracts for Army camps, other military facilities, and war-material plants. Private expenditures—for industrial facilities, for housing defense workers, and for other purposes—rose sharply. In 1941, the total volume of expenditures on construction in the United States reached nearly 11 billion dollars, 70 percent above the total for 1939.[1] Almost half of these expenditures were for Government construction, mainly for industrial, military, and naval facilities. (See table 56.)

TABLE 56.—*Construction Expenditures in Continental United States, 1939–41*[1]

[Source: U. S. Bureau of Labor Statistics, Bull. No. 713, Building Construction, 1941]

Type of construction and ownership	Expenditures (millions of dollars)			Percent of total expenditures		
	1939	1940	1941	1939	1940	1941
All construction	6,451	7,299	10,969	100.0	100.0	100.0
Private construction	3,878	4,604	5,667	60.1	63.1	51.7
Residential (nonfarm)[2]	2,046	2,359	2,881	31.7	32.3	26.3
Nonresidential	768	1,015	1,244	11.9	13.9	11.4
Farm:						
Residential	235	250	300	3.6	3.4	2.7
Service buildings	295	320	415	4.6	4.4	3.8
Public utility	534	660	827	8.3	9.1	7.5
Public construction	2,573	2,695	5,302	39.9	36.9	48.3
Residential	72	202	442	1.1	2.7	4.0
Nonresidential:						
Industrial facilities	20	130	1,236	.3	1.8	11.3
Military and Naval[3]	128	481	1,710	2.0	6.6	15.6
Other	814	365	264	12.6	5.0	2.4
Highway	872	932	999	13.5	12.8	9.1
Other public:						
Federal[4]	329	346	421	5.1	4.7	3.8
State and local[5]	338	239	230	5.3	3.3	2.1

[1] Estimates include expenditures for new construction and major additions and alterations, but exclude expenditures for maintenance and work-relief construction.
[2] Estimates adjusted to new levels indicated by the 1939 Census of Housing.
[3] Does not include industrial facilities or defense housing (for families of enlisted men).
[4] Mainly river, harbor, flood control, reclamation, and power projects.
[5] Includes water supply, sewage disposal, and miscellaneous public-service enterprises.

Prices of building materials on the average rose 20 percent between August 1939 and December 1941, somewhat less than the advance of the Bureau of Labor Statistics index for all commodities. There were, however, substantial differences in price behavior of the various types of materials. These differences were related in part to the variety in market and industrial structures characterizing these products and in part to the uneven impact of demand arising from the nature of construction undertaken. Thus, the price advance for lumber was particularly sharp—44 percent on the average. (See table 57.) The extent of this rise is explained primarily by two factors: the demand

[1] Although higher than any year in the 1930's, the level of construction activity in 1941 was still considerably below that in the boom years of the middle 1920's. However, the nature of the later construction was, for obvious reasons, quite different, with relatively greater emphasis on industrial and military facilities.

for lumber was especially great in view of the Army cantonment program; in addition, lumber is produced by a large number of companies in contrast to the high degree of industrial concentration characteristic of most other building materials. Price changes for other products in this group ranged from virtual stability for structural steel, [2] plaster and plasterboard, plate glass, and cement to advances of 17½ percent for paints and paint materials and from 15 to 29 percent for asphalt roofing.

TABLE 57.—*BUILDING MATERIALS: Wholesale Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939 =100) of—							
	All building materials	Brick and tile	Cement	Lumber	Paint and paint materials	Plumbing and heating	Structural steel	Other building materials [1]
1939								
August	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
September	101.5	100.6	100.0	104.1	103.2	100.0	100.0	100.9
October	103.6	101.1	100.0	110.5	104.4	100.0	100.0	102.7
November	103.8	101.2	100.0	111.1	103.4	100.0	100.0	103.8
December	103.8	101.2	100.0	110.4	104.1	100.0	100.0	103.6
1940								
January	104.2	101.2	100.1	109.5	106.2	100.0	100.0	104.1
February	104.0	100.8	100.1	108.4	105.7	99.7	100.0	103.8
March	104.1	99.9	99.9	108.1	106.2	102.1	100.0	103.6
April	103.2	99.7	98.9	107.3	105.6	102.0	100.0	103.1
May	103.2	99.7	99.1	106.6	104.7	101.6	100.0	103.0
June	103.1	99.7	99.2	105.2	103.8	101.5	100.0	103.9
July	103.2	99.6	99.2	105.2	103.0	101.5	100.0	104.6
August	104.1	99.6	99.2	109.2	102.6	101.5	100.0	104.4
September	106.7	99.7	99.2	118.9	102.4	101.5	100.0	104.5
October	109.2	99.7	99.3	127.0	103.3	101.5	100.0	104.8
November	110.4	99.7	99.5	130.4	104.4	101.5	100.0	105.2
December	110.8	100.7	99.6	131.9	104.0	101.5	100.0	105.6
1941								
January	111.2	100.9	99.5	131.4	105.6	101.5	100.0	106.0
February	110.8	101.0	99.5	130.1	105.5	103.7	100.0	106.0
March	111.0	101.1	99.5	129.5	106.5	104.4	100.0	106.4
April	111.7	101.3	99.7	129.5	108.0	104.7	100.0	107.1
May	112.1	101.5	100.2	129.6	108.8	104.7	100.0	107.6
June	112.7	102.2	100.7	130.5	110.0	104.8	100.0	108.3
July	115.1	104.1	100.9	135.7	111.6	104.9	100.0	109.9
August	117.7	105.1	100.9	141.5	113.6	109.5	100.0	111.6
September	118.8	105.7	101.0	143.3	115.3	109.8	100.0	112.0
October	119.8	106.7	101.5	143.7	116.9	110.7	100.0	113.4
November	120.0	106.7	102.0	142.8	116.1	110.8	100.0	115.3
December	120.3	106.9	102.3	143.6	117.5	112.4	100.0	114.5

[1] Includes plaster and plasterboard, roofing, plate and window glass, sand, gravel and stone, hardware, and other lumber and metal products.

Except for the speculative rise immediately following the outbreak of war in Europe, the advance for lumber came in two main stages. From the early fall of 1940 until January 1941 prices rose briskly—as much as 30 percent above August 1939 for some of the leading softwoods—as the Government awarded contracts for Army camp construction. The Army buying program, which was hampered at the beginning by a lack of centralization and consequent exaggeration of

[2] Although quoted base prices for structural steel remained unchanged, the cost to buyers was raised considerably through the imposition of "extra" charges and the withdrawal of concessions formerly allowed. Prices of steel and steel mill products are discussed in Chapter VIII.—Metals and Metal Products.

actual demand,[3] subsided in the early months of 1941, but was resumed later. Accordingly, after a brief period of weakness, prices turned upward again in the early summer of 1941 and continued rising until in the fall and winter, a series of maximum prices were issued by the Price Administrator for products most widely out of line. Advances from August 1939 to December 1941 ranged from 47 to 58 percent for softwoods and averaged nearly 40 percent for hardwood flooring. For certain lumber products (millwork), such as Ponderosa pine doors, increases of more than 40 percent took place.

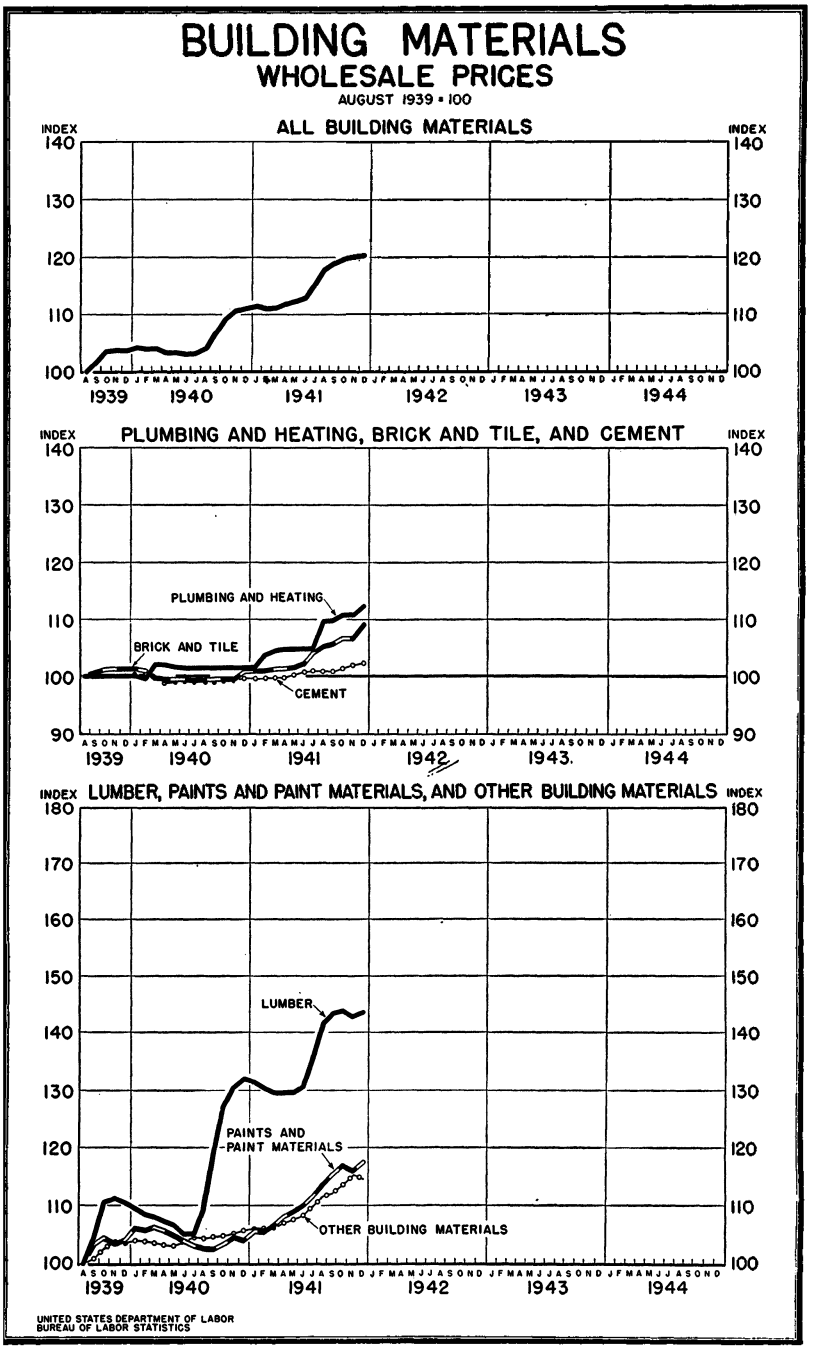
While tightness in supply appeared early in markets for lumber, capacity or near capacity levels of production for most other building materials were not approached until the late months of 1941. Some kinds of materials, however, remained in good supply. Output in most cases was centered mainly in a few large companies which throughout the 1930's had been burdened by costly excess capacity to produce. With the increase in demand during the Defense Period, production expanded promptly and the resulting reduction in overhead unit costs was in many cases substantial. Production of plaster and plasterboard, plumbing and heating equipment, window and plate glass, and cement rose substantially, some as much as 50 percent; but in several cases—e. g., window glass and cement—existing capacity was in considerable part, not being used.

Price increases between August 1939 and December 1941 for plumbing and heating equipment averaged 12 percent; for window and plate glass, plaster and plasterboard, and cement, changes varied from slight declines to increases of almost 6 percent. In the case of asphalt roofing initial increases were considerably greater—ranging up to 29 percent by November 1941—but maximum prices fixed in early December by the Office of Price Administration resulted in substantial reductions.

Prices of prepared paints were likewise relatively stable, despite the fact that the cost of paint materials rose substantially. The average increase during the Defense Period for prepared paints was 6 percent. On the other hand, increases for paint materials averaged 33 percent. These sharp advances occurred for various reasons. Some imported paint materials (such as China wood oil) were shut off or were more expensive to obtain, and their scarcity intensified pressure on supplies of certain domestic products such as linseed oil. For other products costs of production increased and, in the case of naval stores, supply was restricted by the conservation program of the Department of Agriculture.

Shortages of basic materials resulted in substantially higher prices for some metal products, as, for example, building hardware—locks and door knobs, rose as much as 40 and 75 percent, respectively, between August 1939 and December 1941. On the other hand, quotations for structural steel were relatively stable, though prices of some other metal products used in construction, such as copper and zinc sheets, increased substantially, as described in Chapter VIII—Metals and Metal Products.

[3] In describing conditions in the fall of 1940, the first quarterly report (for the period ended April 30, 1942) of the Office of Price Administration declared: "There was no centralization of Army purchases. Individual contractors, on being given contracts, went out into the market to bid, and at the same time called on brokers and dealers to assist them in finding the necessary materials. Though only a billion feet of lumber were needed in the cantonment program, more than 2 billion feet were being bid for in the market because of the confusion induced by this want of centralization."



During the comparable period in World War I, price increases for building materials were considerably greater in almost all cases. Against an over-all increase of 20 percent between August 1939 and December 1941, prices of building materials as a group rose 34 percent between July 1914 and November 1916. Unlike the current situation, however, the sharpest increases in World War I occurred for structural steel, for which prices rose 135 percent. On the other hand, prices of lumber in late 1916 were only 14 percent above their level at the outbreak of war. The sharp advance in structural-steel prices was in keeping with the behavior of most metals and metal products during the first World War. The relatively small increase for lumber, however, was largely fortuitous and was due to a temporary weakness in prices which occurred as the result of the transportation tie-up in 1916. The inability to ship lumber during that period, together with the fact that production is not susceptible to prompt curtailment because of the large number of producers in this industry, resulted in large supplies being accumulated which could be sold only at heavy discounts.

Softwoods

Softwood prices between August 1939 and December 1941 moved sharply upward on three different occasions. The first advance occurred shortly after the outbreak of war and reflected speculative activity and purchases by dealers for inventory; the second and largest increase came in the fall of 1940, with the initiation of the Army cantonment program; and the third rise took place in the fall of 1941, following renewal of the cantonment program, expansion of emergency construction of all kinds, and the efforts at substitution of lumber for scarce metals. By December 1941, prices of southern pine were 47 percent above their August 1939 level; quotations for Douglas fir were 58 percent higher and for western pine, 56 percent higher.

SOUTHERN PINE

Immediately after the outbreak of war in Europe, prices of southern pine rose substantially. The increase for No. 2 common boards, for example, amounted to almost 18 percent by November 1939. New orders, which had averaged 644 million board feet a month during the first half of 1939, jumped to 776 million in August and to 909 million in September, as dealers moved to build up inventories. (See table 57.) This flood of orders reflected mainly dealers' attempts to protect themselves against anticipated stock shortages at the mills, owing to heavy war demands;[4] in addition, many purchases were made in anticipation of a price rise reflecting higher minimum wages (scheduled to rise on October 24 from 25 to 30 cents per hour) established under the Fair Labor Standards Act.

After reaching a peak in November, the price turned downward because war demands failed to materialize as anticipated and construction activity showed no material increase. The large stocks which thus remained on hand depressed the market and prices declined gradually throughout the first half of 1940.

In July and August, however, southern pine prices began a rapid upward movement. Between July and November 1940 the price of

[4] The Timberman, January 1940.

No. 2 common board rose 51 percent to a peak of $33.01 per thousand board feet, f. o. b. mill—58 percent above its pre-war level. This advance resulted largely from the needs of the cantonment program following enactment of the Selective Service Act in September 1940. It was estimated, in August, that 650 million board feet of lumber of all types would be required immediately for this purpose and that between 4 and 5 billion board feet, almost one-fifth of the 1940 production, would be needed during the following 12 months.[5] In addition, building construction rose markedly during the second half of 1940, reaching a level, in October, 80 percent above the monthly average for the first 6 months of the year.[6] These increases in demand carried orders for the fall months to record levels, and in spite of substantially increased production, stocks of southern pine fell by December to 1,500 million board feet.

Several Government officials expressed concern at the rapid advance of softwood prices. On September 9, 1940, Price Commissioner Henderson stated that the sharp rise was caused by "unfounded rumors" relative to defense needs;[7] 2 weeks later Edward R. Stettinius, Jr., of the National Defense Advisory Commission echoed this sentiment, pointing out that no shortage of lumber would develop;[8] and on December 2, Thurman Arnold, head of the Anti-Trust Division of Department of Justice, intimated that price increases in the South might bring action from his office.[9]

By October the increase in new orders, which followed the inception of the cantonment program, had run its course; and in December, prices of southern pine began a gradual decline, as monthly orders dropped and stocks slowly rose to 1,800 million board feet by May 1941. The decline continued until June 1941, when the price of No. 2 common boards was 8 percent below its peak of the previous November, although still 45 percent above the August 1939 quotation. During this period the Army announced a plan to acquire gradually a stock pile of lumber, which could be used in the event of any future rapid expansion of demand, and which, it was hoped, would avoid any repetition of the price increase in the second half of 1940.[10]

Prices turned up again in July 1941, following a sharp increase in new orders, beginning in May. New orders rose from 888 million board feet in April to 1,216 million in July, owing to anticipation of a new cantonment program, expanded construction for ships, railroad cars, and aircraft, and the substitution of lumber in many cases for metals, which were becoming difficult to obtain.[11] Output lagged behind demand at this time, new orders averaging 19 percent above the level of production during May, June, and July. As a result, the price of No. 2 common boards rose from $30.28 in June to $34.55 in August, an increase of 14 percent.

To arrest this advance, the Office of Price Administration and Civilian Supply held a conference with representatives of the southern pine industry on August 6, and thereafter conferences were also held with numerous individual members of the trade. On August 16, 1941,

[5] Washington Post, August 31, 1940.
[6] U. S. Department of Commerce, Survey of Current Business.
[7] Washington Star, September 10, 1940.
[8] Wall Street Journal, September 27, 1940.
[9] Idem, December 3, 1940.
[10] Journal of Commerce, March 3, 1941.
[11] Idem, August 25, 1941.

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a price ceiling which reduced southern pine prices roughly $3 per thousand board feet was announced, effective September 5.[12] In establishing the ceiling, the Price Administrator declared that the order would result in savings of more than $20,000,000 per year to the Government and civilian consumers.

When the ceiling was announced on August 16, "practically all southern pine manufacturers felt that the prices were too low." [13] Following further conferences between Government officials and members of the industry, a revised order was issued on September 4, raising the level of a number of the ceiling prices. This adjustment, Mr. Henderson stated, was made, "after full hearing of their [the industry's] complaints and in the light of additional data collected by my office, * * *." [14] Finally, on November 19, additional minor adjustments were made in the order—freight-car construction lumber, previously omitted, was placed under the ceilings; certain of the established prices were moderately increased, and others were lowered.[15]

By December 1941, the price of No. 2 common boards had been reduced to $30.80 per thousand board feet—47 percent above its pre-war level, but 11 percent below the August 1941 peak.

DOUGLAS FIR AND WESTERN PINE

Price trends for Douglas fir and western pine during the Defense Period were similar to those for southern pine, although there were some differences in the extent of their advances. During the months immediately following the outbreak of war, prices rose sharply and then weakened through the early part of 1940. Prices of both types of lumber responded sensitively to the Government cantonment program in the latter part of that year. From July to December, quotations for Douglas fir rose about 50 percent and those for western pine about 35 percent. New orders during most of this period were considerably ahead of production. Commenting on the price advance, a representative of the West Coast Lumberman's Association declared:

> The National Defense Program came unexpectedly and very suddenly into the picture. There was no diminution in private building. We already had comfortable orders when during the balance of the year the Government came in with orders that represented, in broad terms, 20 percent of our production for the first half of the year.[16]

As in the case of southern pine, prices declined moderately during early 1941 and then turned upward abruptly as the pace of the National Defense Program quickened. By August, prices of Douglas fir were nearly 70 percent above their pre-war level and those for western pine were more than 50 percent higher. After repeated warnings, the Office of Price Administration and Civilian Supply issued a maximum price order for Douglas fir, fixing ceilings for the common grades at approximately prevailing market levels, though there were some reductions for upper-grade qualities.[17] During October and November, orders dropped well below the level of production and Douglas fir quotations declined, but jumped back to ceiling levels immediately following the attack on Pearl Harbor.

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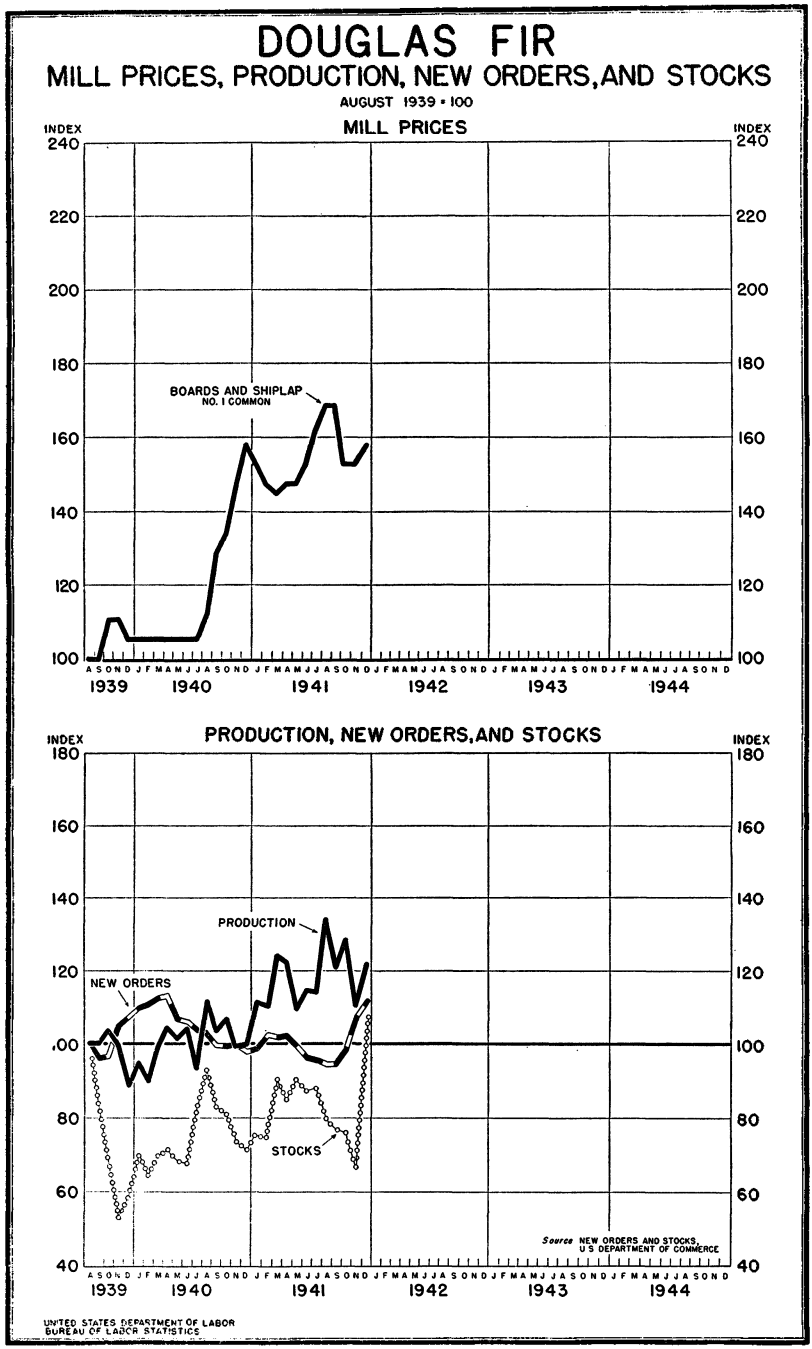
[12] Office for Emergency Management, Release No. PM 961, August 16, 1941.
[13] Southern Lumberman, December 16, 1941.
[14] Office for Emergency Management, Release No. PM 1081, September 4, 1941.
[15] Idem, Release No. PM 1603, November 19, 1941.
[16] Seattle Post Intelligencer, January 24, 1941.
[17] Office for Emergency Management, Release No. PM 1124, September 11, 1941.



Prices of western pine rose through October but weakened later because of rumors of Office of Price Administration action. On December 3, it was formally announced that maximum prices would be established, but these did not go into effect until 1942.[18]

TABLE 57.—*SOFTWOODS: Mill Prices, Production, New Orders, and Stocks, August 1939–December 1941*

[Sources: Production, new orders, and stocks—U. S. Department of Commerce, Survey of Current Business; prices—U. S. Bureau of Labor Statistics]

Year and month	Southern pine				Douglas fir [2]				Western pine [4]			
	Price index [1] (August 1939=100)	Production	New orders	Stocks end of month	Price index [3] (August 1939=100)	Production	New orders	Stocks end of month	Price index [5] (August 1939=100)	Production	New orders	Stocks end of month
		Millions of board feet				Millions of board feet				Millions of board feet		
1939												
August	100.0	705	776	2,018	100.0	613	884	869	100.0	554	517	1,965
September	106.7	640	909	1,907	100.0	613	721	838	105.1	503	607	1,977
October	117.5	686	677	1,811	110.5	634	589	839	114.0	494	476	1,954
November	117.7	663	561	1,825	110.5	611	470	908	117.7	432	310	1,953
December	115.5	626	495	1,919	105.3	544	516	930	116.7	292	331	1,923
1940												
January	114.9	669	667	1,949	105.3	580	615	953	116.2	215	325	1,829
February	112.8	708	666	2,014	105.3	553	568	961	114.5	212	300	1,744
March	110.9	807	758	2,037	105.3	604	615	976	114.0	279	354	1,672
April	109.1	826	852	2,028	105.3	639	629	981	114.5	390	400	1,664
May	105.1	856	869	1,991	105.3	621	603	926	110.3	524	457	1,745
June	104.1	763	784	1,996	105.3	637	599	920	108.0	543	421	1,861
July	104.4	793	967	1,912	105.3	573	734	900	103.5	572	495	1,962
August	111.3	914	1,142	1,814	112.3	684	821	892	100.9	620	653	2,043
September	131.9	937	1,103	1,681	128.9	634	733	865	109.5	551	629	2,051
October	154.8	1,049	1,171	1,556	134.2	653	713	860	122.9	546	546	1,997
November	157.7	931	960	1,477	147.4	608	649	867	139.7	415	441	1,917
December	155.6	910	832	1,503	157.9	611	636	851	140.3	344	397	1,812
1941												
January	154.2	968	978	1,506	152.6	683	666	855	142.2	266	425	1,663
February	154.7	858	856	1,539	147.4	677	660	889	140.7	269	380	1,551
March	152.1	931	839	1,642	144.7	760	799	885	140.8	348	480	1,479
April	150.8	956	888	1,737	147.4	750	749	888	142.3	475	502	1,469
May	147.2	962	970	1,795	147.4	672	797	867	142.1	579	560	1,523
June	144.7	850	1,076	1,747	152.6	703	771	838	141.4	623	637	1,593
July	152.7	931	1,216	1,590	161.8	700	776	831	143.9	682	607	1,665
August	165.1	949	893	1,456	168.4	822	705	819	150.8	695	523	1,733
September	157.9	898	885	1,422	168.4	742	679	821	153.9	671	543	1,775
October	148.2	896	861	1,375	152.6	787	671	854	157.8	646	542	1,788
November	147.2	824	771	1,398	152.6	678	590	929	157.6	443	387	1,779
December	147.2	859	800	1,425	157.9	747	946	971	156.2	362	491	1,721

[1] No. 2 common board; 1" x 8", S/L, S. L., includes rough, S1S to S4S, shiplap, and center matched, loose, carlot or mixed car.

[2] Data on production, new orders, and stocks refer to lumber produced in the States of Washington and Oregon only and include small quantities of western hemlock, western red cedar, and Sitka spruce.

[3] Boards and shiplap, No. 1 common; 1" x 8", R. L., dried, S4S, mixed carlot.

[4] Data on production, orders, and stocks refer principally to Ponderosa pine but also include minor quantities of Idaho white pine, sugar pine, and a few other types. 1941 figures are industry estimates and are subject to revision as Census data become available.

[5] Ponderosa pine, No. 3 common board; 1" x 8", R. L., S2 or 4S, loose, carlot or mixed car.

Hardwood Flooring

While hardwood finds a wide variety of uses, its principal use in the construction industry is for flooring. During the Defense Period, the

[18] The order was issued on February 4, 1942, effective on February 15. It established maximum prices at approximately the levels prevailing in the first week of October 1941. (Office of Price Administration, Release No. PM-224, February 4, 1942.)

sharp rise in demand for hardwoods for this purpose was coupled with that arising from their use in ships, Army cantonments, crates and boxes, tent pegs and stakes, Army cots, and other war products. Between August 1939 and December 1941 prices of hardwood flooring rose about 40 percent.

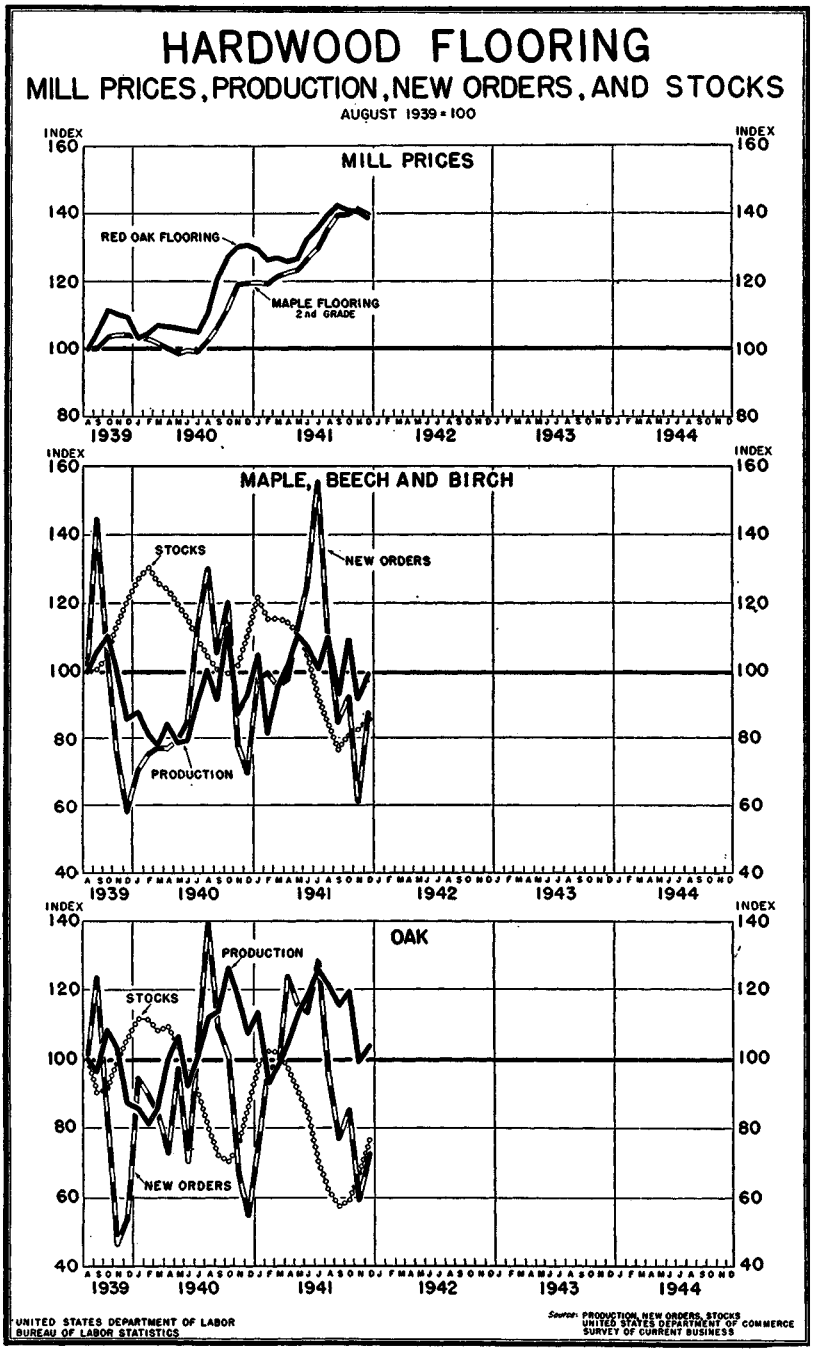
The advance in prices which immediately followed the outbreak of war in August 1939 was based primarily upon a brisk rise in orders for purposes of inventory accumulation. Between August 1939 and December 1939 stocks of maple, beech, birch, and oak flooring rose about 8½ percent. Prices of maple flooring increased 4 percent and those for oak flooring, 9 percent. This speculative rise in new orders soon tapered off, however, and prices leveled off during the first half of 1940. When the price advance was resumed in the summer of 1940, it was sharper and more firmly grounded.

The initiation of the National Defense Program at this juncture involved both large-scale industrial construction and, as pay rolls increased, a substantial improvement in residential building. In addition, the passage of the Selective Service Act also reacted strongly on hardwood markets. Purchases for cantonments, cots, tent stakes, and similar products stimulated markets for hardwood and led many buyers to place orders for flooring in anticipation of higher prices. In July, August, and September, new orders reached an average level about 24 percent above production. "Inventories of large [oak flooring] plants," according to the Southern Lumberman (October 1, 1940), were "oversold by many millions of feet." As late as November 15, the same trade journal reported that "flooring factories are still working at full capacity, selling their product at advanced prices; and the price of flooring oak is still inching upward." Mill prices of red-oak flooring rose from $55.63 per thousand board feet in July to $69.22 in December, an advance of about 24 percent. Similarly, quotations for maple flooring rose 20 percent, from $55.30 per thousand board feet to $66.59.

In January 1941, Price Commissioner Henderson pointed out that the increase in the general price level had amounted to only 2 percent from May 1940 and that lumber prices were "completely out of line." [19] Industry representatives replied that price advances were caused by huge Government orders needed for immediate delivery, particularly for the construction of Army camps. However, during the following 4 months prices remained fairly stable. In the case of maple flooring, there was a slight increase in price between January and May of 3 percent; but for oak flooring, there was a slight decline of 2 percent. Contributing factors were a seasonal decline in building and the fact that the first stage of the Army construction program had been completed. Nonetheless, optimism in the trade remained general and trade journals typically reported that "the market has a very firm undertone." [20]

The sharp upturn in prices began in May and June. Lower grades of flooring moved more rapidly into industrial uses, while the higher grades were being used increasingly in shipbuilding and other defense construction.[21] Army purchases were materially increased when it became apparent in the summer that the term of service of selectees

[19] New York Times, January 24, 1941.
[20] American Lumberman, February 22, 1941.
[21] Idem, June 28, 1941.



would be extended. By June many flooring sellers were having difficulty filling orders, and some obstacles developed to the rapid expansion required in supply. Many producers in the South were concentrating on pine to the exclusion of oak, since pine prices were at premium levels. Production in some areas was also limited by heavy rains during the spring of 1941. New orders during several periods ran materially above production. Flooring stocks from January to December 1941 declined by 23 percent. By December 1941 the price of maple flooring was $78.14 per thousand board feet, 40 percent above its level of August 1939; and prices of oak flooring had risen 39 percent.

In early December, Office of Price Administration officials met with representatives of the industry to discuss the imposition of maximum prices, but formal control was not established until February 1942.

TABLE 58.—*HARDWOOD FLOORING: Mill Prices, Production, New Orders, and Stocks, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; other data—U. S. Department of Commerce, Survey of Current Business]

Year and month	Maple, beech, and birch flooring				Oak flooring			
	Price index [1] (August 1939=100)	Production	New orders	Stocks, end of month	Price index [2] (August 1939=100)	Production	New orders	Stocks, end of month
		Thousands of board feet				Thousands of board feet		
1939								
August	100.0	8,150	8,250	15,900	100.0	41,180	47,117	72,679
September	100.3	8,600	11,900	16,000	105.0	39,835	58,230	65,647
October	103.5	9,000	8,650	16,600	111.7	44,750	38,729	66,397
November	104.2	8,150	6,200	18,050	110.2	42,497	21,890	71,603
December	104.1	7,000	4,800	19,125	109.3	36,046	25,692	77,066
1940								
January	103.9	7,150	5,800	20,125	103.2	35,252	44,622	81,295
February	102.9	6,600	6,200	20,700	104.7	33,435	42,338	81,012
March	101.8	6,350	6,350	20,035	106.9	35,266	39,658	78,471
April	100.3	6,850	6,350	19,700	106.8	41,190	34,438	79,397
May	98.9	6,420	6,550	19,060	105.7	43,865	45,935	75,139
June	99.9	6,450	7,000	18,400	105.6	38,015	33,357	70,027
July	99.0	7,450	9,350	17,350	105.0	41,658	49,587	65,317
August	102.2	8,175	10,725	16,600	110.5	46,148	65,836	57,879
September	106.4	7,500	8,700	16,000	120.2	46,916	51,344	52,712
October	112.3	9,200	9,900	15,850	127.4	51,938	47,571	51,426
November	118.9	7,100	6,450	16,200	130.2	48,413	31,588	55,197
December	119.2	7,600	5,750	17,500	130.6	44,254	25,942	62,788
1941								
January	119.8	8,550	8,075	19,300	129.4	46,656	35,903	71,503
February	119.2	6,650	8,225	18,350	126.2	38,409	45,981	74,235
March	121.4	7,800	7,900	18,350	126.9	40,369	45,931	73,938
April	122.1	8,275	8,075	18,200	125.8	43,227	58,267	70,737
May	123.3	9,000	9,300	17,750	126.5	46,761	54,442	65,533
June	126.5	8,750	10,350	16,675	132.4	48,686	53,489	61,580
July	129.9	8,200	12,800	14,800	135.4	51,865	60,524	51,038
August	135.4	8,950	9,050	13,425	139.8	49,925	44,781	44,962
September	139.3	7,600	7,000	12,200	142.0	47,432	36,363	41,955
October	139.8	8,900	7,650	12,850	140.8	49,227	40,080	43,088
November	141.1	7,500	5,050	13,100	140.4	40,910	28,102	48,278
December	139.9	8,075	7,225	13,625	138.7	42,697	34,286	55,875

[1] Maple flooring, 2d grade; 25/32" x 2¼", face, standard lengths, bundled, carlot, f. o. b. cars, Cadillac, Mich.

[2] Oak flooring, red; select, plain, 25/32" thickness, 2¼" face, average length 4' bundled, carlot, f. o. b. Memphis, Johnson City, or Alexandria (basing points).

Paints and Paint Materials

Between 1939 and 1941 the volume of paint sales in the United States rose 41 percent, and in the face of this sharp increase in demand shortages of several important paint materials developed. This was particularly true of certain strategic materials and also products obtained wholly or in part from abroad. During the Defense Period, prices of paint materials as a group increased 33 percent. However, prices of finished paints maintained their characteristic stability, rising on the average only 7 percent. The average increase for paints and paint materials together, between August 1939 and December 1941, was 17½ percent.

PAINTS AND VARNISHES

Although a large number of firms are engaged in the production of paints and varnishes, a substantial portion of total output is accounted for by only a few companies. In 1937, the four largest companies accounted for 33 percent of the total production of mixed paints, 59 percent of the total for enamel, and 29 percent for varnish.[22] In general, prices of paints and varnishes are stable and show little correspondence with changes in raw-material costs.[23]

The wholesale price of ready-mixed paints is largely a matter of administrative determination, and different methods are used by the different firms in the industry. Management weighs innumerable factors, such as costs of production and distribution, known or rumored prices of competitors, type of paint needed in the locality, etc., and sets up a list or lists with specified volume, trade, and cash discounts. Departures from the trade lists are relatively rare, except when prices may be reduced in order to secure the order for a large job.[24]

From 1937 through January 1940, wholesale prices of the principal paints and varnishes were unchanged. Despite constantly rising raw-material costs, price changes even after this date were relatively small. Production in 1941 was nearly 40 percent above that in 1939 and the industry's chief problem was the supply of raw materials, some of which grew scarce. Although average hourly earnings rose substantially during the Defense Period, unit labor costs declined as a result of the higher rate of output.[25] The net increases in prices of the principal standardized products of the industry between August 1939 and December 1941 were 8 percent for inside flat house paint, 6 percent for outside flat house paint, 7 percent for floor varnish, and 5 percent for white enamel.[26]

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[22] Geographical Differentials in Prices of Building Materials, by Walter G. Keim (Temporary National Economic Committee, Monograph No. 33), p. 123.

[23] Varnish and enamel are usually somewhat more responsive to changes in raw-materials costs than paints, the principal component ordinarily being China wood oil.

[24] Temporary National Economic Committee, Monograph No. 33, p. 125.

[25] Average hourly earnings in the paint and varnish industry rose by about 16 percent between August 1939 and December 1941. Unit labor costs, however, declined 6 percent between the years 1939 and 1941. See Productivity and Unit Labor Costs in Selected Manufacturing Industries, 1919–40, 1941 Supplement (U. S. Bureau of Labor Statistics, mimeographed report).

[26] It is possible that price increases for unstandardized products (some of which were highly important in industry during the Defense Period) were greater, but because of frequent changes in specifications, price indexes for these "specialties" are virtually unobtainable.

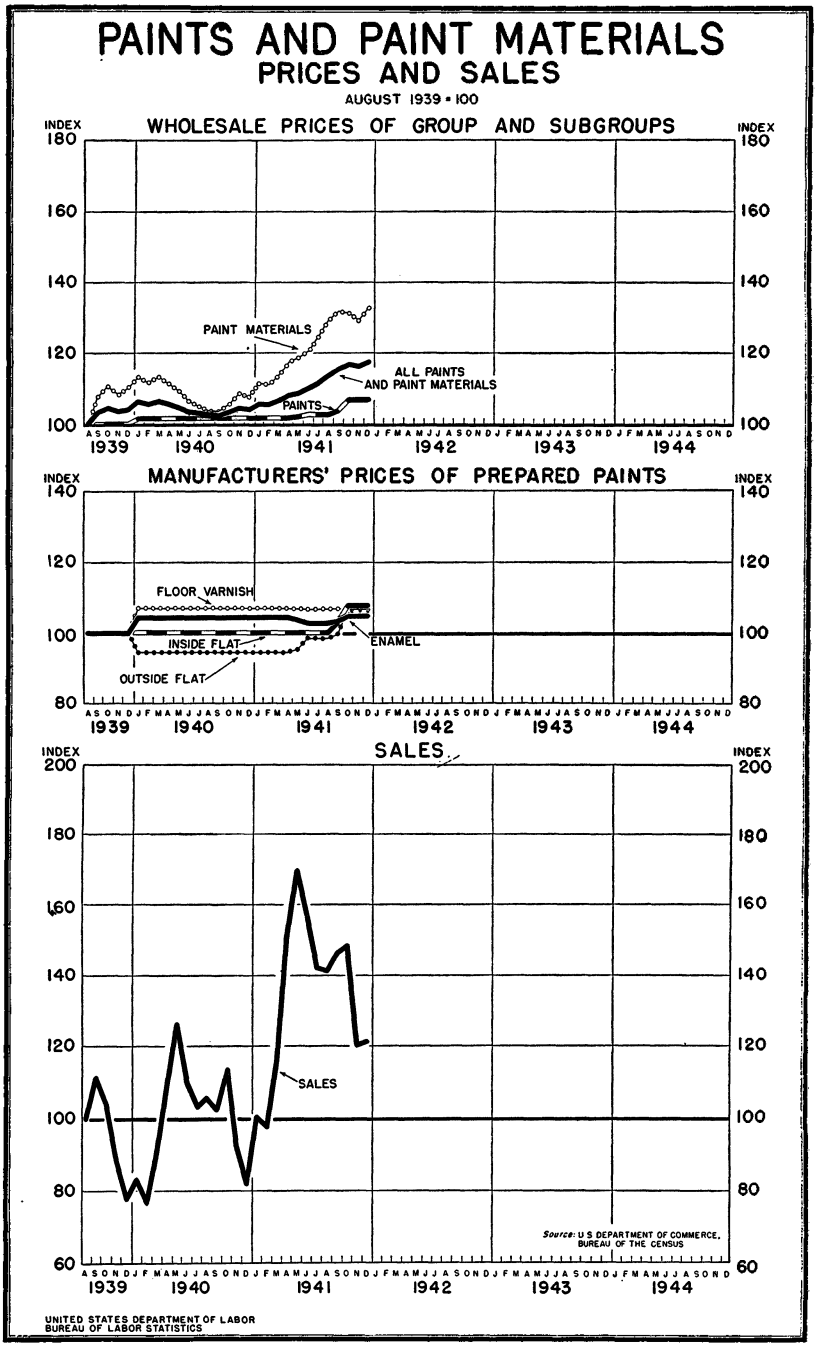


TABLE 59.—*FINISHED PAINTS AND VARNISHES: Sales and Wholesale Prices, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; sales—U. S. Bureau of the Census]

Year and month	Sales	Price indexes (August 1939=100) of—				
	Paint, varnish, lacquer, and filler	All paints	House paint		Enamel, white	Floor varnish
			Inside, flat	Outside, flat		
1939						
August	100.0	100.0	100.0	100.0	100.0	100.0
September	111.4	100.0	100.0	100.0	100.0	100.0
October	104.0	100.0	100.0	100.0	100.0	100.0
November	88.5	100.0	100.0	100.0	100.0	100.0
December	77.8	100.0	100.0	100.0	100.0	100.0
1940						
January	83.2	101.6	100.0	94.4	104.2	107.0
February	77.0	101.6	100.0	94.4	104.2	107.0
March	91.7	101.6	100.0	94.4	104.2	107.0
April	109.3	101.6	100.0	94.4	104.2	107.0
May	126.2	101.6	100.0	94.4	104.2	107.0
June	110.0	101.6	100.0	94.4	104.2	107.0
July	103.2	101.6	100.0	94.4	104.2	107.0
August	105.8	101.6	100.0	94.4	104.2	107.0
September	102.5	101.6	100.0	94.4	104.2	107.0
October	113.7	101.6	100.0	94.4	104.2	107.0
November	92.6	101.6	100.0	94.4	104.2	107.0
December	82.2	101.6	100.0	94.4	104.2	107.0
1941						
January	100.5	101.6	100.0	94.4	104.2	107.0
February	97.8	101.6	100.0	94.4	104.2	107.0
March	116.7	101.6	100.0	94.4	104.2	107.0
April	150.8	101.6	100.0	94.4	104.2	107.0
May	169.6	101.9	100.0	95.3	103.8	106.9
June	157.7	102.6	100.0	98.2	102.8	106.6
July	142.2	102.6	100.0	98.2	102.8	106.6
August	141.2	102.6	100.0	98.2	102.8	106.6
September	146.2	103.7	103.1	99.8	103.2	106.6
October	148.4	106.8	107.8	106.3	104.8	106.6
November	120.1	106.8	107.8	106.3	104.8	106.6
December	121.1	106.8	107.8	106.3	104.8	106.6

PAINT MATERIALS[27]

Drying Oils

Linseed oil, the leading drying agent, is derived from the crushing of flaxseed; and the prices of these two products ordinarily fluctuate in close correspondence.[28] The outbreak of war was followed by a sharp advance in the price of linseed oil, which was largely lost in 1940 as available supplies continued to be ample and important export markets were destroyed by German invasion. In the late months of 1940, however, the price moved upward again, reached a peak 33 percent above its pre-war level in September 1941, and then declined moderately.

There were several reasons for the sustained advance during the first 9 months of 1941. The effects of a bumper flaxseed crop in Argentina[29] were partly offset by an American loan of $100,000,000 to that country, which, according to the trade, enabled Argentina to

[27] Solvents have been omitted from the following discussion because the primary factors affecting prices of these products have been discussed in the section on alcohols and solvents in Chapter VI—Chemicals and Allied Products. Between August 1939 and December 1941, prices of ethyl acetate and butyl acetate, used in paint manufacture, rose 32 and 38 percent, respectively.

[28] Cost of material constitutes about 80 percent of the total value of linseed oil.

[29] About 60 to 70 percent of United States supplies of flaxseed are ordinarily produced domestically, the rest being imported.

support the price at which flaxseed was marketed.[30] Consumption of linseed oil in 1941 was 39 percent greater than in 1940 and 56 percent greater than in 1939; demand was augmented not only by the rise in paint and varnish sales, which reached an all-time high, but also by the expanding use of linseed oil as a substitute for foreign drying oils, which were growing more and more difficult to obtain. In August 1941, the Department of Agriculture announced that loans would be granted to domestic flaxseed growers on the 1942 crop. However, linseed-oil production rose sharply and the Department of Commerce in its report on the paint and varnish industry in October 1941 stated that there was "no statistical basis for rising prices."[31] In October and November, the price of linseed oil declined from its September peak, but in December 1941 quotations were still 26 percent above August 1939 levels.[32]

TABLE 60.—*DRYING OILS: Wholesale Prices, Production, Consumption, and Imports, August 1939–December 1941*

[Sources: Production and consumption—U. S. Bureau of the Census; imports—U. S. Bureau of Foreign and Domestic Commerce; prices—U. S. Bureau of Labor Statistics]

Year and month	Linseed oil			China wood oil	
	Production (quarterly)	Factory consumption (quarterly)	Price index [1] (August 1939=100)	Imports (thousands of pounds)	Price index [2] (August 1939=100)
	Millions of pounds				
1939					
August			100.0	4,592	100.0
September	134	88	115.1	5,713	120.9
October			118.6	6,679	128.6
November			114.0	3,098	113.6
December	166	88	118.6	12,593	116.4
1940					
January			124.4	16,158	122.7
February			118.6	7,262	122.7
March	150	86	123.3	8,886	122.3
April			125.6	1,279	110.5
May			122.1	11,862	105.0
June	128	99	115.1	14,874	103.6
July			107.0	18,721	115.0
August			101.2	9,941	117.7
September	135	101	97.7	1,884	119.5
October			96.5	4,414	121.8
November			100.0	456	121.8
December	192	100	102.3	1,312	121.8
1941					
January			110.5	959	124.1
February			110.5	76	125.5
March	196	107	115.1	4,015	130.0
April			124.4	3,516	136.4
May			125.6	4,702	140.5
June	183	143	125.6	2,500	145.5
July			131.4	8,005	146.8
August			130.2	1,216	154.5
September	237	142	132.6	906	161.4
October			125.6	(3)	163.6
November			117.4	(3)	160.5
December	252	146	125.6	(3)	162.7

[1] Raw, New York.
[2] Atlantic Coast.
[3] Not available for publication.

[30] Journal of Commerce, December 6, 1940.
[31] The United States Paint and Varnish Industry, October 1941. (U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce, Industrial Reference Service.)
[32] The effect of a 50-percent reduction in the import tax on flaxseed, as the result of a trade conference in September 1941, appeared to be short-lived. The price of both linseed oil and flaxseed declined in October and November, but rose again in December when the Argentine Government offset the duty reduction by placing flaxseed prices under official government control and by increasing the Buenos Aires quotation.

Price increases for imported drying oils, such as China wood, perilla, and oiticica oils, were even greater. In the months immediately after the outbreak of war—from August to December 1939—increases amounted to 16 percent for China wood oil, 27 percent for perilla oil, and 17 percent for oiticica oil. Through 1940 these advances held for the most part, and further increases occurred in 1941 as scarcity became more pronounced. Thus, during the first 9 months of 1941 shipments of China wood oil received from the Far East were 72 percent below those in the corresponding period of 1940 and 54 percent below 1939. By December 1941, price increases above the August 1939 levels amounted to 63 percent for China wood oil, 82 percent for perilla oil, and 31 percent for oiticica oil.

Pigments and Colors

With some exceptions, prices of pigments and colors rose only moderately during the Defense Period. The chief exceptions were whiting, quotations for which advanced 45 percent between August 1939 and December 1941, and carbon and bone black, which rose 48 and 55 percent, respectively. In the case of whiting, supplies had come primarily from Europe and the loss of these sources led to scarcity. In the case of carbon black, prices prior to the war had been especially low and costs of production rose sharply.[33] Prices of bone black rose mainly because of higher costs of raw materials, which were derived primarily from foreign sources.

Only moderate price advances occurred for other pigments and colors, despite the fact that supplies of almost all products in this group were smaller than the large quantities in demand in 1941. Relative stability was mainly attributable to three factors. In many cases—such as white lead—production was concentrated in a few companies.[34] Prompt priority controls were imposed over numerous derivatives of the strategic metals, such as chrome pigments and zinc oxide, and minimized competitive bidding for scarce products. Increased production of some commodities in cases where output had been well below capacity resulted in appreciable reductions in unit overhead costs. Informal agreements in the fall of 1941 between the Office of Price Administration and some producers also helped to stabilize quotations. On the other hand, advances occurred for commodities such as red lead, white lead, litharge, and zinc oxide. Price increases between August 1939 and December 1941 ranged from 3 percent for chrome yellow to 14 percent for litharge.[35]

[33] In late June 1941, Price Administrator Henderson reached an informal agreement with carbon-black producers to maintain stable prices in the third quarter of the year. In December, however, additional price increases were permitted by the Office of Price Administration as the result of sharply rising costs. Although important as a paint material, carbon black is used mainly in the rubber industry.

[34] In 1937 more than 90 percent of the value of all white lead sold was produced by the four largest firms.

[35] The price of one relatively unimportant blue pigment, ferrocyanide of iron, declined slightly during the Defense Period. Low prices for this product were apparently due to a price war among producers which occurred in early 1940.

TABLE 61.—*PIGMENTS AND COLORS: Wholesale Prices by Kind, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Wholesale-price indexes (August 1939=100) of—										
	Blacks			Chrome colors		Lead pigments		Litharge, commercial, powdered	Lithopone, domestic, ordinary strength	Whiting, commercial, imported chalk	Zinc oxide, domestic, leaded, 5 percent pigment
	Bone black, grade 6	Carbon black, standard	Iron oxide, type 1	Green, 21–25 percent blue	Yellow, dry	Red, dry (95 percent or less)	White, in oil				
1939											
August	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
September	100.0	100.0	100.0	100.0	100.0	104.7	101.6	105.5	100.0	100.0	106.6
October	100.0	100.0	100.0	100.0	100.0	105.9	104.1	106.8	100.0	114.7	106.6
November	100.0	100.0	100.0	100.0	100.0	105.9	104.1	106.8	100.0	125.0	106.6
December	118.2	100.0	100.0	100.0	96.1	105.9	104.1	106.8	100.0	125.0	103.3
1940											
January	118.2	113.0	100.0	100.0	93.5	105.9	104.1	108.2	95.0	125.0	100.0
February	118.2	113.0	100.0	100.0	93.5	101.2	104.1	104.1	97.5	125.0	100.0
March	118.2	113.0	100.0	100.0	93.5	103.5	104.1	106.8	97.5	125.0	100.0
April	118.2	121.7	100.0	100.0	93.5	100.0	104.1	102.7	97.5	125.0	100.0
May	118.2	121.7	100.0	100.0	93.5	100.0	104.1	102.7	97.5	125.0	103.3
June	118.2	121.7	100.0	100.0	93.5	100.0	104.1	102.7	97.5	125.0	106.6
July	118.2	134.8	100.0	100.0	93.5	100.0	104.1	102.7	97.5	125.0	106.6
August	118.2	134.8	100.0	100.0	93.5	97.6	104.1	100.0	97.5	125.0	104.9
September	118.2	134.8	100.0	100.0	93.5	97.6	104.1	100.0	97.5	125.0	103.3
October	118.2	134.8	100.0	100.0	93.5	104.7	104.1	106.8	97.5	125.0	104.9
November	118.2	134.8	100.0	100.0	93.5	108.2	104.1	112.3	97.5	125.0	104.9
December	118.2	134.8	100.0	100.0	93.5	105.9	104.1	109.6	97.5	125.0	104.9
1941											
January	118.2	134.8	100.0	100.0	93.5	105.9	104.1	109.6	102.5	131.6	104.9
February	118.2	134.8	100.0	100.0	93.5	105.9	104.1	109.6	102.5	131.6	104.9
March	118.2	134.8	100.0	100.0	93.5	109.4	104.1	113.7	102.5	131.6	104.9
April	118.2	143.5	100.0	100.0	93.5	109.4	104.9	113.7	102.5	131.6	104.9
May	118.2	143.5	100.0	100.0	93.5	109.4	108.1	113.7	102.5	131.6	104.9
June	154.5	143.5	106.3	100.0	93.5	109.4	108.1	113.7	102.5	131.6	104.9
July	154.5	147.8	106.3	100.0	93.5	109.4	108.1	113.7	102.5	131.6	104.9
August	154.5	147.8	106.3	100.0	93.5	109.4	108.1	113.7	102.5	131.6	104.9
September	154.5	147.8	106.3	102.1	96.1	109.4	108.1	113.7	102.5	131.6	104.9
October	154.5	147.8	106.3	108.3	103.2	109.4	108.1	113.7	102.5	144.7	104.9
November	154.5	147.8	106.3	108.3	103.2	109.4	108.1	113.7	102.5	144.7	104.9
December	154.5	147.8	106.3	108.3	103.2	109.4	108.1	113.7	102.5	144.7	104.9

Naval Stores

For naval stores price increases between August 1939 and December 1941 were large, amounting to 166 percent for turpentine and 56 percent for rosin. Demand for both products increased enormously, especially in 1941, while production was reduced substantially under the Department of Agriculture conservation program.

In 1940, production of both rosin and turpentine was limited by the Forest Service of the Department of Agriculture to 80 percent of 1938 output and in 1941 this was further reduced to 75 percent. At the same time, the Government loan rate for turpentine was raised from 19.7 cents per gallon in 1939 to 21.7 cents in 1940 and to 28.7 cents in 1941. Because an extremely large proportion of annual production of rosin went into loan (51 percent in 1939 and 40 percent in 1940) the loan rate for this commodity was reduced from $2.45 per hundred pounds in 1939 to $2.19 in 1940 and to $1.93 in 1941; however, this rate was raised to $2.43 in August 1941.

Shortly after the outbreak of war, prices of both commodities started an advance which lasted until March 1940, when quotations for turpentine were 25 percent above the August 1939 level and for rosin, 17 percent. During succeeding months prices weakened; spreading of the war curtailed European markets [36] and domestic demand remained uncertain. This weakness was short-lived in the case of turpentine—quotations took an upward turn in August 1940 and continued to rise throughout the remainder of the Defense Period. Both foreign and domestic demand rose abruptly, while production in 1941 was 27 percent less than in 1939. The state of the market is illustrated by the following statement from the Journal of Commerce of August 18, 1941:

> Skyrocketing turpentine prices last week, due to powerful domestic demand and the first of many shipments to Britain, shoved the rosin market into a back seat and left the New York industry in a frenzy of bewilderment. Gum spirits [turpentine] leaped 15½ cents per gallon at Savannah to 75½ cents, the best price in almost 14 years.

Prices of rosin remained below their August 1939 level until June 1941. Supplies of this commodity had been especially great, although stocks were steadily reduced by rising consumption. The price advance in the latter part of the year was aided by the sharp increase in Government loan rates in August. Between June and December 1941, the price of rosin rose by more than 50 percent.

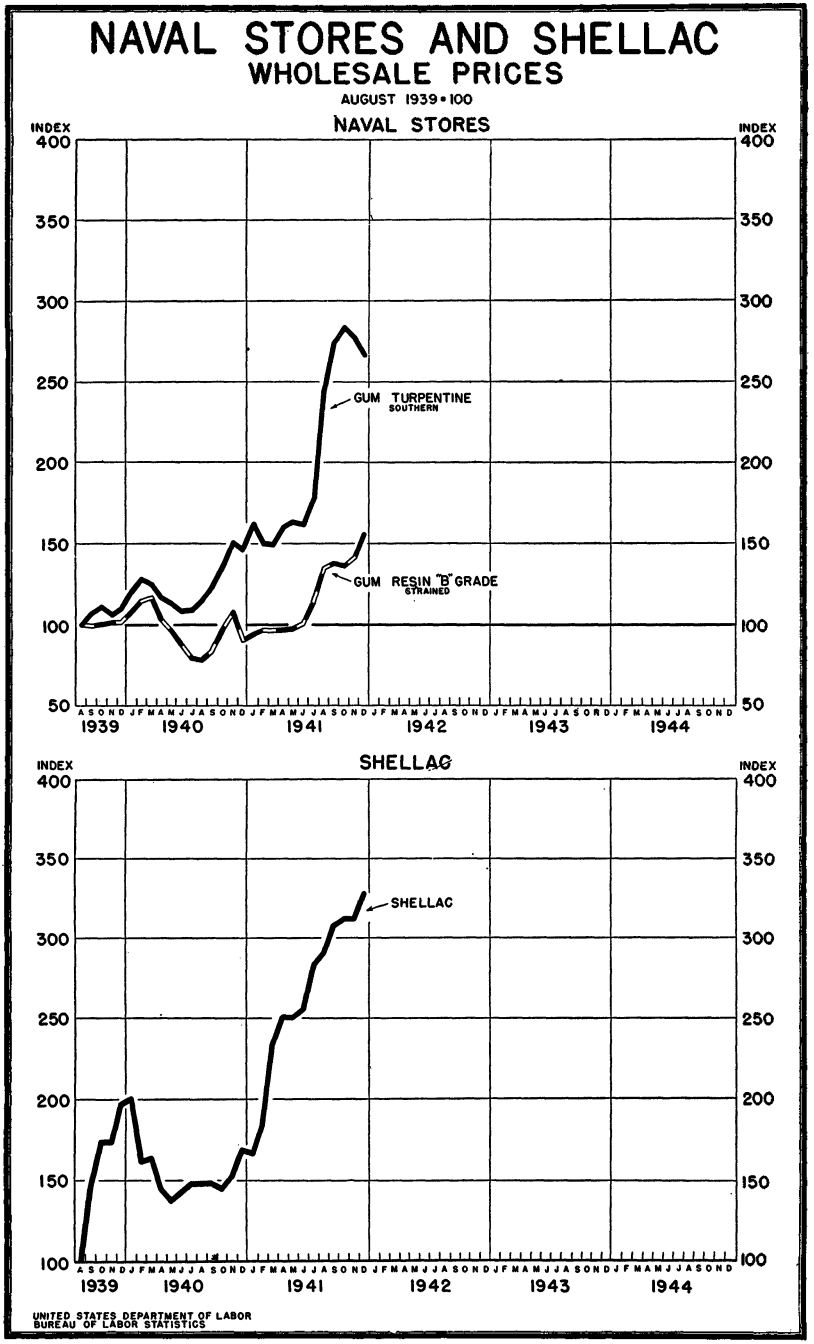
Shellac

Among the sharpest price increases during the Defense Period was that for shellac, quotations for which rose 228 percent between August 1939 and December 1941. Supplies of this commodity come almost entirely from British India.[37] While receipts from the Far East remained at a high level throughout the Defense Period, they were limited by the fact that preference in allocating scarce shipping space was usually given to the more strategic commodities derived from that area. Although supply increased, demand—both to meet the much higher rate of consumption and also to build stocks in anticipation of further military developments—had apparently risen even more. Ocean freight rates and war-risk insurance mounted substantially. In addition, sellers in Calcutta apparently boosted prices considerably beyond the level justified by increases in costs of production and marketing. The Oil, Paint and Drug Reporter of July 21, 1941, commented on this situation as follows:

> Shellac importers have developed a substantial concern about the recent turn of events in India. Prices have been advancing more or less steadily of late and local factors have come to believe that at least some of the rise should be attributed to speculative activity in Calcutta.
>
> Conceding that deliveries of shellac from the interior to the Calcutta godowns have been reduced by the need to move manganese and other vital war materials, and accepting as fact the reports of unusual rains being a deterrent on shellac movements, there still remains the speculator in Calcutta who takes advantage of other conditions to feather his particular nest at the expense of price stability in the markets throughout the world.
>
> Local quotations have not risen to an extent warranted by the prevailing cost to import from the source at the present time and it is hoped that efforts made here

[36] Ordinarily about 50 percent of domestic production of rosin and about 40 percent of turpentine is exported.

[37] Imports are obtained either in the form of crude lac, marketed in the seed, button, and stick, or in the form of unbleached shellac. Crude lac is refined in the United States to produce the shellac of commerce.



to end Calcutta speculations may make it possible to avoid higher prices. These efforts have taken the form of protest cables sent to India by the United States Shellac Importers' Association and the American Bleached Shellac Manufacturers' Association acting jointly in a common cause.

Between August 1939 and December 1940 prices of shellac doubled. In mid-1940 quotations weakened as the result of uncertainties concerning the progress of the war and the National Defense Program, but then turned sharply upward again. By December 1941 the price was substantially more than triple its level of August 1939. Government price control was not imposed until shortly after the attack on Pearl Harbor.

TABLE 62.—*NAVAL STORES AND SHELLAC: Receipts, Stocks, Wholesale Prices, and Imports, August 1939–December 1941*

[Sources: Receipts and stocks—U. S. Department of Commerce, Survey of Current Business; prices—U. S. Bureau of Labor Statistics; imports—U. S. Bureau of Foreign and Domestic Commerce]

Year and month	Gum turpentine			Gum rosin			Shellac		
	Receipts at 3 ports [1]	Stocks,[2] end of month	Price index [3] (August 1939=100)	Receipts at 3 ports [1]	Stocks,[2] end of month	Price index [4] (August 1939=100)	Imports		Price index (August 1939=100)
							Lac	Shellac	
	Thousands of 50-gal. barrels			Thousands of 500-lb. barrels			Thousands of pounds		
1939									
August	14	102	100.0	58	673	100.0	1,619	1,449	100.0
September	16	101	107.4	60	679	99.6	2,912	2,767	144.9
October	15	93	111.1	55	631	100.4	1,509	2,617	173.5
November	11	99	106.0	44	643	101.3	3,916	2,705	173.5
December	10	95	110.4	51	642	101.3	2,230	2,593	196.9
1940									
January	1	77	120.5	12	605	107.4	2,175	3,172	200.0
February	1	67	128.9	7	570	114.8	2,740	4,273	161.2
March	1	58	125.2	8	544	117.0	1,325	2,249	163.3
April	7	51	117.1	27	522	103.9	1,081	1,704	144.9
May	9	51	113.4	38	517	96.9	1,312	2,886	137.8
June	11	53	108.4	43	529	88.2	506	1,940	142.9
July	12	54	109.4	46	520	79.5	1,463	3,396	148.0
August	11	55	115.4	48	524	78.6	1,891	3,236	148.0
September	10	51	123.5	40	522	83.4	2,211	2,312	148.0
October	8	45	136.2	40	528	97.4	2,102	1,228	144.9
November	8	44	150.3	35	542	107.9	2,442	2,131	159.2
December	7	40	146.0	34	561	90.8	871	1,463	168.4
1941									
January	3	35	162.4	18	560	94.3	1,804	1,802	166.3
February	2	34	150.3	12	542	96.9	3,261	4,800	183.7
March	5	24	149.7	10	524	96.5	1,673	2,197	232.7
April	6	25	160.7	19	506	96.5	199	766	250.0
May	8	27	163.8	36	490	97.8	2,269	3,852	250.0
June	10	32	162.1	31	484	100.4	1,857	3,378	255.1
July	8	37	178.5	34	461	114.4	3,695	4,574	282.7
August	10	34	244.0	30	429	134.1	4,158	5,615	290.8
September	11	37	273.8	29	420	137.1	3,638	2,987	307.1
October	11	26	283.2	25	373	136.2	(5)	(5)	311.2
November	6	19	277.5	35	297	141.0	(5)	(5)	311.2
December	12	16	266.4	35	270	155.9	(5)	(5)	327.6

[1] Receipts at Savannah, Jacksonville, and Pensacola. These figures are not accurate indicators of production; however, during the Defense Period their broad movements were in the same direction and in most cases, of relatively the same extent as the changes in annual production statistics for turpentine and rosin compiled by the Department of Agriculture.
[2] Stocks at Savannah, Jacksonville, and Pensacola.
[3] Southern, gum spirits.
[4] B grade, strained, yard basis.
[5] Not available for publication.

Plaster and Plasterboard

Prices of plaster and plasterboard were virtually unchanged during the Defense Period. This stability is characteristic of the industry; throughout the 1930's prices changed very little and, except for a brief period in 1937, the few moderate changes which did occur were upward. The industry is highly concentrated, three firms accounting for about 75 percent of total output.[38]

TABLE 63.—*PLASTER AND PLASTERBOARD: Manufacturers' Prices, Consumption, and Crude Gypsum Supply, August 1939–December 1941*

[Sources: Gypsum lath consumption and crude gypsum supply—U. S. Department of Commerce, Survey of Current Business; prices—U. S. Bureau of Labor Statistics]

Year and month	Price indexes (August 1939=100)		Consumption [2]	Crude-gypsum supply [3]		
	Plaster [1]	Plasterboard [2]	Plaster lath	Imports	Production	Total apparent supply [4]
			Thousands of short tons			
1939						
August	100.0	100.0				
September	100.0	100.0	342	446	996	1,442
October	100.3	100.0				
November	100.3	100.0				
December	100.3	99.6	290	530	813	1,343
1940						
January	100.3	99.6				
February	100.3	99.6				
March	100.0	99.6	236	173	585	758
April	100.0	99.6				
May	100.0	99.6				
June	99.7	99.6	384	313	917	1,230
July	99.7	99.6				
August	99.7	99.6				
September	99.7	99.6	453	531	1,129	1,660
October	99.7	99.6				
November	99.7	99.6				
December	99.7	99.6	388	388	1,033	1,421
1941						
January	99.7	99.6				
February	99.7	99.6				
March	99.7	99.6	323	175	812	987
April	99.7	99.6				
May	99.6	99.6				
June	99.6	99.6	473	326	1,198	1,524
July	99.6	99.6				
August	99.6	99.6				
September	99.6	99.6	480	367	1,336	1,703
October	101.1	99.6				
November	101.1	99.5				
December	101.1	99.5	567	(5)	1,361	(5)

[1] Base coat, neat cement or wood fiber.
[2] Lath, fireproof, ⅜″ thick, 16″ wide, 48″ long.
[3] Quarterly.
[4] Represents total of production plus imports.
[5] Not available for publication.

Between August 1939 and December 1941, manufacturers' quotations for plaster rose 1 percent; those for plasterboard declined 0.5 percent. A general price advance in the industry—threatened when the leading producer announced intention to increase prices—was averted in January 1941 when the Office of Price Administration and

[38] According to a statement of the U. S. Department of Commerce, published in the Journal of Commerce, February 29, 1940.

Civilian Supply reached an informal agreement with the industry to maintain stability.[39] Consumption rose sharply during the Defense Period, especially in the case of prefabricated building boards which were widely used in the construction of cantonments. Production of crude gypsum—the raw material for plaster and plasterboard—rose 67 percent between the last quarter of 1939 and the last quarter of 1941. Some shipping difficulties, however, were experienced in obtaining imports from Canada where American producers own raw-material resources.

Asphalt Roofing

Production of asphalt roofing products reached all-time high capacity levels during the Defense Period and prices moved upward materially. By November 1941, prices of various types of asphalt shingles had advanced from 15 to 29 percent above their August 1939 levels. These quotations were maintained through early December until shortly after the attack on Pearl Harbor, when maximum prices were established by the Office of Price Administration at considerably lower levels.

TABLE 64.—*ASPHALT ROOFING: Manufacturers' Prices and Shipments, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; shipments—U. S. Bureau of the Census]

Year and month	Price indexes (August 1939=100) of—				Shipments
	Roofing		Shingles		Prepared roofing (M squares)
	Medium	Slate-surfaced	Individual	Strip	
1939					
August	100.0	100.0	100.0	100.0	3,923
September	102.3	102.9	100.0	100.0	3,868
October	102.3	104.0	100.0	100.9	4,612
November	102.3	104.8	100.0	101.4	2,460
December	103.6	107.3	101.9	102.2	1,489
1940					
January	106.0	110.1	105.4	102.6	1,188
February	107.2	110.7	105.6	102.9	1,925
March	113.1	113.4	107.7	104.6	2,056
April	116.3	115.0	108.6	106.1	2,253
May	116.3	115.0	108.6	106.1	2,875
June	116.3	115.0	108.6	106.1	2,661
July	115.6	114.4	107.7	105.5	2,941
August	112.4	112.2	106.5	103.3	3,483
September	112.4	112.2	106.5	102.8	3,902
October	111.5	110.9	104.7	101.0	4,222
November	111.5	110.9	104.7	101.0	2,927
December	111.5	110.9	104.7	101.0	2,164
1941					
January	113.6	112.0	104.7	101.0	2,354
February	113.6	111.5	104.7	101.0	2,515
March	112.1	109.4	103.1	99.8	3,105
April	112.2	109.1	101.2	99.0	3,141
May	112.9	109.5	101.2	98.9	3,753
June	116.5	113.4	104.7	102.3	3,570
July	119.0	116.8	107.0	104.4	4,062
August	122.4	120.6	110.2	108.3	3,981
September	123.8	123.0	111.3	110.0	4,146
October	128.9	127.7	116.2	115.1	4,737
November	128.9	127.7	116.2	115.1	3,825
December	119.5	118.3	109.2	109.7	3,033

[39] According to the Office of Price Administration, "No reason was given for the prospective price advance, except that the management of the company felt that circumstances permitted an increase and that the added income would be useful in the company's business." (First Quarterly Report for the Period ended April 30, 1942, p. 170.)

Price movements during 1939 were generally upward from the low levels of 1938, which in some instances were below those of 1932 and 1933. The increase in wholesale prices from January to December 1939 amounted to 5 percent for individual shingles, 7 percent for smooth-surfaced roofing, 13 percent for slate-surfaced roofing, and 5 percent for strip shingles. These gains were extended further and reached a peak during the second quarter of 1940, but were followed by price recessions during the remainder of the year.

In January 1941, wholesale prices repeated the pattern of the previous year by showing small gains over the preceding December. In this instance, however, the price increases were supported by a substantial gain in shipments over the corresponding months of the previous year. At the end of the first 8 months of 1941, the industry was operating at capacity levels and shipments were in excess of 26 million "squares," the highest output on record for any similar period. Substantial price rises had been effected by July 1941 with increases over January varying from 2 percent for individual shingles to nearly 5 percent for smooth-surfaced roll roofing. Successive price increases occurred each month thereafter until prices were stabilized by the Office of Price Administration in early December,[40] with a "roll-back" from 5 to 10 percent to the levels prevailing on June 29, 1941.

Plumbing and Heating Equipment

Prices of plumbing and heating equipment [41] rose by an average of 12 percent from August 1939 to December 1941. In the first part of this period—until January 1941—prices moved narrowly, continuing the stability which ordinarily characterized their behavior during peacetime. In fact, in the 4 years from January 1937 to January 1941, the range of movement of the composite Bureau of Labor Statistics index for this group was only 5 percent.

In February 1941, however, prices started to rise, supported by a large volume of sales and heavy demand arising from the defense program, including housing for defense workers as well as cantonments. Production costs, both of labor and material, were beginning to increase. An initial price rise of 2 percent occurred in February 1941, followed by additional increases almost every month thereafter, with a particularly sharp rise in August. The total increase in the composite index from January to November 1941 amounted to approximately 9 percent. The actual rise in realized prices was greater, partly because some transactions prior to the advance had been made below published price lists.

While base prices were thus rising, leading manufacturers liberalized their policy with respect to freight allowances, absorbing full carlot freight on shipments anywhere in the United States. Smaller producers also modified their policy to grant larger allowances, though they did not in general go as far in this direction as the leaders. The net result of these changes was to lessen the effect of the increases in base prices in areas remote from centers of production; that is, in the territory west of the Mississippi and south of the Ohio. Thus,

[40] The order was issued on December 1, effective December 12, 1941.

[41] The plumbing and heating industries are highly concentrated. In 1941 the three largest companies accounted for 70 percent of the cast-iron enamel ware (plumbing equipment) output, 41 percent of boiler production, and 64 percent of radiation production. (U. S. Office of Price Administration.)

the increase in delivered prices of plumbing and heating equipment in the South and West was somewhat less than the reported change in plant prices, not only in percentage terms, but also in dollars and cents.

TABLE 65.—*PLUMBING AND HEATING MATERIALS: Manufacturers' Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939=100) of—					
	All plumbing and heating	Boilers [1] (average of 6 types)	Radiators, 38-inch, 5 tube, standard [1]	Tubs		Water closets, staple, washdown bowl and staple tank
				Bath, recess 5 feet [2]	Laundry, 48 by 24 inches [3]	
1939						
August	100.0	100.0	100.0	100.0	100.0	100.0
September	100.0	100.0	100.0	100.0	100.0	100.0
October	100.0	100.0	100.0	100.0	100.0	100.0
November	100.0	100.0	100.0	100.0	100.0	100.0
December	100.0	100.0	100.0	100.0	100.0	100.0
1940						
January	100.0	100.0	100.0	100.0	100.0	100.0
February	99.7	98.3	98.2	101.3	100.0	101.8
March	102.1	98.3	98.2	105.2	102.6	107.3
April	102.0	98.3	98.2	105.2	102.6	107.3
May	101.6	98.3	98.2	105.2	102.6	107.3
June	101.5	98.3	98.2	105.2	102.6	107.3
July	101.5	98.3	98.2	105.2	102.6	107.3
August	101.5	98.3	98.2	105.2	102.6	107.3
September	101.5	98.3	98.2	105.2	102.6	107.3
October	101.5	98.3	98.2	105.2	102.6	107.3
November	101.5	98.3	98.2	105.2	102.6	107.3
December	101.5	98.3	98.2	105.2	102.6	107.3
1941						
January	101.5	98.3	98.2	105.2	102.6	107.3
February	103.7	106.6	104.9	105.2	102.6	107.3
March	104.4	109.4	107.1	105.2	102.6	107.3
April	104.7	109.4	107.1	105.2	102.6	107.3
May	104.7	109.4	107.1	105.2	102.6	107.3
June	104.8	109.4	107.1	105.2	102.6	107.3
July	104.9	109.4	107.1	105.2	102.6	107.3
August	109.5	118.2	114.5	106.7	102.6	110.2
September	109.8	118.2	114.5	106.7	102.6	110.2
October	110.7	118.2	114.5	106.7	105.2	110.2
November	110.8	118.2	114.5	106.7	113.1	110.2
December	112.4	118.2	114.5	109.6	113.1	116.8

[1] Water or steam systems.
[2] Double shell front, no fittings, enameled iron, shipping weight 385 pounds
[3] 2-part cement composition with 6-inch back and steel supporting frame, with fittings.

Window and Plate Glass

The average wholesale price of window glass rose about 6 percent during the Defense Period, as the result of a price increase put into effect in July 1940. Production of window glass in this period showed an increase of 27 percent in 1940 and a further rise of 21 percent in 1941. In November 1941, the industry was operating at 80 percent of capacity compared with 53 percent in August 1939.

Plate-glass prices remained stable throughout the entire Defense Period. This stability was maintained while production was expanding considerably; 1940 output was 16 percent above 1939, and 1941 output showed a further rise of 16 percent.

TABLE 66.—*PLATE AND WINDOW GLASS: Manufacturers' Prices and Production, August 1939–December 1941*

[Sources: Prices—U. S. Bureau of Labor Statistics; Production—U. S. Department of Commerce, Survey of Current Business]

Year and month	Price indexes (August 1939=100)		Production	
	Window glass (25-inch bracket)		Polished plate glass (M sq. ft.)	Window glass (M boxes)
	Single A	Single B		
1939				
August	100.0	100.0	10,450	867
September	100.0	100.0	13,663	914
October	100.0	100.0	18,369	1,121
November	100.0	100.0	15,812	1,143
December	100.0	100.0	18,477	1,189
1940				
January	100.0	100.0	17,257	1,413
February	100.0	100.0	13,175	1,099
March	100.0	100.0	14,302	1,107
April	100.0	100.0	12,367	1,023
May	100.0	100.0	11,721	1,068
June	100.0	100.0	9,783	908
July	105.6	105.9	8,522	994
August	105.6	105.9	12,533	993
September	105.6	105.9	14,091	1,002
October	105.6	105.9	17,070	1,349
November	105.6	105.9	16,059	1,264
December	105.6	105.9	17,491	1,458
1941				
January	105.6	105.9	19,350	1,561
February	105.6	105.9	15,664	1,397
March	105.6	105.9	18,266	1,417
April	105.6	105.9	18,344	1,400
May	105.6	105.9	18,394	1,282
June	105.6	105.9	18,534	1,304
July	105.6	105.9	12,463	1,281
August	105.6	105.9	14,126	1,267
September	105.6	105.9	14,906	1,123
October	105.6	105.9	15,769	1,524
November	105.6	105.9	14,277	1,300
December	105.6	105.9	10,311	1,696

Cement

In most cities the price of cement remained unchanged throughout the Defense Period, and in others it rose only fractionally. By December 1941, the composite delivered price for 48 cities, as computed by the Bureau of Labor Statistics, had risen only a little more than 2 percent above the August 1939 level and 3 percent above that of April 1940, its lowest position of the entire period. Of the 48 cities for which the Bureau of Labor Statistics collects prices, the price of cement between August 1939 and December 1941 showed no change in 27 and in 5 actually declined. In 16 cities there was an advance in price, but in only 5 of these did the increase exceed 10 percent.

That the price of cement did not participate in the general upward price movements during the Defense Period was due to a number of factors, which included the high ratio of transportation charges to the value of cement, the price stability typical of the industry,[42] the existence of considerable excess productive capacity, the stability of unit labor costs, and the favorable condition of company earnings.

[42] This stability had been characteristic of the price for a number of years. In the 6 years from January 1936 to December 1941 the range of the composite monthly index amounted to only 5.1 percent.

Production, shipments, and stocks remained relatively stable throughout 1940, showing only the normal seasonal changes. The lag in business in the first part of 1940 was reflected in a slight decline in price between February and April. The average monthly production of cement for the entire year 1940—10,854,000 barrels—was only slightly above that of 1939—10,152,000 barrels.

In 1941, however, the demand and production of cement increased markedly, the monthly average output rising 25 percent to 13,655,000 barrels. Mounting factory and residential construction, as well as the demand for military establishments, such as cantonments, contributed to this increase in output. The rate of operations thus rose from 56 percent of capacity in 1939 and 60 percent in 1940 to 65 percent in 1941. However, this increase in the rate of productive operations still left much of the industry's capacity unused. Even in October 1941, the most active month of the entire period for the industry, 21 percent of its capacity was not in operation. This adequacy of supply obviously tended to prevent the development of any powerful upward pressure upon prices.

A further factor which tended to keep cement prices stable was the movement of costs. The increase in output in 1941, although falling well below capacity operations, tended to reduce both overhead charges and unit labor costs. The number of man-hours required per barrel of cement produced declined markedly as output rose. In 1938, when operations were at the rate of 48 percent of capacity, 45.7 man-hours were required to manufacture 100 barrels of cement, whereas in 1940, at 60 percent of capacity, only 39.1 man-hours were required.[43]

As a result of this decline in unit labor requirements with the increase in output, unit labor costs in 1941 were 1.5 percent below the level in 1939,[44] despite the fact that during the same period average hourly earnings had increased 12 percent.

TABLE 67.—*PORTLAND CEMENT: Wholesale Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Month	Indexes (August 1939=100)			Month	Indexes (August 1939=100)		
	1939	1940	1941		1939	1940	1941
January		100.1	99.5	July		99.2	100.9
February		100.1	99.5	August	100.0	99.2	100.9
March		99.9	99.5	September	100.0	99.2	101.0
April		98.9	99.7	October	100.0	99.3	101.5
May		99.1	100.2	November	100.0	99.5	102.0
June		99.2	100.7	December	100.0	99.6	102.3

Sand, Gravel, and Crushed Stone

Sand, gravel, and crushed stone are the chief materials used in combination with cement to make concrete. About 80 percent of all sand and gravel, generally produced jointly, is used in some type of building or highway construction. These materials are abundant and

[43] Monthly Labor Review, October 1941 (U. S. Bureau of Labor Statistics), p. 873.
[44] Unit Labor Cost in Selected Manufacturing Industries, 1919–40; Supplement, 1941. (U. S. Bureau of Labor Statistics, mimeographed report.)

available over widely scattered areas, but are used only within a narrow radius of their point of production. Costs of production and prices are influenced almost entirely by local conditions. Every State in the Union reports some production and the small plant is the most typical unit in the industry.[45] High transportation costs tend to confine the distribution of these products to a limited area.

Practically all of these commodities are distributed directly from the producer to the user, including contractors, Government agencies, railroads, and ready-mixed concrete plants. Wide variations in the quality of sand, gravel, and stone deposits have caused specifications to be drawn up somewhat loosely for pricing purposes.

Average prices of sand, gravel, and stone, as reported to the Bureau of Labor Statistics, represent a combination of local prices which may have divergent movements in different areas. The indexes of the Bureau are composites based on prices in 31 widely scattered areas in the case of sand, and in 28 areas in the case of gravel. The index for crushed stone is based on the price in New York City alone.

Price movements for all these products from August 1939 have been confined to a very narrow range. The composite price of sand increased only 5 percent during the period from August 1939 to December 1941. During the year 1940, the month-to-month price trend was slightly downward, but this trend was reversed in 1941. The largest single increase occurred from July to August 1941 when the index rose about 3 percent.

Gravel prices showed a similar stability, rising only slightly more than 4 percent from August 1939 to December 1941. Composite prices declined gradually during 1940, but reversed this trend during 1941 with increases slightly more than the previous year's decreases. Crushed stone prices in New York remained constant throughout the entire Defense Period.

TABLE 68.—*SAND AND GRAVEL: Manufacturers' Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939=100) of—		Year and month	Indexes (August 1939=100) of—	
	Sand, building	Gravel, building		Sand, building	Gravel, building
1939			*1940*—Con.		
August	100.0	100.0	November	98.9	98.2
September	100.2	100.1	December	99.0	98.5
October	100.6	100.4			
November	100.8	100.4	*1941*		
December	100.8	100.1	January	99.7	98.6
			February	99.8	98.7
1940			March	99.7	98.7
January	101.9	100.9	April	98.9	98.9
February	101.9	101.2	May	99.8	100.1
March	101.4	100.6	June	100.3	100.1
April	100.5	99.9	July	100.6	101.1
May	99.5	99.2	August	103.5	102.9
June	99.4	99.1	September	103.8	103.3
July	99.4	98.5	October	103.8	103.1
August	99.5	98.7	November	104.2	103.3
September	99.7	98.6	December	105.1	104.3
October	99.2	98.5			

[45] Geographical Differentials in Prices of Building Materials, by Walter G. Keim (Temporary National Economic Committee, Monograph No. 33), p. 409.

Brick and Tile

Both brick and tile have a high ratio of weight and transportation expense to production cost. Consequently, although there are many brick and tile producers in the United States, markets are localized and intermarket competition is severely restricted by freight rates. Price differentials from community to community are substantial, particularly between producing and nonproducing centers.

For many years, wholesale prices of common building brick have varied comparatively little. From 1935 to 1939, the movement of prices was exceedingly narrow, participating neither in "the broad upswing of most commodities during 1935–37 nor in the subsequent down-swing in 1938." [46] During 1940 the composite price of common building brick retained this stability. In August 1939, the composite price at the plant was $12.04 per 1,000. By January 1940, the price had risen only 7 cents and by December 1940 only 16 cents, increases of approximately 1 percent each, above the August 1939 level. In 1941 a more pronounced increase took place which by December had carried the composite price to $12.96 per thousand, almost 8 percent above the pre-war figure.

These averages, of course, concealed considerable variations between different areas. The rising demand attendant upon the greater activity in building was readily met in most areas by an increase in output which lessened the upward pressure on price. However, in those areas in which defense work was concentrated, brick prices rose more rapidly, because of the intensity of demand attendant upon defense construction and because of the difficulty of retaining labor forces.

Prices of tile, which were affected in much the same way as those of brick by the economic developments of the Defense Period, also remained comparatively stable. None of the quotations of five important types of tile—drain, roofing, hollow building, floor, and wall—participated in the general upward price movement at the outbreak of war, remaining unchanged from August 1939 to January 1940.

In January 1940, the market weakened as a result both of the normal seasonal trend and of depressed economic conditions. Thus, shipments of floor and wall tile, which had reached a level of 6,172 thousand square feet in August 1939, dropped to 3,658 thousand square feet in February 1940.[47] In February prices of standard grades of floor and wall tile were reduced 8 and 15 percent, respectively.

Prices continued at these levels until April 1941, when they recovered about half their previous loss, and quotations for floor and wall tile rose to levels 4 and 8 percent, respectively, below those prevailing in August 1939. (See table 69.) These increases were followed by further advances in August, bringing the prices for both floor and wall tile to 6 percent above August 1939 figures, where they remained through the end of the Defense Period. At the same time the price of drain tile, which had been unchanged since the outbreak of the war, was raised in August 1941 to 6 percent above its pre-war level and again in September to 13 percent above that level, remaining at the latter figure through December 1941.

[46] Geographical Differentials in Prices of Building Materials, by Walter G. Keim (Temporary National Economic Committee, Monograph No. 33), p. 384.
[47] Survey of Current Business (U. S. Bureau of Foreign and Domestic Commerce).

TABLE 69.—*BRICK AND TILE: Wholesale Prices, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939=100) of—			Year and month	Indexes (August 1939=100) of—		
	Brick, common building	Tile			Brick, common building	Tile	
		Floor, standard	Wall, glazed white			Floor, standard	Wall, glazed white
1939				*1940—Con.*			
August	100.0	100.0	100.0	November	100.9	92.5	85.1
September	100.0	100.0	100.0	December	101.3	92.5	85.1
October	100.0	100.0	100.0				
November	100.4	100.0	100.0	*1941*			
December	100.3	100.0	100.0	January	101.4	92.5	85.1
				February	102.1	92.5	85.1
1940				March	102.8	92.5	85.1
January	100.6	100.0	100.0	April	102.3	96.2	92.2
February	100.7	92.5	85.1	May	103.3	96.2	92.2
March	100.7	92.5	85.1	June	103.9	96.2	92.2
April	100.8	92.5	85.1	July	104.5	96.2	92.2
May	101.0	92.5	85.1	August	105.6	106.1	105.9
June	100.6	92.5	85.1	September	106.6	106.1	105.9
July	100.5	92.5	85.1	October	107.0	106.1	105.9
August	100.5	92.5	85.1	November	107.3	106.1	105.9
September	100.7	92.5	85.1	December	107.7	106.1	105.9
October	100.9	92.5	85.1				

These price advances in 1941 accompanied a marked increase in sales for cantonments, factories, and residential dwellings. Floor and wall tile shipments, which had risen from a monthly average of 4,826 thousand square feet in 1939 to 5,201 thousand in 1940—largely as a result of a marked improvement during the last half of the year—increased further to 5,803 thousand in 1941.

However, prices of two types of tile—roofing and hollow building—were unaffected by this strengthening of the market, remaining completely unchanged throughout the Defense Period. This represented merely a continuation of an extended period of stability for hollow building tile, as its price had shown practically no change for 4 years before 1939.[48]

[48] Geographic Differentials in Prices of Building Materials, by Walter G. Keim (Temporary National Economic Committee, Monograph No. 33), p. 386.

Chapter X.—Paper and Pulp, Rubber, and Other Commodities

Summary

Among the products important in wholesale commodity markets and incorporated into the "miscellaneous" classification of the Bureau of Labor Statistics wholesale price index are rubber, certain rubber products, paper and pulp, soap, cattle feed, tobacco products, and certain others. As a group, prices of all these miscellaneous commodities rose an average of 20 percent between August 1939 and December 1941. This chapter is devoted primarily to a discussion of two of the most important groups contributing to this advance—rubber and rubber products and paper and pulp.[1] The basic factors affecting the prices of cattle feed and of soap are discussed, respectively, in the sections on grains (chapter I) and on inedible fats and oils (chapter VI) of this bulletin. Prices of tobacco products changed only slightly during the Defense Period, rising 2½ percent as the result of higher Federal taxes.

Increases for paper and pulp and for crude rubber were greater than the average for all miscellaneous commodities—28 and 33 percent, respectively. (See table 70.) In both cases consumption, primarily civilian, reached all-time high levels during the Defense Period.

TABLE 70.—*Wholesale Prices of Paper and Pulp, Rubber and Rubber Products, and All Miscellaneous Commodities, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939=100) of—			
	All miscellaneous commodities [1]	Paper and pulp	Crude rubber	Tires and tubes
1939				
August	100.0	100.0	100.0	100.0
September	104.5	102.3	136.7	100.0
October	105.9	107.9	122.3	100.0
November	105.1	110.0	121.8	91.9
December	105.6	111.3	121.5	91.9
1940				
January	106.0	112.3	113.5	91.9
February	105.5	111.9	110.9	91.9
March	104.9	111.3	109.7	91.9
April	106.0	111.9	112.9	95.9
May	106.0	113.4	126.4	95.9
June	105.5	114.6	132.7	96.2
July	106.0	116.9	126.6	97.2
August	104.6	116.9	117.5	97.2
September	104.4	116.5	114.0	97.2
October	104.9	116.5	119.2	97.2
November	105.7	116.4	122.9	96.9
December	105.5	116.4	122.3	96.4
1941				
January	105.2	116.4	117.5	96.2
February	104.9	116.6	120.9	96.2
March	105.9	116.9	130.7	96.5
April	107.2	118.1	136.4	97.2
May	108.6	120.9	142.7	97.2
June	110.0	122.5	130.7	97.2
July	111.9	123.5	131.8	97.2
August	114.2	125.9	137.0	100.5
September	116.1	127.1	135.0	100.5
October	117.9	127.4	133.5	108.3
November	119.1	127.8	132.7	111.4
December	119.5	128.1	132.7	111.4

[1] Includes paper and pulp, crude rubber, tires and tubes; also tobacco products, cattle feed, soap, lubricating oils, and other items.

[1] Rubber and rubber products and paper and pulp account for about half of the aggregate value of all "miscellaneous" commodities.

Prices of paper and pulp were also affected by the loss of pulp imports from Scandinavia, following the German invasion of western Europe. European nations had normally supplied a substantial part of United States requirements, particularly for chemical pulp. Although increased domestic production and heavier Canadian shipments gradually compensated for these losses, prices of chemical wood pulp and waste paper (raw material for boxboard) roughly doubled, and those for most finished paper products also rose materially. This advance was retarded, though in most cases not stopped at once, by informal agreements between producers and the Office of Price Administration. In the case of waste paper and paperboard formal maximum price schedules were established in the fall of 1941.

Prices of crude rubber were affected primarily by shipping difficulties and political relations between the United States and Japan. Efforts of the Government to accumulate a stock pile were hindered first by the fact that the Rubber Reserve Company's maximum buying price was often below the level of the market price, and later by the shortage of shipping space. Civilian consumption, however, mounted rapidly throughout the period, until mid-1941 when a conservation order was issued and the Rubber Reserve Company was established as sole purchaser of crude rubber from the Far East.

Increases in prices of rubber products were, of course, less than those for crude rubber. Between August 1939 and December 1941, quotations for tires and tubes rose 11 percent, but actual price increases were probably greater because of the withdrawal of concessions.[2] Informal control of these prices was established by the OPA in June 1941. Prices of other rubber products, such as rubber heels, garden hose, and rubber footwear, rose from 11 to 20 percent.

During World War I the price situation for both crude rubber and paper and pulp was materially different. In the case of rubber, no shortage—actual or prospective—developed. Although shipping space grew scarce, supplies in the Far East were greater than the demand in the United States and in the allied countries, and shipments were adequate. At the same time, requirements for both civilian and military use were not so large as during the present war. The price of rubber rose only 5 percent from July 1914 to November 1916, as compared with a 33-percent advance from August 1939 to December 1941.

On the other hand, prices of paper and pulp rose much more sharply during World War I—about 90 percent between July 1914 and November 1916, as compared to 28 percent during the similar period in World War II. The reasons for these sharp price increases were serious shortages of certain basic raw materials and speculation sufficiently widespread to warrant an investigation by the Federal Trade Commission on order of Congress.[3]

Paper and Pulp

The great rise in demand for paper products during the Defense Period paralleled the growth in general industrial activity, and production rose to all-time high levels. The quantity of raw materials necessary to achieve this output, however, was supplied with some

[2] The Rubber Age, November 1939, p. 111.
[3] History of Prices During the War, by Wesley C. Mitchell. (War Industries Board Bulletin, No. 31, p. 8, Washington, 1919.)

difficulty. Pulp imports from Scandinavia, the world's most important source, were cut off in April 1940 by the German invasion. The collection of waste paper, used in production of boxboard, was slow to increase during the period of great expansion in 1941.

Price increases for paper and pulp products as a group during the Defense Period amounted to 28 percent, and would have been considerably larger except for the customary stability in the price of newsprint. Increases were greatest (nearly 100 percent) for the raw materials of paper and paperboard manufacture—pulp and waste paper. The effect of the rise in pulp prices was somewhat limited by the fact that the industry is highly integrated. Only about a fourth of all pulp output in the United States is produced for sale, the rest being consumed by producing companies.[4]

However, an important part—about one-fifth—of the pulp domestically consumed is ordinarily obtained from abroad. Imports are especially large for the important chemical pulps—sulfate or "kraft" and sulfite—which are used in the production of wrapping, stationery, book, tissue, and cleansing papers, and in combination with waste paper for the manufacture of boxboard. Prior to the German invasion in Western and Northern Europe, these imports came mainly from Sweden, Finland, and Norway. Canada also supplies some chemical wood pulp, but ships mainly manufactured newsprint.

Because of the importance of foreign trade, the rise in prices following the outbreak of the war was immediate and general—and founded primarily upon widespread rumors of shortages and shipping difficulties. By December 1939, increases for chemical pulp amounted to 29 percent for sulfite and 13 percent for kraft. The price of waste paper [5] doubled between August and October 1939 and maintained that level until the end of the year. Prices of finished paper products also advanced—from 37 to 50 percent for boxboard, and from 6 to 14 percent for wrapping, book, and tissue papers. (See table 71.) The only important quotation which did not move up in the fall of 1939 was that for newsprint, which, during the entire Defense Period, remained at levels prevailing from August 1938.[6]

Unlike the prices of most other commodities, those of paper and pulp products generally remained firm in early 1940. The exception to this general rule was waste paper, which reacted sharply from its early speculative flurry; by April 1940, quotations dropped below their pre-war level and as a result boxboard prices also declined, though much more moderately. However, prices of pulp and other paper products held their levels of the fall of 1939 and, when Germany

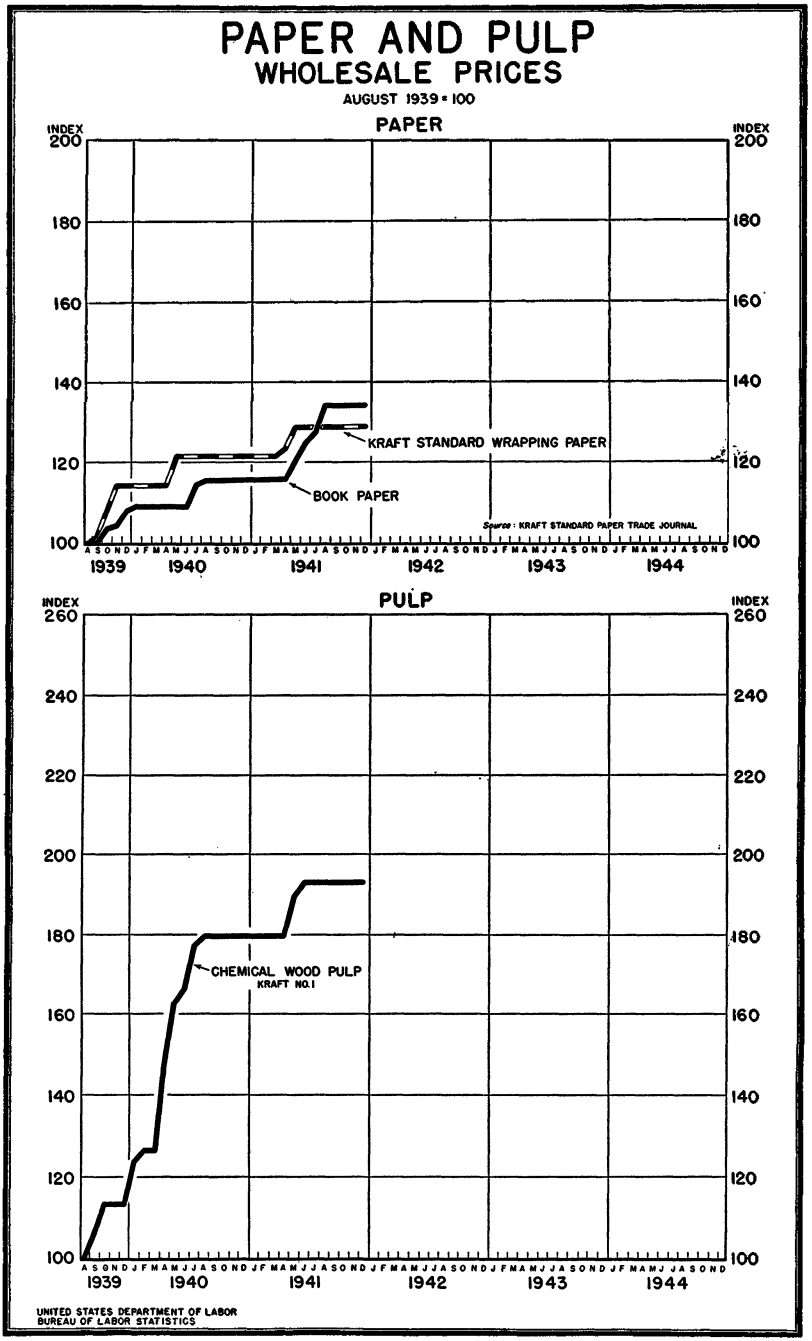
[4] Census of Manufactures, Paper and Allied Products, 1939, Bureau of the Census, U. S. Department of Commerce, Washington, 1941.

In a statement of considerations written in support of a maximum price schedule issued in April 1942, the Office of Price Administration described the wood-pulp industry as follows (OPA release No. PM 2936, Apr. 16, 1942):

"The primary wood-pulp and paper industry in the United States consists of more than 800 mills. Of these, 250 produce wood pulp; of the 250, 75 produce more than their own normal needs and sell their excess production, and 21 produce for sale only. The largest users of wood pulp are the so-called integrated mills (making the pulp and manufacturing it into paper). Converting mills, which do not produce pulp, have depended upon domestic and, to a large extent, imported wood pulp for their operations."

[5] The waste-using grades of paperboard are made up of about 85 percent waste paper and 15 percent prime pulp, although the proportion is varied for different grades. In some cases paperboard is made up of as much as 95 percent waste paper and 5 percent prime pulp, usually strong sulfite. (Report No. 20, Consumers' Project, U. S. Department of Labor, July 1, 1936.)

[6] Only about a fourth of United States requirements for newsprint is domestically produced, the rest coming largely from Canada where considerable excess productive capacity has long characterized this industry. Even in 1941, production was at less than 80 percent of total capacity. Although the price of the raw material for newsprint—mechanical wood pulp—fluctuates frequently, relatively little is sold, most being consumed by integrated companies.



invaded Norway in April 1940, again rose vigorously. Heavy buying was general, and in addition to American consumers, "English, French, and South American countries were * * * offering prices above the going domestic market." [7] By July, chemical-pulp prices were 77 percent above their August 1939 level, and prices of paper products were from 14 to 31 percent higher. Government officials in charge of price regulation hastily called a meeting of industry leaders in Washington and received assurances that no further "unjustifiable price increases would be made." [8]

As the result of this agreement, prices generally remained unchanged until the spring of 1941. Meanwhile, increased domestic pulp production, with greater shipments from Canada, helped to compensate for the loss of Scandinavian imports. Production in 1940 rose by 1,858,000 tons, or 27 percent, over 1939; during the same period, total imports declined 801,864 tons, or 40 percent. Despite greater consumption, stocks remained at a high level until early 1941.

In 1940, consumption of all types of paper pulp was 23 percent above 1939; in 1941 there was a further increase of 16 percent. Civilian demand continued to grow and Government purchases alone were estimated at about 20 percent of the Nation's productive capacity.[9] Pulp stocks declined from 206,000 tons in January 1941 to 97,000 in September. Paperboard production rose from an average of 73 percent of capacity in 1940 to 99 percent in October 1941, and stocks of waste paper dropped sharply. Although the Office of Price Administration and Civilian Supply continued its attempts to maintain stability through informal agreements with producers, prices of most types of paper and pulp products rose on a broad scale. Exceptions were soda bleached and mechanical wood pulp, which are of relatively small importance on the basis of sales volume in the United States.[10] Concerning the shortage of chemical pulp, the Paper Mill News (November 22, 1941) commented: "Many mills have eaten into their last reserves and are already desperately seeking substitutes."

By June waste-paper prices had advanced to more than 85 percent above their pre-war levels. Boxboard prices had also increased from 31 to 57 percent above the levels of August 1939. Although leading representatives of the waste-paper industry agreed with the OPACS to maintain stable prices in the summer of 1941, further increases continued.[11] A similar agreement with producers of paperboard, reached in June, was set aside in August because of constantly higher prices for waste paper. By September, waste-paper prices were 115 percent above those prevailing in August 1939. Increases for boxboard ranged from 41 to 84 percent. Effective October 1, formal

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[7] Paper Mill News, March 9, 1940.

[8] Office of Price Administration, First Quarterly Report, for the Period Ended April 30, 1942, Washington, p. 172.

[9] Journal of Commerce, September 22, 1941.

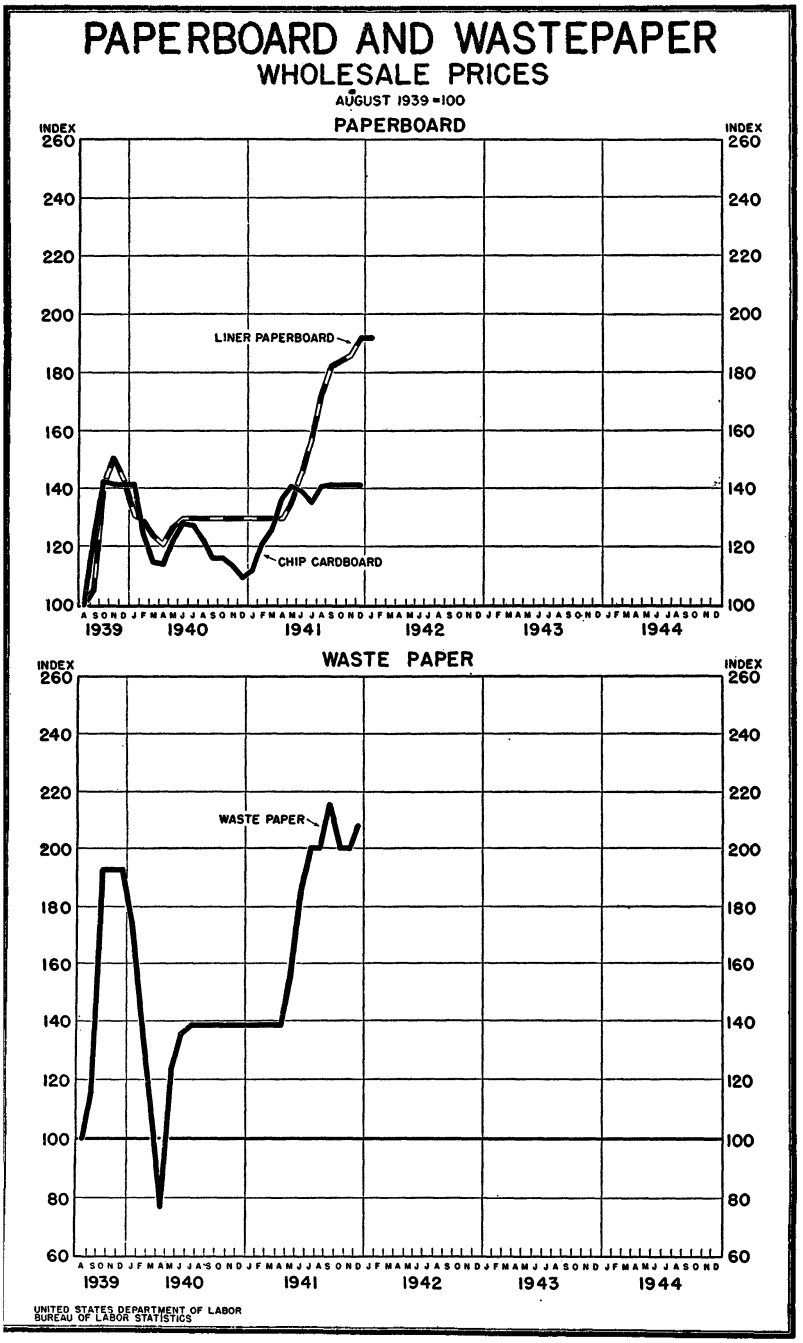
[10] Mechanical wood pulp is used primarily for newsprint and is consumed mainly in Canada.

[11] The ineffectiveness of these voluntary agreements was acknowledged by the Office of Price Administration and the various methods used by dealers to circumvent their agreements were described as follows:

"In the face of these agreements, there developed in certain trade quarters methods designed to circumvent the maximum prices. Among these methods were the imposition and payment of 'special service charges' which were not in effect on June 16; adoption of new names for ordinary grades of waste paper, thus creating new price classes; or even the buying and selling of one grade or type of waste paper under a billing providing for an entirely different and more expensive type.

"By these means and others certain waste-paper dealers have consistently attempted to force consumers to pay more than the prices determined by OPACS and the waste-paper dealers themselves to be fair and reasonable.

"Where resistance has been encountered from consumers seeking to conform to their agreements with OPACS, supplies in some cases have been diverted or withheld, thus creating an unbalanced inventory situation that has forced some plants to close for want of waste paper." (Office for Emergency Management, Release No. OPACS—PM 1021, Aug. 27, 1941.)



maximum prices for waste paper and paperboard (in areas east of the Rocky Mountains) were established by the Price Administrator at levels roughly equivalent to or slightly lower than those then prevailing.[12]

The 1941 advance for most other types of paper and pulp products began in May and ended in September; as compared to August 1939, increases amounted to more than 90 percent for chemical pulp, 29 percent for kraft wrapping paper, 34 percent for book paper, 30 percent for tissue paper, and 11 percent for manila wrapping paper.

In September several leading pulp producers announced further increases in contract prices for the fourth quarter of the year, but these advances were withdrawn at the request of the Price Administrator.

TABLE 71.—*PAPER AND PULP: Wholesale Prices, by Kind, August 1939–December 1941*

[Source: U. S. Bureau of Labor Statistics]

Year and month	Indexes (August 1939=100) of—												
	All paper and pulp	Wood pulp				Boxboard (eastern territory)			Wrapping paper		Book paper	Tissue paper, white No. 1	Waste paper, No. 1 mixed, clean, dry
		Chemical		Mechanical, No. 1	Soda bleached	Chip, No. 90 or heavier	Liner, 85-lb. test	0.009 corrugating paper	Manila, No. 1 jute	Kraft, standard wrapping [1]			
		Kraft No. 1	Sulphite, easy-bleaching										
1939													
Aug.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sept.	102.3	106.4	109.2	105.4	100.0	120.8	105.1	101.9	100.0	101.7	100.0	102.4	115.4
Oct.	107.9	113.3	116.9	142.4	100.0	142.0	139.4	119.2	101.1	103.7	103.7	106.0	192.3
Nov.	110.0	113.3	116.9	152.4	103.5	141.0	150.0	136.5	105.7	114.3	104.6	106.0	192.3
Dec.	111.3	113.3	128.7	154.8	113.7	141.0	142.4	136.5	105.7	114.3	108.1	106.0	192.3
1940													
Jan.	112.3	123.9	145.1	154.8	113.7	141.0	130.3	132.7	105.7	114.3	109.2	108.4	173.1
Feb.	111.9	126.6	146.2	154.8	113.7	123.4	128.3	130.8	105.7	114.3	109.2	112.0	138.5
Mar.	111.3	126.6	146.2	154.8	113.7	114.2	123.2	130.8	105.7	114.3	109.2	112.0	107.7
Apr.	111.9	146.8	151.8	155.2	113.7	113.8	120.2	130.8	105.7	114.3	109.2	112.0	76.9
May	113.4	162.8	163.1	157.1	113.7	121.7	126.3	130.8	105.7	121.4	109.2	112.0	123.1
June	114.6	166.5	171.3	161.9	119.6	127.9	129.3	130.8	105.7	121.4	109.2	114.5	135.4
July	116.9	177.1	177.4	166.7	121.6	126.9	129.3	130.8	105.7	121.4	114.3	118.1	138.5
Aug.	116.9	179.8	177.4	166.7	127.5	121.7	129.3	130.8	105.7	121.4	115.6	118.1	138.5
Sept.	116.5	179.8	177.4	166.7	129.4	115.9	129.3	130.8	105.7	121.4	115.6	118.1	138.5
Oct.	116.5	179.8	177.4	166.7	129.4	115.9	129.3	130.8	105.7	121.4	115.6	118.1	138.5
Nov.	116.4	179.8	177.4	166.7	129.4	113.2	129.3	130.8	105.7	121.4	115.6	118.1	138.5
Dec.	116.4	179.8	177.4	166.7	129.4	109.1	129.3	130.8	105.7	121.4	115.6	118.1	138.5
1941													
Jan.	116.4	179.8	177.4	166.7	129.4	111.6	129.3	130.8	105.7	121.4	115.6	118.1	138.5
Feb.	116.6	179.8	177.4	157.1	129.4	120.4	129.3	130.8	105.7	121.4	115.6	118.1	138.5
Mar.	116.9	179.8	177.4	157.1	129.4	125.3	129.3	130.8	105.7	121.4	115.6	118.1	138.5
Apr.	118.1	179.8	177.4	152.4	129.4	136.3	134.3	130.8	108.0	123.1	115.6	118.1	138.5
May	120.9	189.4	177.4	152.4	129.4	140.3	145.5	130.8	111.4	128.6	120.2	118.1	153.8
June	122.5	193.1	177.4	152.4	129.4	138.7	156.6	130.8	111.4	128.6	124.8	118.1	184.6
July	123.5	193.1	177.4	152.4	129.4	135.0	172.7	142.3	111.4	128.6	127.5	118.1	200.0
Aug.	125.9	193.1	181.0	152.4	129.4	140.3	181.8	142.3	111.4	128.6	133.9	124.1	200.0
Sept.	127.1	193.1	190.3	152.4	129.4	141.0	183.8	142.3	111.4	128.6	133.9	130.1	215.4
Oct.	127.4	193.1	190.3	152.4	129.4	141.0	185.9	142.3	111.4	128.6	133.9	130.1	200.0
Nov.	127.8	193.1	190.3	152.4	129.4	141.0	191.9	157.7	111.4	128.6	133.9	130.1	200.0
Dec.	128.1	193.1	190.3	152.4	129.4	141.0	191.9	157.7	111.4	128.6	133.9	133.7	207.7

[1] Prices from Paper Trade Journal.

[12] The effective date for paperboard prices was later postponed until November 1.

He declared that "there is ample evidence already at hand to show that the prices at which wood pulp has been sold over the past 12 months have been more than adequate to most producers. To allow still higher prices when every effort must be made to resist inflation is out of the question."[13]

Except for some further increases for certain types of boxboard and continued fluctuations for waste paper, resulting in part from revisions in OPA ceiling schedules, prices remained unchanged through the rest of the year.

TABLE 72.—*PAPER AND PULP: Production, Consumption, Imports, and Stocks, August 1939–December 1941*

[Source: U. S. Department of Commerce, Survey of Current Business]

Year and month	Wood pulp [1]			Paper production		Waste-paper stocks at mill, end of month
	Production	Consumption and shipments	Imports	Paperboard	All other except newsprint	
	Thousands of short tons					
1939						
August	566	572	151	516	414	246
September	589	615	161	523	438	214
October	683	684	216	590	492	219
November	683	680	272	569	488	216
December	691	677	235	512	467	247
1940						
January	737	691	262	522	463	237
February	667	645	159	478	411	241
March	700	664	74	487	406	242
April	726	700	110	499	431	226
May	791	753	81	561	481	236
June	751	733	93	530	453	240
July	727	729	86	526	448	252
August	759	735	84	548	442	245
September	696	674	66	492	385	246
October	780	744	68	583	445	250
November	769	723	71	554	422	260
December	751	719	71	513	419	270
1941						
January	805	770	72	574	461	264
February	731	721	70	547	427	261
March	823	812	85	619	478	253
April	828	818	85	628	491	262
May	865	851	95	676	529	270
June	821	814	105	635	501	265
July	798	810	91	659	504	272
August	844	844	110	702	528	237
September	817	805	98	687	515	218
October	896	877	[2]	748	567	189
November	883	864	[2]	677	542	167
December	868	848	[2]	691	551	187

[1] Total, all grades (sulfate, sulfite, soda, and ground wood).
[2] Not available for publication.

For the paper and pulp industry as a whole, the Defense Period was a particularly prosperous one. The rise in raw-material costs for pulp manufacture was relatively moderate: while prices of chemical pulp rose $35 a ton, the cost of wood required to produce a ton of pulp rose $1.25 in the case of hemlock and $5.50 in the case of Southern pine. Unit labor costs for pulp manufacture declined slightly from 1939 to 1941. In the case of paper manufacture, labor costs rose 11

[13] Office for Emergency Management Release, No. OPA—PM 1327, October 8, 1941.

percent.[14] Over-all profits (before taxes) for the paper and pulp industry rose 300 percent between 1939 and 1941; the increase after payment of taxes amounted to 135 percent.[15]

Crude Rubber

Prices of crude rubber moved sharply upward in September 1939, fluctuated widely throughout the Defense Period and at the time of the attack on Pearl Harbor were 33 percent above their pre-war levels. In general, price changes were attributable in part to the demands of the defense program, in part to factors peculiar to the commodity, and in part to conditions which affected all imported products, such as speculation resulting from political tension and shipping uncertainties caused by the war.

Prior to and during the Defense Period the United States was entirely dependent upon imports for its supply of natural rubber. The quantity available for importation from the Far East (source of about 98 percent of the world's supply) was in turn controlled by the International Rubber Regulation Committee, in accordance with agreements to which the British, Dutch, and French producers were parties.[16] This Committee controlled shipments by setting export quotas for each of the producing countries on a quarterly basis.[17] Ordinarily, the United States accounts for one-half or more of total world consumption.

When the war began in August 1939, "stocks of rubber in the United States were the lowest in years."[18] Prices skyrocketed and plantation ribbed smoked sheets (New York) sold for an average of 23.1 cents per pound in September 1939, a level 38 percent above that of the preceding month. However, this upward movement, which was part of the general speculative price advance of nearly all imported commodities, proved to be short-lived, the price turning downward in October when it became apparent that shipping from the Far East was not to be immediately affected by war conditions. Furthermore, the International Rubber Regulation Committee raised the export quota for the fourth quarter of 1939 from 60 to 75 percent of the basic quota figure,[19] and in December imports reached a peak of 71,448 tons. Thus, between September 1939 and March 1940, rubber prices declined 20 percent to a position 10 percent above the pre-war figure. It was reported in the trade press that as a result of this price decline producers became reluctant to ship, insisting that prevailing prices were too low.[20] However, export quotas for the first quarter of 1940 had been raised to 80 percent, [21] and shipments to the United States rose to a new high in January, declined in February, and rose again in March and April.

[14] Productivity and Unit Labor Cost in Selected Manufacturing Industries, 1919-1940 (pp. 82-84); and Supplement, 1941 (p. 3). U. S. Bureau of Labor Statistics, mimeographed report.
[15] Profits of 1,753 Large Industrial Corporations, 1939-1941. (Office of Price Administration, War Profits Study No. 1.)
[16] The International Rubber Committee was established in 1934.
[17] Government Price-fixing, by Jules Backman. (New York, Pitman Publishing Corporation, 1938, pp. 133-144.)
[18] Although 490,000 tons were imported in 1939 the total reserve at the end of the year was only 90,000 tons. (U. S. Congress, Senate, Additional Report of the Special Committee Investigating the National Defense Program, No. 480, part 7, 1942, p. 4-5.)
[19] New York Times, October 8, 1939.
[20] New York Sun, January 11, 1940.
[21] Journal of Commerce, January 19, 1940.

The downward price movement ended with the extension of the war in Europe during the spring of 1940, rubber prices rising 21 percent between March and June to a position 33 percent above the pre-war level.

Meanwhile, rubber consumption in the United States continued high and the need for accumulating a Government stock pile for purposes of national defense was growing more evident. Accordingly, the Rubber Reserve Company was established to purchase supplies and hold them "intact at least to December 31, 1943," [22] unless a national emergency developed before that time. On June 29, 1940, the day after its establishment, this company signed an agreement with the International Rubber Committee whereby 150,000 tons of rubber were to be bought during the remainder of the year at a price range of 18 to 20 cents a pound, c. i. f. New York.

In July, prices turned downward, dropping by September to a level 14 percent below June 1940 but still 14 percent above the pre-war figure. This decrease was partly seasonal and partly the result of a marked increase in imports from 53,889 tons in June to 78,972 in September.[23] Since the market price of rubber was within the range set by the Rubber Reserve Company, Government purchases of approximately 57,000 tons were made by the end of October.[24] In August, the Rubber Reserve Company agreed to buy up to 181,000 tons of rubber during 1941 and set a price range for these purchases at 17 to 18½ cents a pound, f. o. b. transoceanic ships, Asiatic ports. The maximum limit was slightly above the price prevailing at the time of the agreement.

Political tension in the Far East, resulting from the signing of the Japan-Italy-Germany 10-year military pact, heavy Japanese buying,[25] and extensive civilian and defense demand in the United States caused rubber prices to increase moderately in October and November 1940 and to retain most of the advance in December.[26] This 7-percent increase between September and December brought the price to a level 22 percent above the pre-war figure (see table 73). Since market quotations during the fall of 1940 often fluctuated above the upper purchase price limit of the Rubber Reserve Company, the Government was frequently forced to withdraw from the market.[27] Although heavy private imports resulted in some increase in total stocks in the United States, the Government stock pile at the end of the year was only 40,000 tons.[28]

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[22] U. S. Congress, Senate, Additional Report of the Committee Investigating the National Defense Program, No. 480, part 7, 1942, p. 8.

[23] Rubber export quotas for the third quarter were raised from 80 to 85 percent of basic quotas. (Journal of Commerce, July 8, 1940.)

[24] New York Sun, January 11, 1941.

[25] Journal of Commerce, October 14, 1940.

[26] These developments counteracted the depressing effect of a quota increase to 100 percent for the first quarter of 1941, which was announced in November.

[27] On this point, the Senate Committee Investigating the National Defense Program commented as follows:

"By setting a maximum price limit which the Rubber Reserve Company would pay, we lost a certain amount of rubber to other nations, particularly to Japan, which was able to purchase some rubber for as little as one-sixteenth of a cent above the United States top price. On the other hand, it was considered essential that a top price be fixed in view of the tendency of rubber prices to rise during the period in which we accumulated our stock pile. Before the agreement with the International Rubber Regulation Committee for the development of the stock pile, rubber sold at about 17 cents or more New York spot price. The International Rubber Regulation Committee had no control over price, but controlled only production, and with the increased demand in 1940, the price had, on one occasion, risen to almost 25 cents. The Rubber Reserve Company requested the British and Dutch early in 1941 to limit export licenses to 18½ cents, f. o. b. Asiatic port, which was the maximum under the United States contracts, and thus to avoid competitive purchasing, and the British and Dutch cooperated in this respect." (U. S. Congress, Senate, Additional Report of the Special Committee Investigating the National Defense Program, No. 480, part 7, 1942, p. 11.)

[28] Additional Report of the Special Committee Investigating the National Defense Program, op. cit., p. 7.

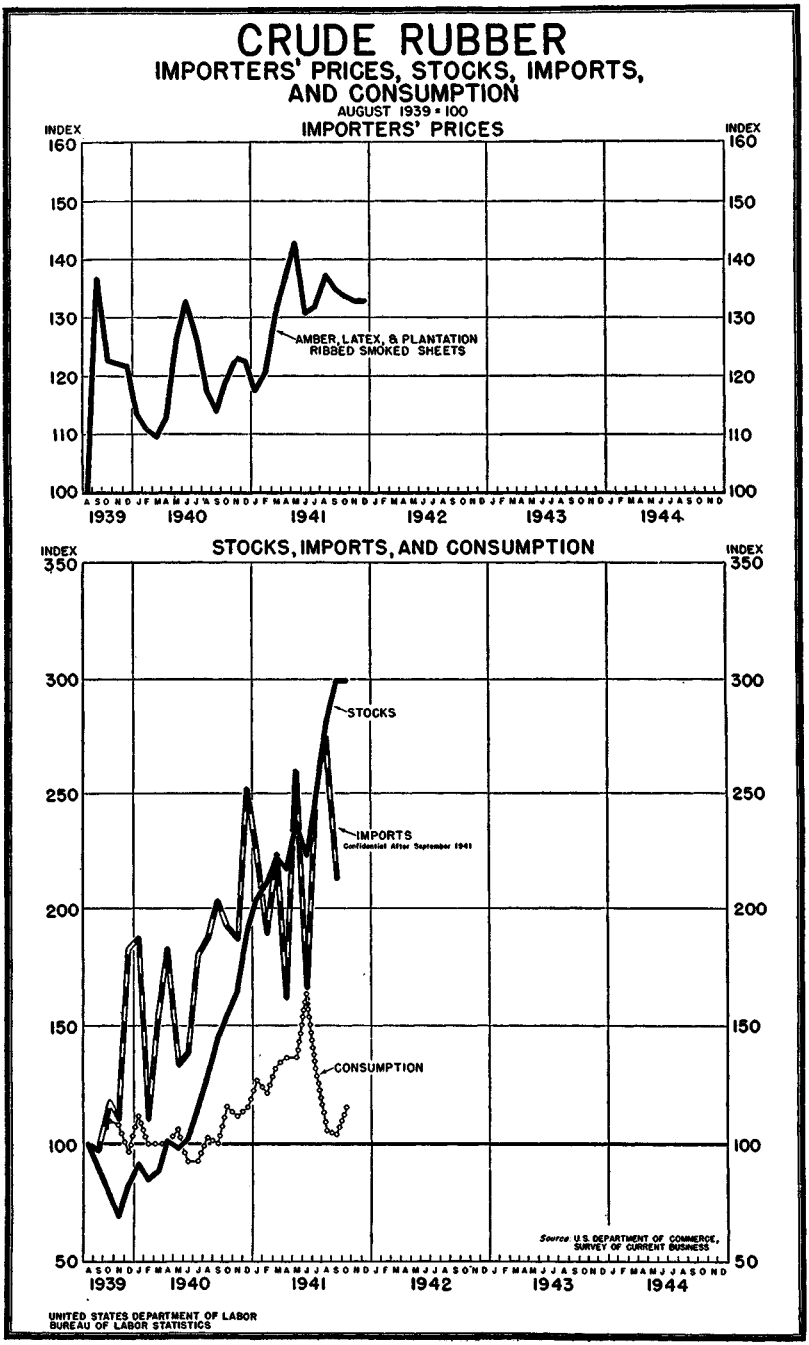

TABLE 73.—*CRUDE RUBBER: Importers' Prices, Stocks, Imports, and Consumption, August 1939–December 1941*

[Sources: Stocks, imports, and consumption—U. S. Department of Commerce, Survey of Current Business; prices—U. S. Bureau of Labor Statistics]

Year and month	Price index (August 1939=100) [1]	Imports	Consumption	Stocks, end of month
		Thousands of long tons		
1939				
August	100.0	39	52	152
September	136.7	38	51	137
October	122.3	46	57	119
November	121.8	43	56	105
December	121.5	71	50	126
1940				
January	113.5	73	58	139
February	110.9	43	52	129
March	109.7	59	52	135
April	112.9	71	52	153
May	126.4	52	55	149
June	132.7	54	48	154
July	126.6	70	48	175
August	117.5	73	53	195
September	114.0	79	52	221
October	119.2	75	60	235
November	122.9	73	58	250
December	122.3	98	60	289
1941				
January	117.5	87	66	309
February	120.9	74	63	320
March	130.7	87	69	338
April	136.4	63	71	330
May	142.7	101	71	359
June	130.7	65	85	339
July	131.8	97	69	376
August	137.0	107	55	426
September	135.0	83	54	455
October	133.5	[2]	60	455
November	132.7	----------	[2]	[2]
December	132.7	----------	----------	----------

[1] Average for 3 grades. Includes amber No. 3; thick latex; and plantation, ribbed, smoked sheets.
[2] Not available for publication.

An increase in export quotas from 85 to 100 percent, announced by the International Rubber Regulation Committee for the first quarter of 1941, had only a minor effect on the market. After a decline in January 1941, prices resumed an upward movement which continued until May, partly as the result of political developments within Japan in February and the announcement of a 25-percent increase in freight rates from the Far East, effective March 1.[29] Meanwhile, with both defense requirements and civilian demand rising, rubber consumption increased steadily, attaining a new high record of 71,374 tons in April 1941.[30] On March 7, 1941, the Rubber Reserve Company agreed to buy during 1941 a maximum of 100,000 tons of crude rubber in addition to the 180,000 tons which it had previously (August 15, 1940) agreed to purchase. Shipping difficulties were experienced, however, and at the end of March stocks of rubber were reported to be piling up in Singapore awaiting shipment to the United States.[31] In order

[29] Journal of Commerce, February 1, 1941.
[30] Rubber consumption for the first 5 months of 1941 surpassed that of the entire year 1932. (Wall Street Journal, June 19, 1941.)
[31] Journal of Commerce, March 27, 1941.

to utilize available ships more fully, arrangements were made in April to unload rubber cargoes from the Dutch East Indies at Pacific rather than Atlantic Coast ports.

By May 1941, plantation rubber sheets were selling for an average of 24.1 cents per pound in New York, a figure 44 percent above August 1939 and the highest after May 1937. As a result of this advance, and the continued political uncertainties in the Far East, two Government orders were issued, one restricting the consumption of rubber for civilian purposes and the other establishing the Rubber Reserve Company as the sole purchaser of crude rubber from the Far East. Purchases of the Rubber Reserve Company were to be made at 18½ cents, f. o. b. transoceanic ships Asiatic ports—the upper limit of the price range which had previously been established. An Office of Production Management order provided for a gradual reduction in civilian consumption through the second half of 1941, up to 25 percent of the amount consumed in the 12 months ending March 31.[32] Priorities were established for defense industries and the rubber thus saved was to be added to the Government stock pile. At the same time, the New York Commodity Exchange committee on rubber suspended all trading in rubber futures, other than the liquidation of existing contracts, and also reduced the daily limit of price fluctuations from 2 cents to ½ cent a pound.[33] The final Government action at this time was an announcement by Price Administrator Henderson that a ceiling schedule would be imposed on crude, reclaimed, and scrap rubber, after consultation with the Rubber Reserve Company.

The Rubber Reserve Company did not announce until August 6 the price at which it would sell rubber to the industry, and in intervening weeks there was very little activity in rubber markets. The price announced was 22½ cents a pound for the basic grade or rubber ex-dock, ex-warehouse, or f. o. b. cars in several leading cities; this quotation was slightly lower than the existing spot price but higher than the prevailing price in the futures market where the majority of purchases were made.[34] Differentials for other grades of rubber were announced in September. These prices—which held for the rest of the Defense Period—were on the average about 33 percent above those prevailing in August 1939.

For the last quarter of the year, export quotas were raised by the International Rubber Regulation Committee from 100 to 120 percent,[35] but by this time the shortage of cargo space placed a limit on shipments which could be only partly overcome. At the time of the attack on Pearl Harbor, the quantity of rubber in private and Government stocks was considerably less than a year's supply at the 1941 rate of consumption.

[32] Release No. PM 594, June 21, 1941. This order was later revised so that "no purchaser shall be required to reduce his consumption in July by more than 20 percent of his consumption in June." The purpose of this revision, according to the OPM announcement, was to prevent excessive "dislocation" in the industry by insuring a gradual rather than a sudden change-over. (Release No. PM 811, July 28, 1941.)

[33] New York Times, June 24, 1941.

[34] Wall Street Journal, August 6 and 7, 1941.

[35] Journal of Commerce, August 20, 1941.