Recent Trends in Employment and Hours in Durable Goods Manufacturing

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The durable goods manufacturing industry group, while accounting for less than 15 percent of all persons employed in the United States, generates one-fifth of the Nation's gross national product. This industry's employment is not only an important source of income but is also an index of economic well-being insofar as employment reflects the demand for hard goods. This article examines recent trends in durable goods employment and hours, with particular emphasis on developments from early 1960 to the present.[1]

The durable goods industries, which make up about 17 percent of total nonfarm payroll employment, can be divided into two main segments--the metals (including the major metal-using industries) and all others. The metals industries--the most volatile and important to the overall economy--include the producers of primary and fabricated metals, machinery, electrical equipment, and transportation equipment. The remaining hard-goods industries include lumber and wood products; furniture; stone, clay, and glass; and three other small industries--ordnance and accessories, instruments and related products, and miscellaneous manufacturing. These six industries, while not as large as the metals group, nonetheless make a significant contribution to the economy in terms of production and employment.

Overall Trends

Since reaching a peak[2] of over 10 million workers in mid-1953, employment in durable goods as a whole has shown a gradual, but irregular, downtrend. Emphasizing the secular decline is the fact that the number of employees in durable goods industries as a proportion of the nonfarm payroll total has decreased from 20 to 17 percent since 1953. In each of the two recessions between the July 1953 and May 1960 peaks, employment dropped by over 1 million, or over 10 percent, and on both occasions did not fully recover to prerecession levels. Employment in May 1960 was nearly 700,000 less than the postwar high in July 1953. In the most recent recession, employment did not decline as much as in the previous two (about 800,000). Another difference in the 1961-62 cycle was that the employment recovery was slow and spread over a much longer time period. This circumstance tended to weaken the recovery for the total economy because of the delayed injection of the displaced workers' earnings. By April 1963, however, employment in durable goods--9.6 million--had about returned to the May 1960 level but was still 100,000 below its peak in February of that year.

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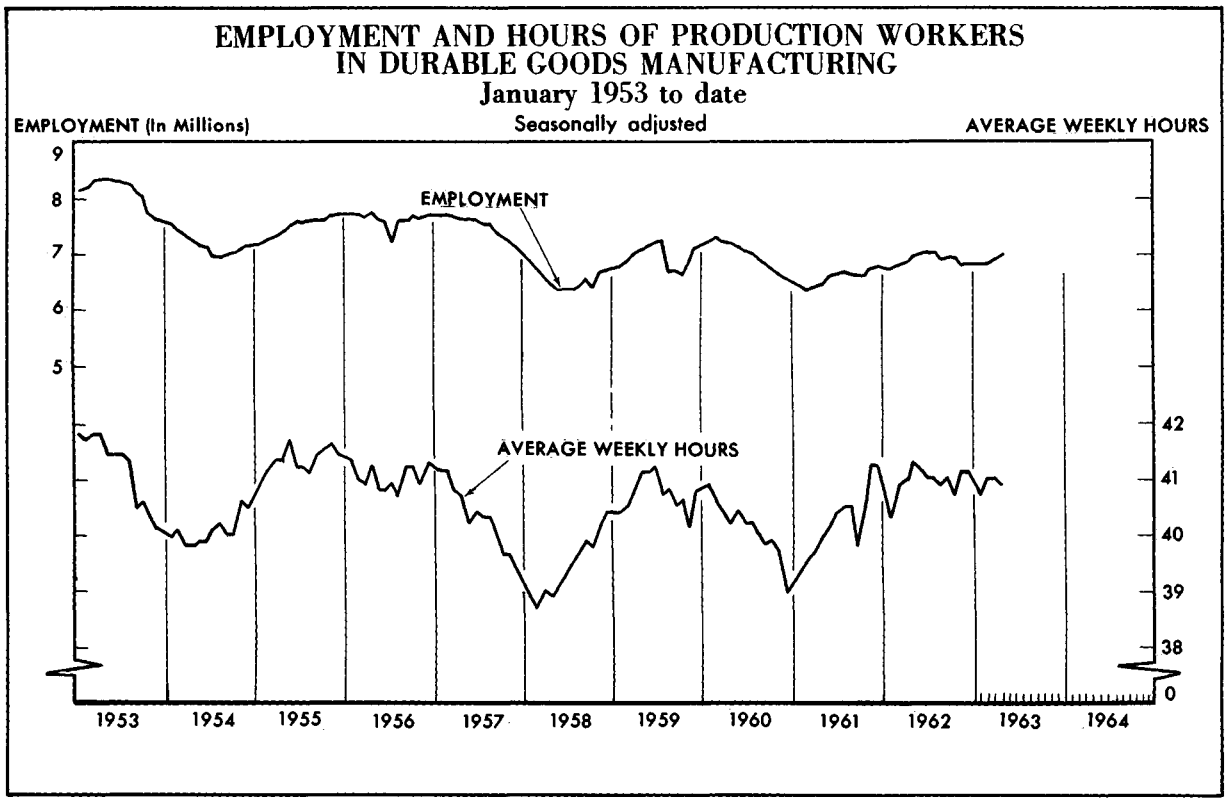
[1] Seasonally adjusted data have been used throughout this article, wherever comparisons between specific months were needed.

[2] "Peaks" and "troughs" refer to months designated by the National Bureau of Economic Research (NBER) as turning points of the business cycle. While individual industry peaks and troughs do not necessarily coincide with those of the NBER, on the whole they approximate the peaks and troughs of the general business cycle.



Not only was the 1961-62 recovery relatively weak, but despite the powerful stimulus of high output and demand for automobiles during the 1962 and 1963 model years and the increased levels of defense spending by the Federal Government, employment in hard-goods industries hit a peak in mid-1962. It then drifted steadily downward throughout the second half of the year, finally turning up again in the first quarter of 1963. February 1963 represented the first reversal of this contraction, only in part the result of the added boost from increased demand for steel. In March and April, employment picked up substantially in nearly all hard-goods industries, bringing the total above the June 1962 level.

The ratio of production workers to total employment in the durable goods industry group has been declining steadily over the past decade. In 1953, 81 percent of the employees were performing production-related work; the proportion is currently 73 percent. The trend has been apparent in every industry and represents a combination of two factors: (1) gains in productivity resulting in the need for fewer production workers, and (2) the mounting emphasis on research and development in manufacturing with its contingent staffing needs. These trends are not expected to diminish in the next few years.

While the average age of the male labor force as a whole has been increasing progressively since 1953, for durable goods the downward employment trend has hastened the process because fewer young persons have entered the industry and layoffs and recalls generally have been based on seniority. Between the first quarters of 1953 and 1963, the median age for all employed males rose by about half a year, while that for males in durable goods increased by almost 2-1/2 years. Over the past decade, the proportion of all males employed in durable goods industries who were 45 years of age or older has increased by 4-1/2 percentage points while the comparable rise for all employed males was only 1-1/2 percentage points. Since early 1960, this aging trend has been slightly reversed in the nonmanufacturing sector with the increasing numbers of young persons entering the labor force, but has accelerated among the durable goods industries.

The workweek in durable goods has for the most part remained relatively stable over the past 10 years, although varying with the swings of the business cycle. During the Korean War period (1951-53), overall weekly hours averaged more than 41 hours and since then have not consistently maintained these peaks, primarily because there have been three recessions in the intervening years. Following the most recent recession, the workweek increased by 2 hours from the December 1960 low and in 1962 remained close to 41 hours. When employment began its slide after mid-1962, hours continued at the same level and have not moved significantly since.

Metals and Metal-Using Industries

This somewhat arbitrary grouping of the "big five" of the durable goods manufacturing industries includes all the metal producers and the major metal-using groups, although almost all of the hard-goods manufacturers use metal to some extent. Together these five industries account for 1 of every 8 persons on nonfarm payrolls and for more than 70 percent of all persons employed in the durable goods sector. Since these metals and metal-using industries make up a large proportion of the total, and because they are strongly influenced by business cycle developments, they dominate movements in the overall durable goods totals. Of the 800,000 decline in durable goods employment during the 1960-61 downturn, nearly 80 percent was in the metals sector.

Primary Metal Industries. Long-run trends in employment and hours in primary metals industries have been dominated by the volatile steel sector, which accounts for slightly better than half of the industry's worker total. In recent years, the steel industry's movements have been keyed not only to the general business cycle, but also to the periodic union contract negotiations.

Table 1. Employment In Durable Goods Manufacturing Industries In Selected Months, Seasonally Adjusted

(In thousands)

Industry	July 1953	May 1960	Feb. 1961	June 1962	Jan. 1963	April 1/ 1963
Total	10,275	9,608	8,797	9,555	9,399	9,591
Ordnance and accessories	249	186	196	213	220	216
Lumber and wood products	766	650	591	611	608	613
Furniture and fixtures	378	391	358	386	380	382
Stone, clay, and glass products	585	608	551	581	562	579
Primary metal industries	1,403	1,277	1,084	1,163	1,121	1,174
Fabricated metal products	1,179	1,146	1,041	1,131	1,104	1,131
Machinery	1,568	1,489	1,394	1,470	1,466	1,476
Electrical equipment	1,365	1,461	1,411	1,554	1,533	1,544
Transportation equipment	2,011	1,642	1,455	1,687	1,662	1,721
Instruments and related products	343	359	341	359	360	365
Miscellaneous manufacturing	428	399	375	400	383	390

1/ Preliminary.

Table 2. Average Weekly Hours of Production Workers In Durable Goods Manufacturing Industries In Selected Months, Seasonally Adjusted

Industry	July 1953	May 1960	Feb. 1961	June 1962	Jan. 1963	April 1/ 1963
Durable Goods.....	41.4	40.4	39.6	41.0	40.7	40.9
Ordnance and accessories.....	41.1	41.0	40.4	41.5	41.2	41.2
Lumber and wood products.....	39.5	39.6	39.2	39.6	40.0	39.5
Furniture and fixtures.....	40.7	40.7	38.9	41.3	40.5	40.7
Stone, clay, and glass products..	40.9	40.7	40.2	41.0	40.4	41.1
Primary metal industries.....	41.5	38.9	38.0	39.6	40.2	41.1
Fabricated metal products.....	42.2	40.8	39.8	41.4	41.2	41.3
Machinery.....	42.4	41.4	40.6	41.8	41.6	41.3
Electrical equipment.....	41.0	39.9	39.9	40.7	40.3	40.2
Transportation equipment.....	41.9	41.1	39.6	41.9	41.6	41.5
Instruments and related products.	41.4	40.8	40.4	41.1	40.6	40.8
Miscellaneous manufacturing.....	40.4	39.7	39.4	39.9	39.4	39.5

1/ Preliminary.

The major factors which have had a definite effecton man-hours in the industry over the longer run have been increased productivity and competition from other materials and from foreign producers. Over the short run, however, employment and hours in primary metals have mainly reflected general cyclical trends, and to a lesser extent, inventory fluctuations. From the first quarter of 1960, when employment was high following the autumn 1959 steel strike and the economy as a whole was close to its prerecession peak, primary metals employment dropped by nearly 250,000 to less than 1.1 million in February 1961. This represented the lowest employment level for the industry for the entire postwar period (aside from strike periods). During the business recovery, the pickup was well below its usual pace, and employment at the postrecession high--April 1962--was short of the prerecession peak by 50,000 workers. Beginning in May 1962, employment dropped sharply and continued this decline through November, even after steel production again turned up. In November, employment almost reached the previous trough level and since then has been moving upward.

The primary metals workweek has tended to be more directly related to production trends in the industry than has employment. Weekly hours, which were cut back 4 hours to 37.1 hours by December 1960, rose quickly when employment surged upward but then receded sharply again the same month (May) that employment began its 1962 slide. Unlike employment, hours of work began to rise in late summer of 1962. Although both employment and hours have been rising in recent months, these gains have not been commensurate with the pickup in production (notably in steel).

Fabricated Metal Products. The fabricated metal products group, including the producers of structural metal products, metal stampings, and cutlery and handtools, has made a gradual and nearly complete recovery from the 1960-61 recession with production and employment now only slightly below the levels at the prerecession peak.

After an abrupt rise from the trough, employment leveled off until the second quarter of 1962 when it again rose to about the prerecession peak. However, after mid-1962, employment tended to drift downwards (with the workweek stabilizing at a high level) until the first month of 1963. As in other metal-working industries, production-worker employment has been rising in 1963, with the pickup gaining momentum in April.

Aside from cyclical movements, employment in fabricated metals has shown only a slight declining trend over the past decade and has averaged about 1.1 million employees over the entire period. Employment in each of the two most recent recovery periods has failed to return to prerecession peaks despite gains in production, with production workers representing the declining component. Through the recession phase of the most recent cycle--May 1960 to February 1961--the number of nonproduction workers remained unchanged while production-worker employment fell by 100,000 and has not yet returned to the May 1960 level. Since 1953, production-worker employment has declined by more than 80,000 while the number of nonproduction workers has risen by half that amount. However, in 1963, production workers still accounted for more than three-fourths of total employment in the industry--a proportion exceeded in the metal-using sector only by the primary metals group.

Machinery. The machinery industry is heavily dependent on business investment in capital goods, as the group includes construction, metal-working and special machinery producers, as well as the office computing and accounting machine manufacturers. Employment in this industry has generally followed the overall trend for durable goods manufacturers. After a sharp decline of nearly 100,000 in the 1960 recession, employment edged up through the rest of 1961 and then rose abruptly during early 1962 to about the prerecession peak level. However, the situation weakened somewhat during the fourth quarter and employment declined to a slightly lower level. There has been a pickup in jobs over the last 2 months, particularly in April.

The relatively slow expansion in employment after the recession trough was in contrast to the swift increase in the length of the average workweek which pushed up to a postrecession high during the second quarter of 1962. The slow rate of employment growth in the machinery industry during the 1961-62 recovery period was also contrary to the industry's performance during earlier upturns. Between February 1961 and the present, employment increased by only 80,000, the smallest recovery for the industry for a comparable period in its entire postwar experience. On the other hand, the decline was also smaller and at a slower pace. Recent surveys of domestic and foreign intentions to purchase machinery and other capital goods indicate some future expansion.

Electrical Equipment. The electrical equipment industry, comprised of such diverse segments as electrical industrial apparatus, household appliances, radio and television receiving equipment, and communications equipment, accounts for more than one-fifth of metals and metal-using durable goods employment and has been a major "growth" sector of the postwar economy. Contrary to trends in other durable goods industries, employment in electrical equipment has risen consistently over the long run and has shown substantial growth over prerecession highs in both of the two recent recoveries. This was due primarily to increased demand in the electronics field.

Employment in electrical equipment declined only mildly into the 1960-61 recession and had fully recovered to the May 1960 level by the first quarter of 1962. By mid-1962, electrical equipment employment had reached an alltime high, and although it declined to a slightly lower level after midyear, production remained on a very high plane. Job growth has been resumed since February 1963.

There is a greater proportion of nonproduction workers--approximately a third of the total employed--in the electrical equipment group than in any other metals industry. These workers play an important role in reducing oscillations in employment over the cycle because of the their relative immunity to layoffs and the tendency for producers in this industry to continue to hire more such personnel even during a downturn. This pattern arises principally because of the importance of research and development work to the industry as a whole, and especially to the communications equipment sector. Between May 1960 and February 1961, while the number of production workers was declining by nearly 70,000, the number of nonproduction workers increased by nearly 20,000. Since the trough, total employment in the industry has increased by about 130,000 with one-fifth of this gain among nonproduction workers. Thus, for the industry as a whole, the number of nonproduction workers gradually increased regardless of the cycle while production-worker employment and hours have varied according to the demand situation.

Transportation Equipment. The transportation equipment industry, consisting of producers of motor vehicles, aircraft, watercraft, and railroad equipment, has made a very strong recovery in both employment and hours worked since the 1960-61 recession. Primarily responsible for the rise have been the motor vehicle and aircraft industries which together account for almost 90 percent of the industry's total employment. The Department of Commerce has estimated that the automotive industry alone has accounted for 15 percent of the rise in real GNP since the first quarter of 1961, as the industry is apparently experiencing two good model years (1962 and 1963) "back-to-back" and is enjoying the highest sales since 1955.

For the transportation equipment industry as a whole, employment has increased by 18 percent since February 1961 to a level 80,000 above the prerecession peak in May 1960. The length of the workweek, while subject to short-run fluctuations, has remained above 40 hours in every month since September 1961 with overtime during this period consistently averaging over 3 hours per week. Despite this generally favorable picture since the recession, the long-term trend over the past decade has been downward, as employment in the first two cycles since 1953 failed to surpass the prerecession high in each recovery period. During the 1961-62 recovery phase, however, total employment did rise (somewhat haltingly) to levels above the prerecession peak, although it was still slightly below highs recorded in mid-1959. However, all of the increase since May 1960, and more than one-fifth of the gain since the recession trough, has been in the nonproduction work force so that production-worker employment has not exceeded the prerecession peak despite very high levels of output. That this situation resulted from increased productivity is clear. Comparing the first quarters of 1960 and 1963, man-hours actually declined despite a substantial gain in the industry's index of production. This picture is generally true for all of the metals sector of which transportation equipment accounts for almost 25 percent of the number employed.

Other Durable Goods Industries

Ordnance and Accessories. Ordnance is the smallest of all the durable goods industries. In 1962, employment averaged only a little over 200,000, which was the industry's highest level since the peak of the Korean War Period (1953) and before that, since World War II.

Unlike other manufacturing industries, employment in ordnance and accessories over the years has not been responsive to movements in the business cycle. In the postwar period, ordnance rose from a very low level (30,000 employees or below) in the late 1940's to a high of 235,000 in 1953. Following cessation of the Korean conflict, employment in the industry declined somewhat but did remain at comparatively high levels. Since May 1960, employment has increased very gradually but continuously and at present is around 220,000.

Another unusual aspect of employment in ordnance is the low production worker ratio prevailing in the industry. Whereas a relatively high proportion is normal in other hard-goods industries--ranging between 60 and 85 percent--the ratio in ordnance is presently around 45 percent. In the early 1950's, the proportion of production workers was about 75 percent; it has declined steadily since that time. Since 1956, practically the entire employment growth in the industry has been among nonproduction workers.

Lumber and Wood Products. Employment in the lumber industry has edged steadily downward since its postwar peak of close to 850,000 in the early 1950's. To a certain extent, movements in the industry have followed a cyclical pattern; however, employment during the recovery phases has not completely returned to prerecession levels. In the most recent business cycle, employment attained a peak late in 1959, at 660,000, and then fell to 600,000 at the 1961 trough. However, employment has not shown much subsequent growth and has steadied slightly above the trough level during the past 15 months.

Although weekly hours in the lumber and wood products industry have varied widely from month to month, the overall level has fluctuated since the fourth quarter of 1958 between 39.5 and 40.0 hours, the highest consistent level in the industry since the early postwar period.

Furniture and Fixtures. Perhaps a classic example of cyclical movement is exemplified by the employment trend of the furniture and fixtures industry over the last 16 years. After World War II, employment in the industry has moved very evenly with the ups and downs of the cycle. The overall trend has been in a slightly upward direction, and employment in each trough has exceeded the previous low by a small margin. The series reached an alltime high (nearly 400,000) in May 1960 and following the February 1961 recession dip returned to approximate this high level. From September 1962 to the present time, employment has been on a plateau at 380,000.

In the months following the 1961 trough, hours rose steadily along with the large 1961-62 furniture production gains and then leveled off in 1962 as production also became stabilized. Because employment remained virtually unchanged over this span, it is evident that the production pickup was made possible to a certain extent through an expanded workweek.

Stone, Clay, and Glass. Stone, clay, and glass production is a durable goods industry which has shown little employment variation over the last 7 years. Between 1956 and the second quarter of 1960, employment remained nearly constant at about 600,000 workers, aside from a dip during the 1958 recession. However, employment dropped by almost 60,000 in the first quarter of 1961 and has failed to advance extensively since then. Stone-clay-glass employment, production, and weekly hours figures have all followed an identical pattern from 1961 to date.

Instruments and Related Products. Instruments and related products is the designation of a small industry group which manufactures scientific and technical instruments and similar equipment. Employment in the industry has increased considerably since the early postwar period and is one of the few durable goods industries to show strength over the past decade.

From the prerecession peak of 360,000 workers, employment fell only 20,000 by February 1961 and had fully recovered by mid-1962. Since then, the employment level has shown little change. The workweek in the instruments field has exhibited a distinctly similar trend except that the recovery from the trough was much swifter.

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Miscellaneous Manufacturing. Miscellaneous durable goods manufacturing industries have sometimes been referred to as "luxury manufacturing" because the industry group is a catchall, including many of the luxury-type items such as jewelry, toys, sporting goods, notions, etc. For this reason, its employment range may be expected to approximate very closely the swings of the business cycle. Such a pattern has been observed in the postwar period. In the most recent recession, employment, which has been on a long-term slow decline since 1953, mirrored the overall durable goods movement, both in the downward and recovery phases of the cycle.

The workweek in miscellaneous manufacturing has not moved in as wide a path as in the other 10 industries of the hard-goods sector, but a cyclical trend is nonetheless apparent. Moreover, weekly hours in this industry group have consistently moved in the direction of the cyclical trend from 2 to 4 months in advance of the employment change.