BUSINESS REVIEW

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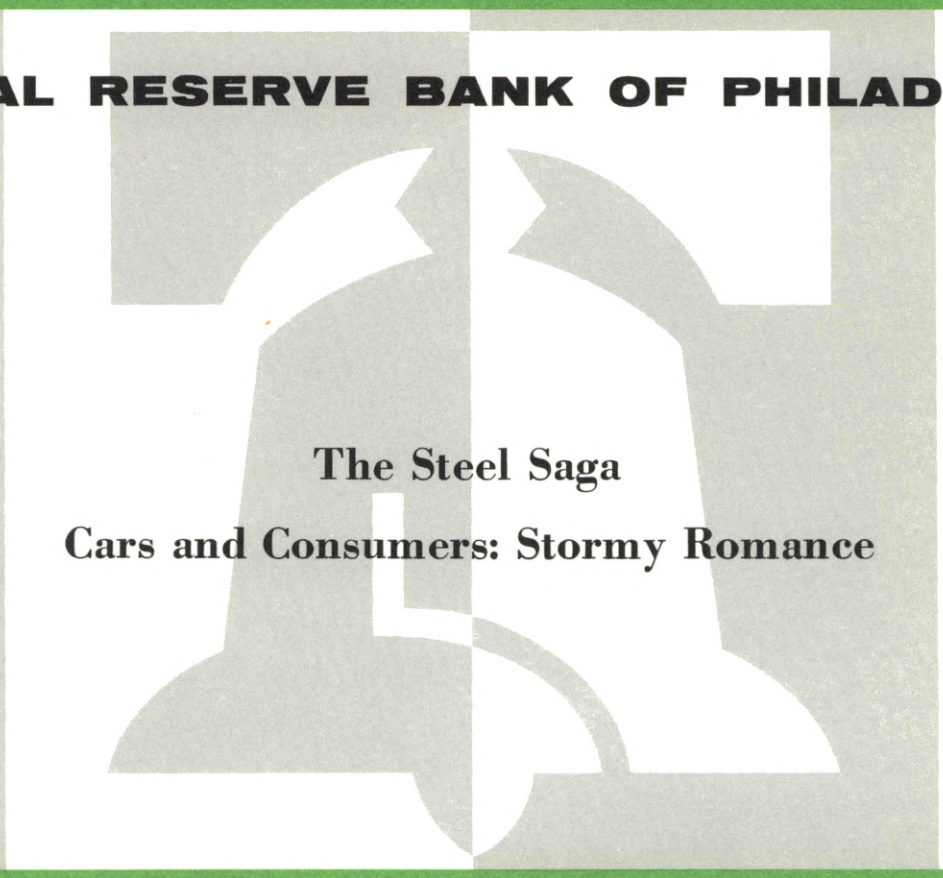

The Steel Saga

Cars and Consumers: Stormy Romance

APRIL 1963

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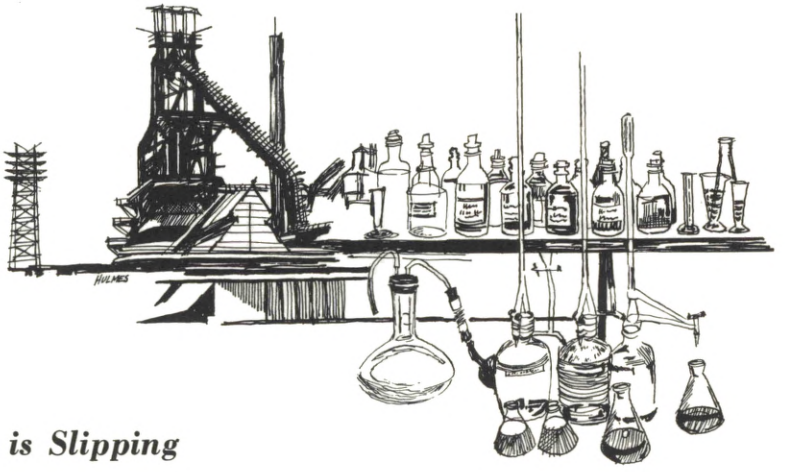
THE STEEL SAGA



Why Pennsylvania is Slipping

Steel is a most capitalistic industry; and Pennsylvania is the country's most steelistic state. So great is the capital required in steel production that the industry must sink a dollar in fixed investment for every two dollars of annual sales. For all manufacturing industries the ratio is one to three and a half. Why steelmaking takes so much capital and why Pennsylvania's leadership is challenged are the themes of this article.

In the little city of Bethlehem is a sprawling steel plant of many furnaces, mills, and shops, forming a four-mile crescent along the Lehigh River hugging the northwest base of South Mountain. The company's shiny new research center sits right on top of the mountain. From that vantage point, you can look down upon mounds of iron ore, banks of coke ovens, blast furnace stacks, open hearth shops, rolling mills, forge shops, finishing mills, storage yards of finished steel products awaiting shipment, two office buildings connected by a tree-lined walkway, and miles and miles of interconnecting railroads that help to make the "works" an integrated steel mill.

The mountain-top view affords perspective and breadth and an inkling of the industry's awesome capital-to-sales ratio. A tour through the shops, with their great variety of massive machinery, gives further meaning to the capitalistic nature of the business.

Inside the steel mill may be seen monolithic blast furnaces—giant structures of great girth that rise skyward with slowly constricting rotundity. Inside a furnace, forever-burning fierce fires smelt the iron out of the ore. Inside the shops, Brobdingnagian buckets big enough to hold 200 tons of liquid steel are heavily lined with firebrick to withstand the white-hot heat of the liquid metal. The soaking pits are livid infernos where chunky stumps of white-hot steel are kept in hot storage awaiting a mauling upon emergence. In another shop are power-driven rolling mills, where an ingot with several tons of reluctance to move is forced back and forth under gigantic pressure-rolls that squeeze the stubby ingot into a slenderized girder of great length. Further on are mammoth hydraulic presses with great gaping jaws that squeeze a

heavy angular ingot into a shape resembling a section of a tree trunk for subsequent machining into a polished propellor shaft or a rotor for a turbine. Such are the many mechanical monsters that carry, cut, hammer, squeeze, or bend great gobs of steel into innumerable useful products.

On tramping through such a constellation of steelworking shops, one comes away with a lasting impression of massive muscles of steel with irresistible force overcoming still other masses of metal defying change of shape.

In sharp contrast to the magnitude and multiplicity of machinery is the paucity of people. It is not to be inferred that most of the machines are fully automatic, but it is amazing how so few workers operate so much machinery. For example, three shifts of six men each run one of the world's largest blast furnaces that turns out 3,000 tons of pig iron a day.

Upon completion of the tour, it is surprising to learn that you have seen a *small* steel mill. At Sparrow's Point, Maryland, Bethlehem Steel has a mill that is more than twice as large. Another huge installation is the Gary plant of the United States Steel Corporation.

STEELMAKING IN PENNSYLVANIA

Pennsylvania makes more steel than any other state, and has for many, many years. Last year, the Commonwealth produced 23 million of the country's 98 million tons of ingots and steel for castings. That was almost one-fourth of the national output, and still comfortably ahead of Ohio. Iron manufacturing, which antedated steelmaking, started here in the early 18th century on the Manatawny, near Philadelphia. Early forges and furnaces flourished in the Schuylkill, Lehigh, Lebanon, and Juniata valleys. Iron was obtained from local ore deposits, abundant limestone quarries supplied the flux, and the heavily forested hillsides supplied charcoal for fuel.

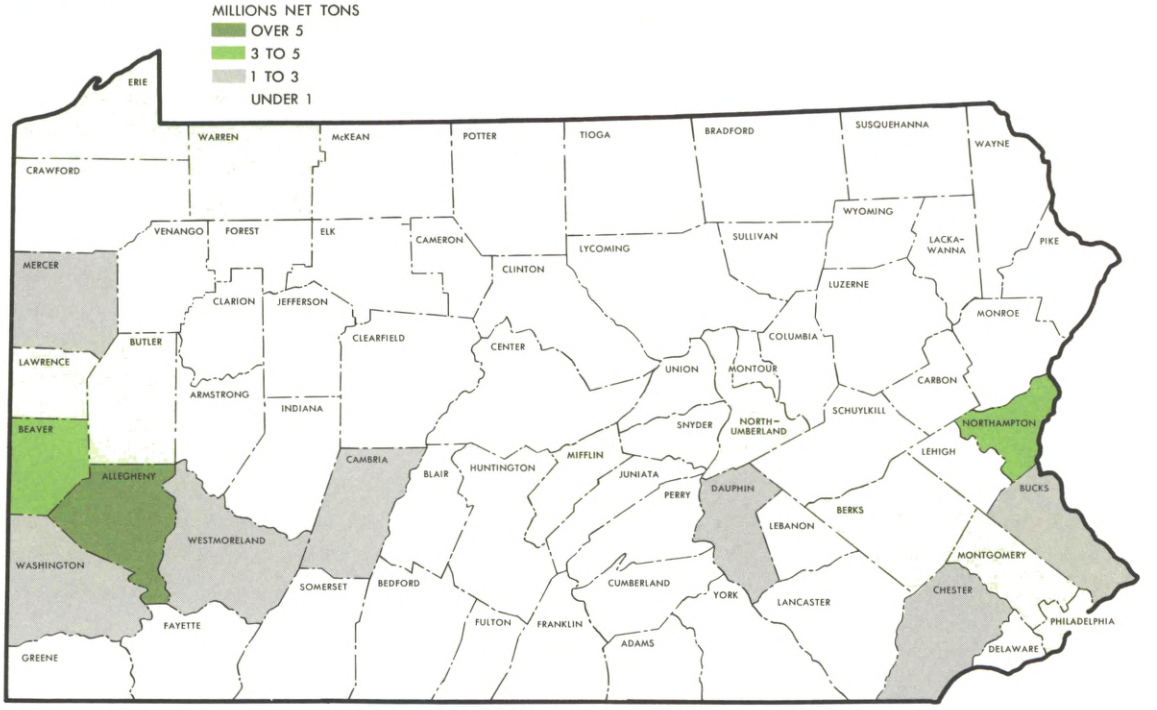
After a short period of firing furnaces with anthracite, the industry shifted to coke made from bituminous coal. The abundance of soft coal underlying western Pennsylvania, along with the development of Bessemer and open hearth steelmaking and discovery of rich iron ore deposits at the western end of Lake Superior gave rise to Pittsburgh as the country's leading steel manufacturing center. The Great Lakes afforded low-cost water transportation for shipping ore to the back door of Pittsburgh, so that only a short overland rail haul was required to complete the link.

Steel mills on the waterways

Next to iron ore and coal, a steel mill needs nothing so much as water—waterways for low-cost assembly of the raw materials; waterways, where feasible, for low-cost shipment of finished products to the markets; water to cool the hot furnaces, to quench the coke and to cool the rollers; water to make steam in the boilers, and water for endless washing and cleansing in the finishing mills. Water consumption of the Jones & Laughlin steel mill at Aliquippa, a short distance down-river from Pittsburgh, averages over 300 million gallons a day—more than 50,000 gallons per ton of steel made there.

Pennsylvania fortunately has a wealth of water and waterways. The affinity of steel for water may not be too apparent in the map of basic steel capacity in Pennsylvania, but every mill is by a riverside or lakeside. All of the steel mills in southeastern Pennsylvania are along the Delaware River and its tributaries. The mills in east-central Pennsylvania are along the Susquehanna and its tributaries. The mills in the northwestern part of the state front on Lake Erie, and mills in the western part of the state

BASIC STEEL CAPACITY—PENNSYLVANIA
January 1, 1960



Source: Directory of Iron and Steel Works of the United States and Canada, 1960.

are all in the Ohio watershed—the Allegheny, Monongahela (and their tributaries), and of course the Ohio River itself which starts at the "golden triangle" and empties into the Mississippi, which flows down into the Gulf of Mexico. The city and metropolitan area of Pittsburgh have more bridges spanning the waterways and more steel mills alongside the waterways than any other area of comparable size throughout the world.

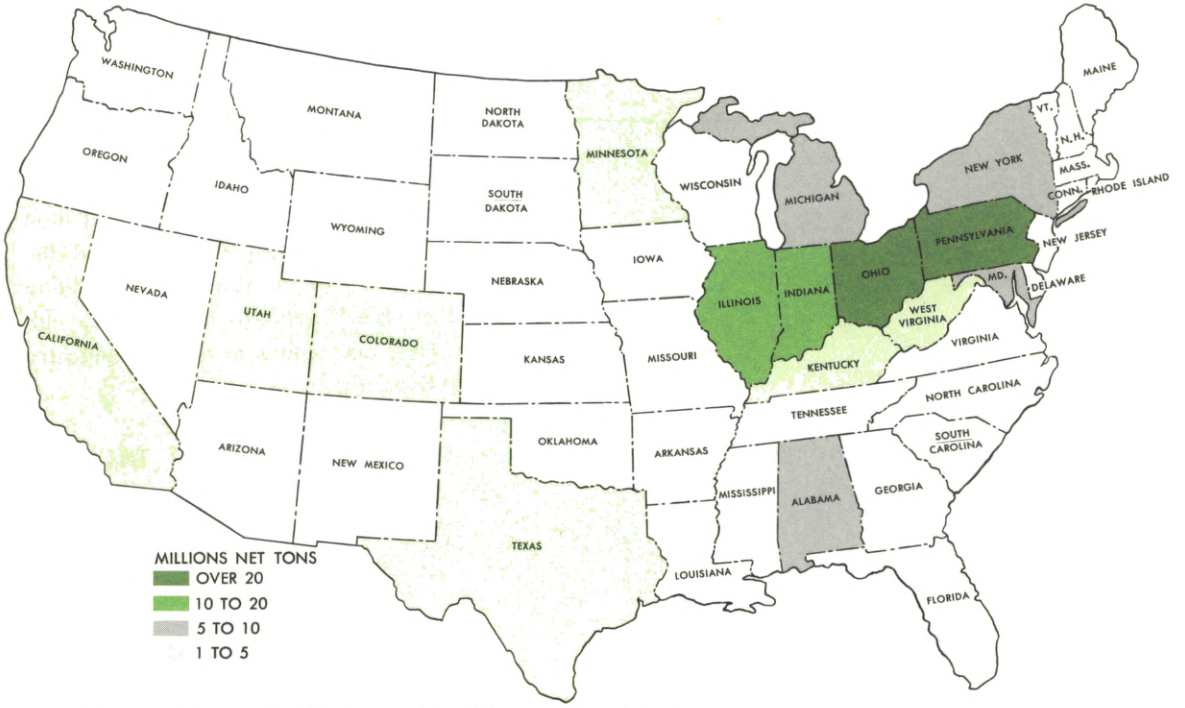
Pennsylvania's 39 million-ton capacity is about one-fourth of the country's steelmaking capacity. Of the 39 million-ton capacity in Pennsylvania, 28 million is in the Ohio basin, 9 million in the Delaware watershed, and over 2 million in the Susquehanna basin.

Is Pennsylvania slipping?

Pennsylvania is not the only state that has coal and water (and iron ore and limestone or access thereto). The accompanying map of the United States shows the 15 leading states with basic steel capacity. Note that all but five of the states are east of the Mississippi. Steel mills that perform all the operations from smelting the raw materials to the making of finished steel products are known as integrated mills, and they have the lion's share of the country's capacity.

Pennsylvania couldn't possibly hope to retain the near-monopoly of steelmaking that it once had. As the center of population moved westward, Midwestern and Far Western markets found it too costly to buy their steel from

BASIC STEEL CAPACITY—UNITED STATES
January 1, 1960



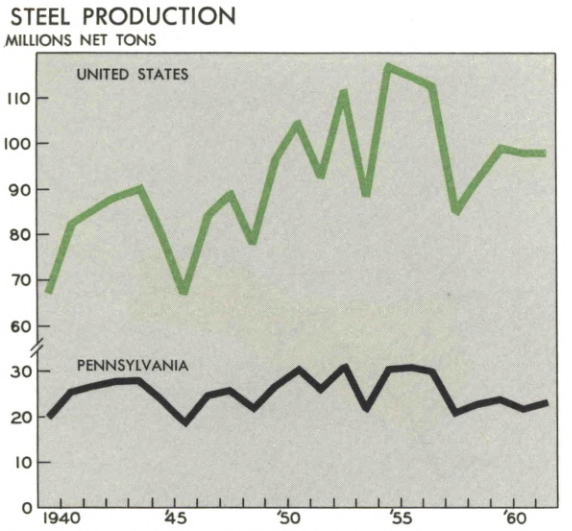
Source: Directory of Iron and Steel Works of the United States and Canada, 1960.

Pennsylvania, with the result that steel mills were established in the states indicated. For a while, Pittsburgh tried to maintain its half nelson on the national market with a pricing system designed to keep the "steel city" competitive. The system, known as "Pittsburgh plus," was abandoned following complaints of Midwestern buyers.

Finished steel-mill products like girders, axles, and coils of sheet steel are all heavy products and cost a lot of money to transport overland, so the sensible thing to do was to build big steel mills near big markets such as Detroit, Cincinnati, Chicago, Birmingham, Philadelphia, and Los Angeles.

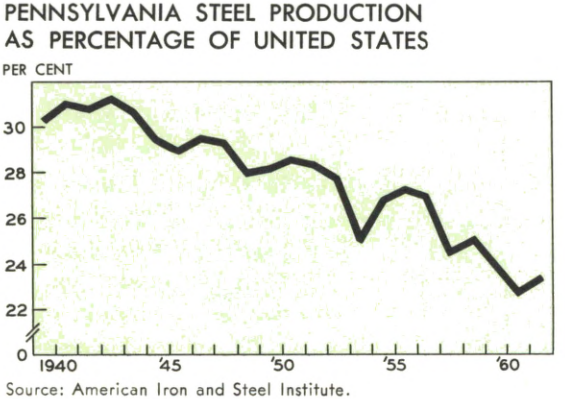
To be sure, it also costs money to assemble the raw materials in some of the new steelmaking centers. In many cases, that cost can be reduced by using economical water transport. In any case, it is good business to be near the market so that buyers of steel products can be given good service promptly.

As a result of the geographical decentralization of basic steel production, Pennsylvania's share of the national market has declined. During the past decade it dropped from 28 to 23 per cent. The decline seemed inevitable and may occasion no surprise; but it is a bit shocking to a Pennsylvanian to learn that steel production in the Commonwealth also declined in absolute tonnage, from 26 million to 23 million during the past decade. That's somewhat harder to explain.



Source: American Iron and Steel Institute.

The steel slippage in Pennsylvania cannot be attributed entirely to companies which operate in the state. Leading concerns like U. S. Steel, Bethlehem, Jones & Laughlin have not moved out of the Commonwealth, although they follow the market by building new mills to the South and the West. Naturally, each company will expand capacity wherever it looks most profitable to do so. Perhaps Pittsburgh was overbuilt in the first place and is now paying the price of progress. Perhaps Pennsylvania, by reason of its longstanding leadership has too much old capacity and finds it difficult to compete with new modern mills elsewhere. Perhaps Pennsylvania is still thought of as a place with the none-too-hospitable "climate" that prevailed some years ago. Or, perhaps Pennsylvania is just too far East and there's not much that can be done about that.



Source: American Iron and Steel Institute.

One reason the steel industry of Pennsylvania is not doing so well as it might is that the entire steel industry of the country is not doing so well either. Steel seems to have lost its old-time vigor. Let's take a look at the steel industry of the United States.

THE STEEL INDUSTRY OF THE UNITED STATES

It might be helpful, at the outset, to get an over-all view of the country's steel industry. Such a view is not easy to obtain because of the abundance, not the scarcity, of steel statistics.

The American Iron and Steel Institute says that the iron and steel industry of the United States consists of over 275 companies, with plants located in 300 communities in 35 states. About 85 of these companies make the raw steel required to produce their finished products; most of the other companies are engaged in further rolling and drawing semi-finished steel obtained from the steel ingot producers, and a few produce only pig iron.

Over-all statistics are really impressive by their immensity. The industry employs over a half-million workers who receive close to $4 billion in wages and salaries each year. Total net investment in property, plant, and equipment runs into billions, and the industry invested over $15 billion in the postwar period for new equipment and new construction. The industry has enough men, machinery, money, and management to turn out more than 150 million tons

of steel ingots and castings a year; but it has fallen just short of 100 million tons annually during the past few years. If we had not already tagged the soft coal industry with the adjective "colossal" in the February *Business Review*, we would now hang that adjective on steel. We're just now fresh out of superlatives.

The steel slow-up

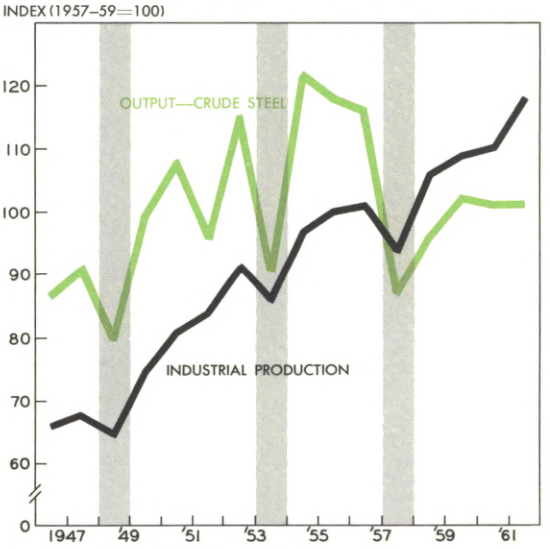
Iron and steel has long been regarded as a basic industry—*the* basic industry, because ours is a machine civilization. That is axiomatic, and the point need not be labored. The automobile industry is the steel industry's best customer, consistently taking about one-fifth of the steel industry's shipments. Other big customers are agriculture, appliances, construction, containers, furniture, mining, machinery, railroads, and shipbuilding. In fact, every industry is an occasional buyer of steel, and so is every household.

The strange thing about steel is that in recent years the output of steel has not kept pace with industrial production generally. This is revealed in the chart, which shows steel lagging behind the Federal Reserve Board's index of industrial production, which measures the physical output of the economy. What happened?

As pointed out in the January, 1963, *Federal Reserve Bulletin:*

> The failure of steel production to keep pace with the substantial advances in activity in major steel-consuming industries reflects several developments. In part because of the sharp rise in steel prices through 1958, other materials—concrete, glass, plastics, and aluminum—have penetrated further into markets for steel. Technological advances, both in the production of steel and in its use, have also reduced tonnage requirements for many specific uses. Successive new models of automobiles were smaller in size and weight until the 1962 model year, when that trend was reversed. Moreover, since 1958, iron and steel imports have exceeded the reduced volume of exports.

PRODUCTIVE ACTIVITY



Note: Recessions—1949, 1954, and 1958.
Sources: Board of Governors Federal Reserve System and American Iron and Steel Institute.

The disappointing rate of growth in steel in recent years may have deeper cause than the surface indications just enumerated. Since 1950, tonnage of steel production throughout the world doubled. During the same period, steel production in the United States showed almost no growth. This is in contrast with growth of 25 per cent for steel production in the United Kingdom, a doubling in Belgium, France, and Canada, 170 per cent increase in Western Germany and in the U.S.S.R., and fantastic increases of 300 per cent in Italy and 460 per cent in Japan.

In large measure, the faster rates of growth in steel production in some of the countries

abroad must be attributed to postwar reconstruction. But there may be other reasons for our steel industry's bottom position on the totem pole of growth.

Could it be that the steel industry of the United States was a bit slow on the postwar technological uptake? During the past decade, the worldwide steel industry has been in technological ferment, and it is surprising how much has happened abroad. In various stages of progress are the German low-shaft blast furnace and the rotary process for refining molten pig iron, the Belgian development in high-speed casting of ingots and the use of optical instruments in rolling mills, the English studies in blast-furnace chemistry, the French oxygen-lime-powder process for removal of phosphorous impurities, the Hungarian use of carbon monoxide in place of some coke in blast-furnace practice, the Mexican process for charging hot sponge iron into electric furnaces, the Russian electronic computer to control blast furnace operations, and new open-hearth design, the Austrian L-D process of oxygen injection, and experiments to make steel directly from iron being conducted both here and abroad.

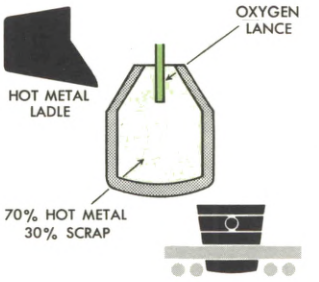
On the domestic scene, the development of taconite (explained later) is probably the greatest achievement. There have also been other innovations; nevertheless, the number of foreign technological advances is impressive.

Unsatisfactory postwar growth in our steel industry is paralleled by unsatisfactory growth of our entire economy. The two are, of course, related but the complicated interrelationship of cause and effect defies disentanglement.

B.O.F.

Though steel is going through a time of trouble, its leaders are not weeping at the wailing wall. On the contrary, they are busily engaged in comprehensive programs of modernization. Anyone browsing through the voluminous literature on steel soon comes upon B.O.F. or L-D. B.O.F. stands for Basic Oxygen Furnace, and L-D means Linz-Donawitz. They are synonomous, at least to the ordinary person. Linz and Donawitz are two cities in Austria where the new basic oxygen furnace originated, and it is one of the most exciting developments in the steel industry.

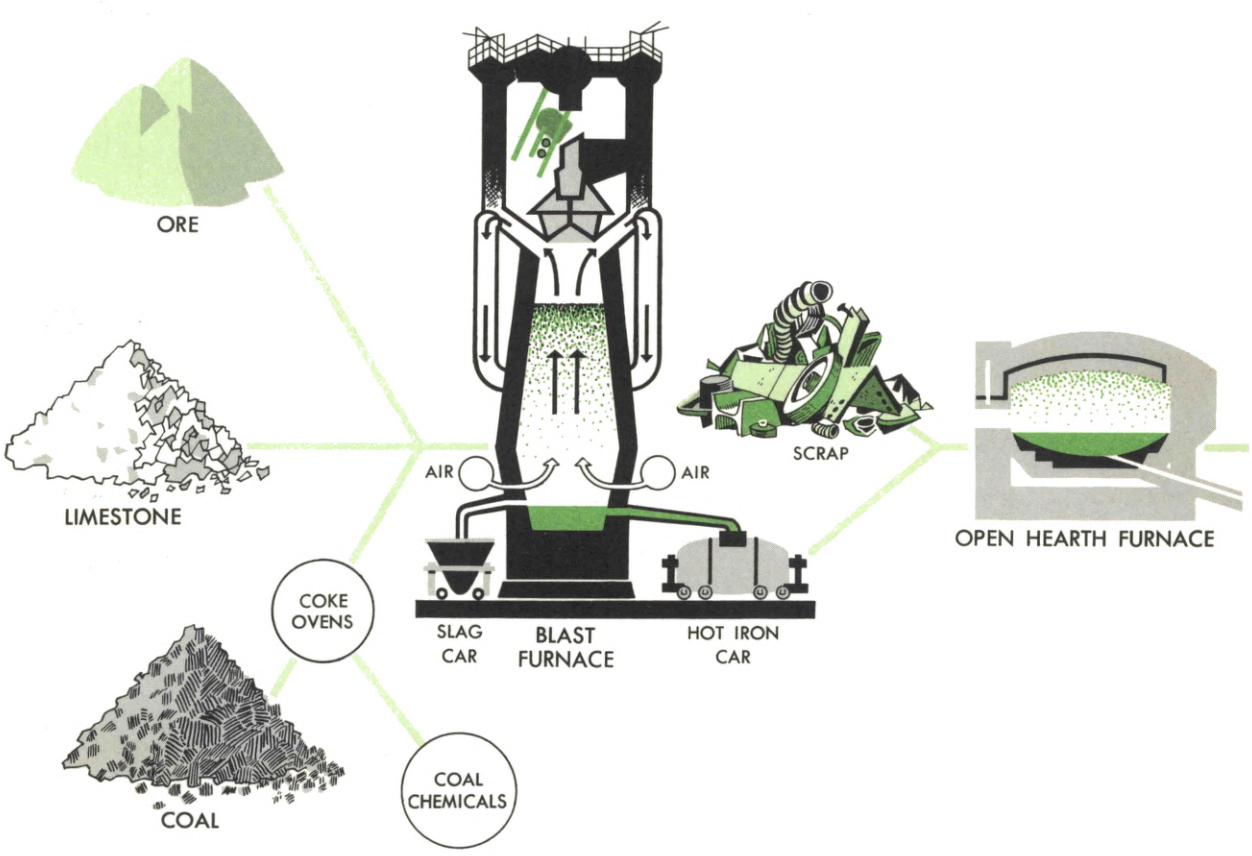
To clue you in, if you have never been through a steel mill, most of our steel is made in open hearth furnaces. An open hearth furnace is a shallow saucerian fireplace walled over with refractory brick. It feeds on liquid pig iron taken directly from the blast furnace and cold scrap steel, and it takes about eight hours of cooking to make a batch of about 200 tons of steel. A small amount of steel is still being made by the now almost obsolete Bessemer process in which air is blown from the bottom of a pear-shaped converter to burn out the impurities of the charge of liquid pig iron. Compared with open hearth, the Bessemer process is much faster, but the resulting quality is inferior.



Courtesy of Jones & Laughlin Steel Corporation.

At Jones & Laughlin's Aliquippa plant, we saw the new basic oxygen process in operation. Into a pear-shaped vessel, roughly resembling a Bessemer converter, is charged about 25 tons of scrap steel and then about 65 tons of molten iron from the blast furnace, plus smaller amounts of lime, and other ingredients to spice the soup. Thereupon the furnace is turned up-

ORE . . . TO IRON . . . TO FINISHED

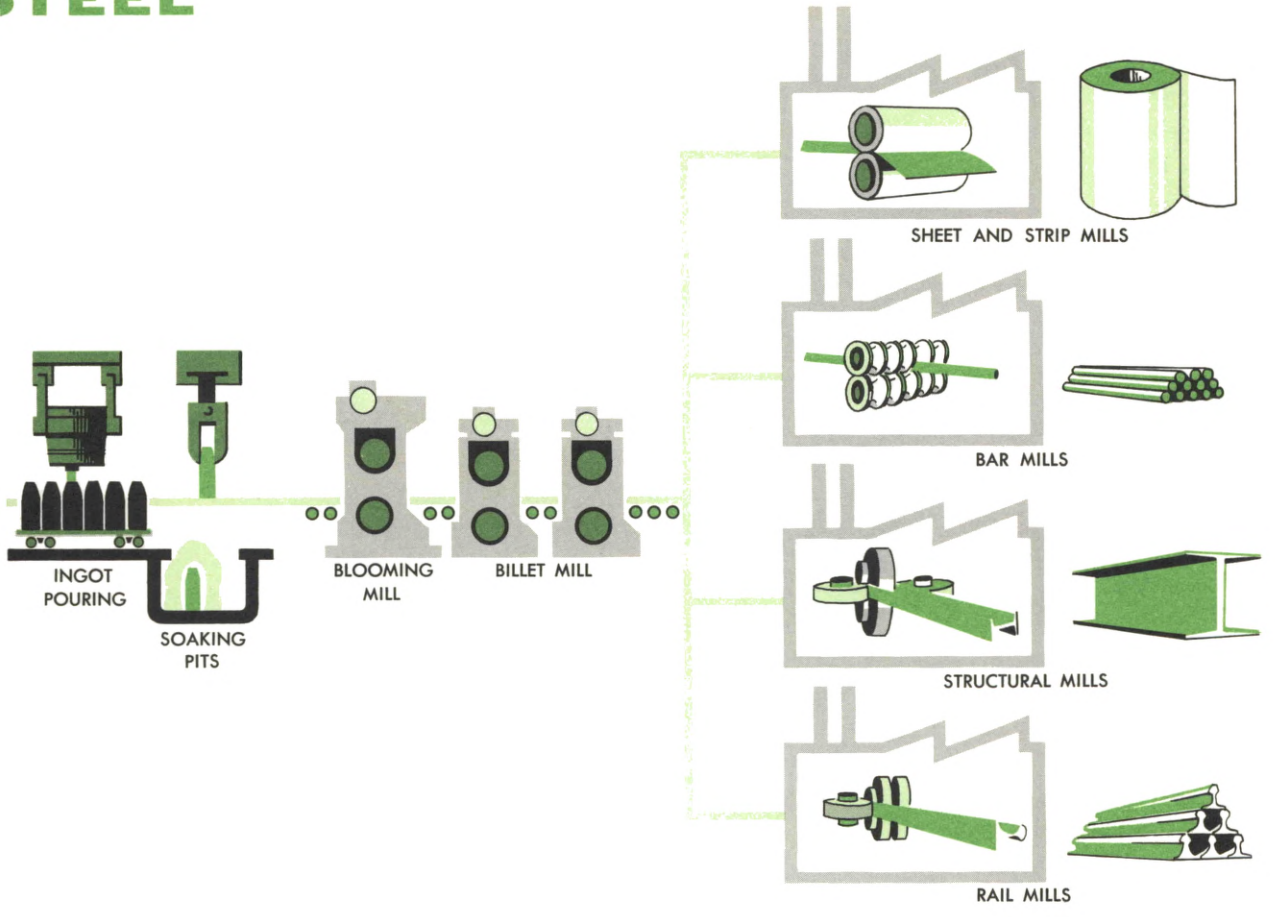


Courtesy of Bethlehem Steel Company.

right and a water-cooled oxygen lance is lowered to a predetermined position above the bath. A turn of the valve causes oxygen to flow at a goodly rate of so many thousand cubic feet a minute from the on-site oxygen manufacturing plant; and you can well imagine what happens when all this oxygen strikes the molten iron. It burns furiously, like a monstrous Roman candle, and you need a smoked glass to watch it, lest you injure your eyes by the brightness of the flame, and you wear a hard hat to shield yourself from the shower of sparks. In about 20 minutes the fireworks subside, the oxygen lance is withdrawn, and the furnace is tilted to a horizontal position to pour the finished steel into a big ladle and from thence into ingot molds.

Obviously, the foregoing sketch is a lay description for the lay reader. What goes on inside the furnace during the blow would no doubt delight the heart of a chemist, but would only confuse us. Suffice it to say that basic oxygen

STEEL



furnaces turn out quality steel faster than open hearth furnaces, cost less to install and to operate.

Over 5 million of the country's 98 million tons of steel produced in 1962 was basic oxygen, and almost every week, readers of the *Wall Street Journal* come upon an announcement of a new basic oxygen furnace installation somewhere in the United States. B.O.F. production has already put Bessemer in the shade, is now challenging electric steel output and may some day overtake open hearth, the reliable old work horse.

The new Industrial Revolution

The generous publicity that the basic oxygen furnace has received may give the general reader the impression that little else of any importance has occurred in the steel industry in recent years. Nothing could be further from the truth. Basic oxygen may well be the steel industry's "glamor girl," but it is only indicative of

revolutionary developments in the steel industry.

Around the turn of the century, whenever a steel company built a new blast furnace it was named after a woman. The "Lucy Furnace" was presumably named after the wife of the chairman of the company's board of directors, or the wife of some other official. Just how the custom started is not known, but it could be because a blast furnace is temperamental like a woman. One day Lucy may produce 2,000 tons of pig iron; the next day, although fed precisely the same diet and treated exactly the same way as the day before, she'll produce only 1,750 tons of pig iron, and Lucy's master wonders why. Well, why is a woman like a woman?

Furnaces are now given numbers instead of feminine names, but they are still feminine and temperamental. Nowhere can this be seen more clearly than in the "diary" of a furnace. For example, in a nearby mill, on a big, columnar blackboard is the full record of the behavior of Blast Furnace No. 2 since she was last blown in about two years ago. There in plain view is a record of her daily diet, her clinical temperature, her blood pressure, the analysis of gas in her stomach, and of course her daily output. Heretofore, blast furnaces have been operated largely by a rule-of-thumb, even though all steel companies have their chemists and metallurgists. In a general way, it has long been known what goes on inside a blast furnace, but now the technicians are beginning to find out precisely and exactly what goes on.

Furnace operators no longer stuff crude iron ore down the gullets of furnaces; they feed them sintered (pre-digested) iron ore, or pelletized ore and, to prevent sour stomach, they administer specific kinds of limestone instead of any old limestone. Furthermore, the furnace is likely to be wired to an electronic data processing device so that the operator knows just when and what to feed the furnace to get the desired results.

The taconite epic is well told in the Minneapolis Federal Reserve Bank's *Business Review*. World War II took a big bite out of the Great Lakes iron ore reserves, so the steel companies turned to taconite—an iron-bearing mineral plentiful in the Minneapolis district but one of the hardest rocks on earth to crack. The rock is too hard and too low in iron content to dump into a blast furnace, hence it must undergo much preparatory crushing and enrichment. It took a lot of money and experimenting to unlock this new source of iron, but high-grade iron ore of taconite origin is now flowing to the blast furnaces in steadily growing tonnage.

Among other developments in various stages of progress are natural gas, fuel oil, and powdered coal fuel injection in blast furnaces, continuous casting, vacuum casting, high blast-furnace top pressures, and direct reduction, which is an attempt to make steel directly from the iron ore without going through the intermediate blast furnace smelting. At every stage in the lengthy sequence of processes, from pretreating the ore to the finishing operations of steel mill products at the end of the line, new technologies are budding and flowering. Quality standards are maintained with the help of digital computer control, logging showcases, and television screens portraying continuous views of the flow of the steel in process to assist detection of irregularities and defects.

The best evidence of the technological revolution taking place in the steel industry is the research centers that are being built. One example is the $35 million research center sitting on top of South Mountain, mentioned at the outset of this article. There, in one laboratory after another may be seen ordinary-appearing

people probing the mysteries of ferrous phenomena with the aid of baroque instruments, bizarre rigs, and a technical library with tomes in many tongues. A steel company's research team includes specialists in aerodynamics, biology, chemistry, electronics, mathematics, mechanics, metallurgy, mineralogy, physics, and thermodynamics.

Blue collars and white collars

More steel is now being made by less people than formerly—and different kinds of people. Between 1950 and 1961, employment in the steel industry declined from 592,000 to 521,000 on the average. Blue-collar people working in the mills declined from 503,000 to 403,000, reflecting the increased mechanization, in part. During the same period, however, white-collar people working in steel offices and laboratories rose from 89,000 to 117,000, reflecting the growing emphasis upon research, managerial control, public relations, government reports, and other needs for paper work. The time may come when it will take a ton of paper to make a ton of steel.

A prediction

The fact is undeniable that the steel industry has been slipping in recent years, but we predict that the industry is not on the way out. The industry is well aware of its difficulties and, as already indicated, is doing something about it. The most hopeful aspect is the new emphasis being placed on research.

Steelmaking is a slow and cumbersome process by its very nature, and it takes several years to build a new mill. Research is even slower, but by and by the research dollars pay off—some of them. Steel is still the cheapest industrial metal, and has a lot of work to do.

The technical revolution in steel has just begun, and where it will lead is not predictable. With new developments like basic oxygen and continuous casting it may be that future steel mills will be smaller than they are today and therefore future mills may be built closer to their markets, especially if the engineers succeed in developing a new process that will bypass the blast furnace operation. If this is just a dream that never comes true, there may be new blast-furnace technique, however, that may yet result in the use of other than conventional fuels, to the joy or despair of the soft coal industry. Or, to be considered are prospective developments in the electric furnace. Electric furnaces are currently making about one-tenth of our steel and, who knows, someone may come up with a greatly improved electric furnace to make virtually instant steel out of iron ore. Suppose that were to happen; think what it might do for the coal industry. Electric furnaces use an enormous amount of electricity and, as indicated in our February *Business Review*, we get most of our kilowatts out of coal.

All dreaming aside, there are already enough developments afoot to warrant solid optimism about the future of steel.

Whither Pennsylvania steel?

Not quite so solid is the optimism about the future of steelmaking in Pennsylvania. Years ago, geography smiled upon Pennsylvania and therewith she became a great steel state. But geography gets rigged by men. They exploit raw materials, build seaways, devise ways of utilizing lower-grade minerals, abandon railroads and, above all, too many have followed Horace Greeley's advice.

Remember Fairless? The joy and gladness that came with construction of the new steel mill on the Delaware in the early postwar period?

Rumors abounded that another company, or two, or three, were also about to follow the leader with new mills in the East and hopefully in Pennsylvania, or at least near enough to expand employment opportunities for eastern Pennsylvania. But no more mills came.

Instead, other Pennsylvania steel companies built and are building new mills along the shores of the Great Lakes to be closer to the expanding markets. Proximity to the market can scarcely be overemphasized, particularly since steel buyers have contracted the habit of hand-to-mouth buying of steel. That reduces risks and ties up less capital for the buyers. Big buyers of steel, like automobile companies, operate on hourly shipping schedules.

Pennsylvania's primacy in iron and steel goes back to the days when low-cost assembly of raw materials, especially coal and iron ore, played the prominent part in determining the location of a steel mill. How far afield a mill must go for its iron ore and coal is still a matter of considerable importance but less so than formerly.

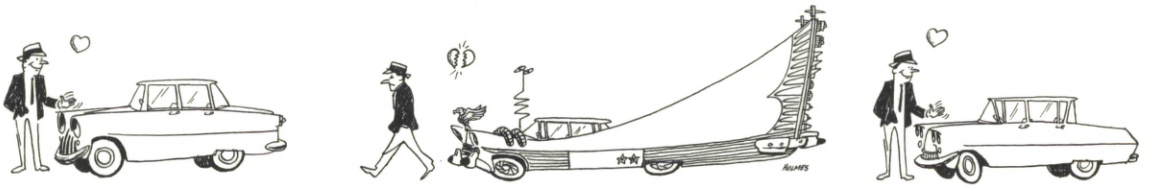
Modern blast furnaces require less and less coal per ton of pig iron produced. Hence coal is a factor of diminishing importance. In fact, a battery of coke ovens is no longer an indispensable adjunct of an integrated steel mill. At least one large integrated steel company is closing down some of its coke-making facilities and concentrating the manufacture of the company's coke requirements at several strategic mill centers—presumably the most efficient installations.

The iron ore situation is also undergoing change. The ore beds at the head of the Great Lakes are still our major source of supply and continue to exert a westward pull with respect to Pennsylvania. Imported ore, now coming in greatest tonnage from Canada and Venezuela, should and does benefit eastern Pennsylvania. Easy access to waterborne imported ore was undoubtedly a factor in the choice of Morrisville for the Fairless mill. The St. Lawrence Seaway, however, also affords waterborne shipment of imported ores right into the big steel manufacturing centers of the Great Lakes.

Pennsylvania will long remain an important steel-producing state because she has an abundance of coal and limestone, has access to iron ore, and is in an excellent position to supply Eastern markets. The advantage of an early start has very largely turned into a disadvantage in the form of too much vintage steelmaking capacity; however, with the technological revolution taking place in the steel industry, Pennsylvania mills may "catch fire" and share in the modernization enough to hold her own.

Andrew Carnegie once issued the dictum: "Pioneering doesn't pay." It certainly paid him when he pioneered in the steel industry of Pennsylvania. Modern pioneering uses entirely different tools, and no doubt the future of steel in Pennsylvania will depend upon how skillfully these tools are used.

CARS AND CONSUMERS: A STORMY ROMANCE



No soap opera queen ever had a more hectic romance than the one between Americans and their automobiles.

Although the "lovers" couldn't get along without each other, they often are fickle and jealous. Frequently they squabble and break up but before long they are back together.

The affair is now in its on-again phase. Americans bought about seven million cars in 1962—a figure approaching the all-time record set in 1955. So far this year sales are even better than in the same months of 1962.

This happy experience has been something of a surprise. Many observers did not expect recent sales to come anywhere near "Fabulous '55."

In the first place, the 1955 record was set under forced-draft conditions. "Blitz sales," with showrooms open steadily for 72 hours or more, were common. Advertising became frantic and sometimes misleading. Factories pressured dealers to accept more cars and dealers were forced to slash prices—at least on less popular models. Consumers were lured by a major relaxation of credit terms and standards. None of these factors is present in today's market to anything like the same extent.

Recently there has been considerable discussion about the decline of the automobile as a status symbol and the saturation level of car ownership. If true, such things can't help but weaken sales potentials.

Modern cars have been improved steadily, to be sure, but recent mechanical changes are often said to be less compelling then the wrap-around windshields, power brakes and power steering, pioneered in 1955. And the 1963 models, as a group, have not benefited from style changes as arresting as the all-new, two-toned appearance of the 1955's.

THE PRESENT APPEAL

After some investigation we found a number of plausible reasons for the reconciliation between cars and consumers. Apparently the auto industry and the typical buyer once again are in harmony on such things as . . .

Style. Most of the 1955 models had a certain smoothness about them. Their lines were trim and true and they were nicely proportioned. Styling was in conservative good taste and obviously caught the public fancy.

In 1956 and 1957, however, Detroit took to spangling its cars with chrome and squeezing them longer and lower. Many drivers were reminded of yesterday's Glamour Girl who vainly tries to recapture lost allure with corset and cosmetics. By 1958 grotesque tail fins became the rule as did over-powered engines that would "pass anything on the road except a gas station." Consumers turned away from their gaudy

sweethearts, and total sales in 1958 were little more than half the 1955 mark.

Foreign cars caught consumers on the rebound. In 1959 almost 700,000 autos were imported, compared with only 60,000 four years earlier. Detroit turned green with jealousy and tried to change its ways. It began to offer smaller cars and more conservative styling. By the time the 1962 models came out much of the sleek simplicity of the 1955's had been recaptured.

Speed. After a sensational spurt compact car sales leveled off last year at about a third of all units sold. Standard cars have begun to flex their horsepower again and even the compacts are growing longer and wider. In its advertising, Detroit is emphasizing speed and power, as it did in the 1950's, instead of economy and handling ease.

Market experts are betting that, deep down inside, most American drivers really covet big, powerful, smooth-riding cars. This doesn't mean that the buyers would go for the ungainly 1958 extremes any more now than they did then but it does imply that most people want something more substantial than the original compacts.

Selection. As we pointed out in earlier *Business Review* articles, the consumer market seems to have split into many separate fragments—each with different tastes, needs and desires. To attract such a demand Detroit now offers 336 different models ranging from compacts to baby buses, from convertibles to limousines.

Scrappage. The cars sold in the lush mid-1950's are showing their age. Engines are becoming asthmatic, chrome is getting pocked and fenders are rusting through. Based on past averages about 25 per cent of all 1955's already have faded away to the junk yard. From now on over five million cars probably will be scrapped each year. In contrast, the figure averaged well below four million in the latter 1950's. High scrappage, of course, provides a firm foundation for new-car demand.

Service. Today's models require considerably less service and maintenance than their predecessors. One manufacturer recommends oil be changed every 6,000 miles, for example. Another guarantees certain parts up to five years. Unquestionably these features stimulate sales, but exactly how much is subject to considerable debate.

Suburbs. Suburbanites may be enthusiastic about 50-mile hikes but they seldom are willing to walk half a mile to the drug store. It is not surprising, therefore, that more than 85 per cent of all suburban households own cars, and

AS THE PIE GROWS BIGGER

Auto product as a percentage of Gross National Product.

20 per cent own two of them. The continued growth of the suburbs has been a definite plus factor in recent auto sales. So has the expanded size of suburban and other families. As the postwar "babies" reach driving age in record numbers, more and more families are discovering one car just isn't enough.

Stocks. Many of the nation's 17 million individual shareholders took a severe licking when the stock market slumped last year. Since then experts think individual investors have stayed pretty much out of the market. (The recent rise is said to be due primarily to institutional purchases.) Probably many people today are buying cars with money that might have gone into stocks a year or two ago.

LESS IMPACT

Another question has been puzzling us. If auto sales have been so good why hasn't the economy as a whole shown more strength? Why hasn't Detroit's success sparked a real boom as it did in 1955?

One answer, we found, is that a seven-million car year today is far less stimulating than it was back in 1955. For one thing the country's total output is more than 40 per cent larger than it was eight years ago. Auto product[1] was 5.5 per cent of Gross National Product in 1955; in 1962 it was under 4 per cent.

Although auto imports are down sharply from their 1959 peak they still accounted for a higher proportion of last year's sales total than they did in 1955. Import sales, of course, do not stimulate our economy nearly so much as domestics do.

Compact cars still cost less to build and buy than standard models. Because of the high percentage of compacts now sold, any given level of unit sales today is relatively less invigorating to the economy. The average retail price of all new domestic cars sold declined about $100 from 1959 to 1962.

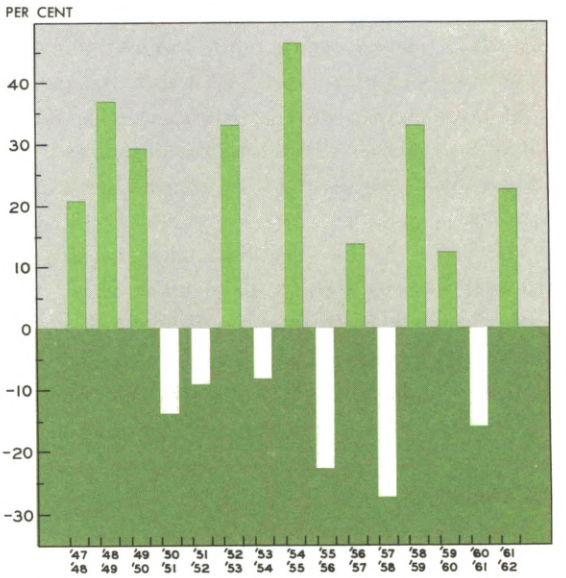
Thus, in order to match its 1955 impact on G.N.P. this year, the auto industry would have to sell over nine million cars.

WILL LOVE LAST?

There is an old saying to the effect that two excellent automobile years seldom come back-to-back. It appears to be rooted in fact. As the next chart shows, year-to-year auto product has increased six times since 1949 and only two of the increases were in a row.

THE DETROIT SEE-SAW

Year-to-year changes in auto product.



Since 1962 qualifies as an excellent year, gimlet-eyed experts are searching for signs of weakness in 1963. Some thought last January's

[1] Auto product is a new concept introduced in the February 1963, *Survey of Current Business.* Auto product represents the total contribution of passenger cars to Gross National Product. It includes autos in personal consumption spending, government purchases, business investment, exports and imports.

plunge in used-car prices, as measured in the consumer price index, was a troublesome omen. The slight gain in February did little to dispel their concern. Increasing weakness in used-car prices would force dealers to trim their trade-in allowances and new-car sales should suffer as a result.

Sales, however, are holding up well as this is written. How long they will continue their present torrid pace is the crucial question. How long before the romance cools again?

In an attempt to find a hint or two about the future we turned to the Department of Commerce's new auto product series which is available quarterly in seasonally adjusted, annual rates. We examined model years from 1948 through 1962.

A computer run showed that a definite correlation existed between the first quarter of a model year (October-December) and the remainder of the model year. In other words, a good start often means a good year.

We also computed the percentage changes in auto product between the first quarter and the average for the rest of the model year. Then we figured the changes between the first quarter and the preceding quarter—the end of the old model year. The two sets of changes moved in the same direction four times out of five.

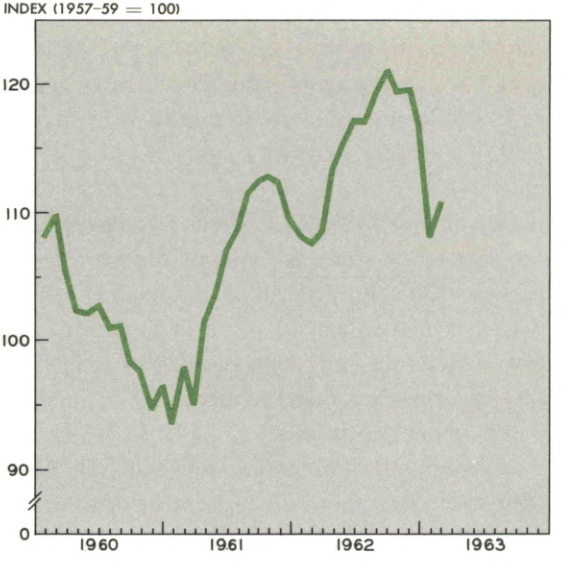
Put another way, when model introductions show improvement from the previous model closeout the remainder of the new model year is likely to be even better than its first quarter.

The 1963 model year opened with an auto product of $23.4 billion—the highest in history and up eight per cent from the preceding quarter. If history repeats itself there is a good chance that the remainder of this model year will be even higher. This would mean that the 1963's will set an all-time unit sales record.

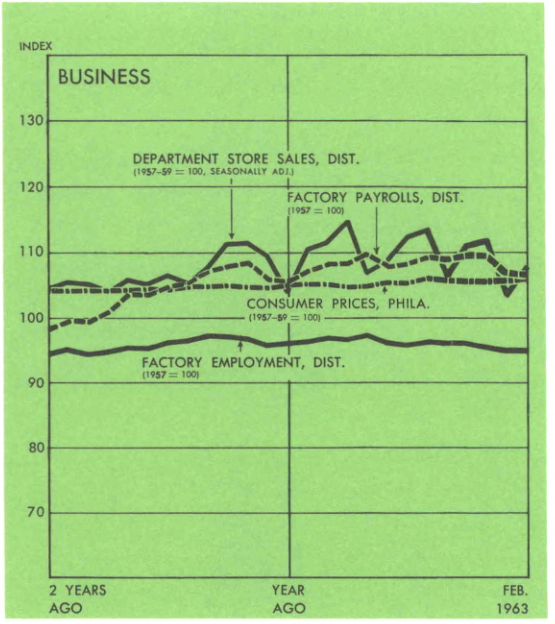
We write this with caution, however. As we said, it is only a hint, not a prediction, and is based strictly on past experience. If the past were a sure-fire indication of the future, we all could afford romances with a different Cadillac for each day of the week and two Continentals on Sunday.

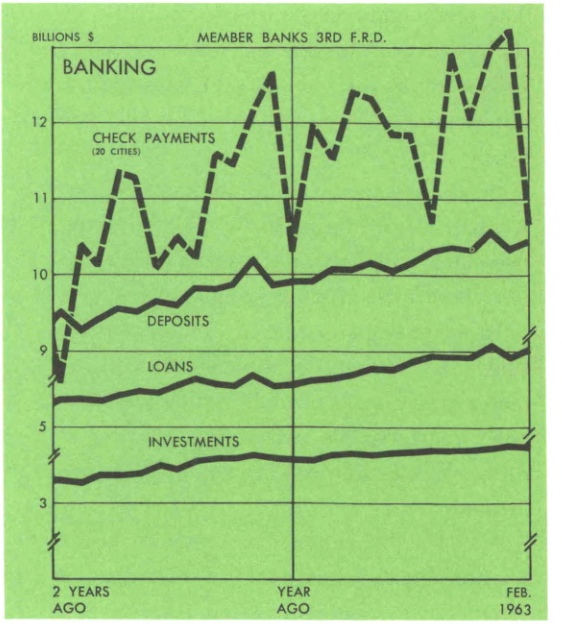
JANUARY: START OF A TREND?

Used car prices in the consumer price index. Not seasonally adjusted.



FOR THE RECORD...





SUMMARY

	Third Federal Reserve District			United States		
	Per cent change			Per cent change		
	Feb. 1963 from		2 mos. 1963 from year ago	Feb. 1963 from		2 mos. 1963 from year ago
	mo. ago	year ago		mo. ago	year ago	
MANUFACTURING						
Production	....	....	....	+ 2	+ 3	+ 4
Electric power consumed	− 1	+ 1	0	....	....	....
Man-hours, total*	0	− 1	− 1	....	....	....
Employment, total	0	− 1	− 1	0	+ 1	+ 1
Wage income*	0	+ 1	+ 1	....	....	....
CONSTRUCTION**	−22	+ 3	+ 3	+ 5	+ 6	+ 5
COAL PRODUCTION	0	−10	−10	+ 5	+ 3	+ 1
TRADE***						
Department store sales	+ 4	+ 3	− 2	+ 1	+ 3	+ 3
Department store stocks	− 3	0	....	....	....	....
BANKING						
(All member banks)						
Deposits	+ 1	+ 5	+ 5	+ 1	+ 7	+ 6
Loans	+ 2	+ 8	+ 8	+ 2	+11	+11
Investments	− 1	+ 5	+ 5	− 1	+ 5	+ 4
U.S. Govt. securities	− 2	0	0	− 1	− 3	− 3
Other	+ 2	+18	+17	+ 2	+25	+25
Check payments	−19†	+ 4†	+ 4†	−16	+15	+12
PRICES						
Wholesale	....	....	....	0	0	0
Consumer	0‡	+ 1‡	+ 1‡	0	+ 1	+ 1

*Production workers only.
**Value of contracts.
***Adjusted for seasonal variation.
†20 Cities
‡Philadelphia

LOCAL CHANGES

	Factory*				Department Store†					
	Employment		Payrolls		Sales		Stocks		Check Payments	
	Per cent change Feb. 1963 from		Per cent change Feb. 1963 from		Per cent change Feb. 1963 from		Per cent change Feb. 1963 from		Per cent change Feb. 1963 from	
	mo. ago	year ago	mo. ago	year ago	mo. ago	year ago	mo. ago	year ago	mo. ago	year ago
Lehigh Valley	+ 1	− 2	+ 2	− 3	....	....	....	....	−11	+ 6
Harrisburg	− 1	+ 2	− 3	+ 3	....	....	....	....	− 5	+16
Lancaster	0	+ 2	− 1	+ 4	+ 6	+ 6	+ 5	+ 3	− 9	+10
Philadelphia	0	− 2	− 1	+ 1	+12	+ 5	− 4	− 3	−18	+ 3
Reading	0	− 2	0	− 1	− 3	+ 5	+ 1	+ 5	−14	+ 3
Scranton	0	− 5	0	− 1	− 7	0	+ 1	+11	−15	+ 5
Trenton	+ 1	+ 2	− 3	+ 5	0	+ 3	− 4	+ 1	−21	+ 7
Wilkes-Barre	+ 1	− 1	− 2	− 2	+ 2	+ 7	− 2	+ 6	−17	+ 4
Wilmington	− 1	+ 4	− 3	+10	− 4	+ 4	− 4	+ 1	−34	+ 4
York	− 1	− 2	− 2	− 3	− 6	0	− 3	+ 5	−16	+ 2

*Not restricted to corporate limits of cities but covers areas of one or more counties.
†Adjusted for seasonal variation.