

BUSINESS REVIEW

FEDERAL RESERVE BANK OF PHILADELPHIA

Economic Growth and Local Action

The Egg and the Chicken

Renaissance of the Rails?

The Fed's Fiftieth Anniversary

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Economic Growth and Local Action

Americans are disposed to direct action. Faced with problems, they demand immediate and vigorous confrontation, attack, subjugation. Faced in particular with lagging growth in their cities or regions, they want to save companies, repel the threatened takeover of a local enterprise, bolster a local management which may have deteriorated.

These are good and necessary actions; they are first aid. The causes of the problems may be deeper, however. Inescapably, there are at work in the world forces which change markets, change technology and products—and hence the profits of local companies.

Human skills in management or promotional drive do affect the economic growth of cities and regions, but so do other influences. One is the kind of industries in which the region specializes. If it specializes in slowly expanding industries, its economy may grow slowly—unless management is unusually aggressive. Or if a region specializes in rapidly expanding industries, it should grow at a good rate—unless management is incompetent.

Beyond these factors of regional specialization and ability, there remains a long list of important locational influences, many of them out of reach of local control. They have to do with access to resources and markets—considerations which are changing in relative importance. Technology, which has created new demands, new industries, and new methods of production, makes access to materials and natural resources less important and access to markets more important. In some industries, physical access means less than the need for highly skilled

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THE EGG AND THE CHICKEN

We still do not know which came first but at long last we have an answer—an economic answer. Today, the egg is first, but not by very much. Last year, eggs contributed \$1,811 million to the country's gross farm income; and broilers, \$1,058 million. What a bountiful bird is the chicken!

To the best of our knowledge, all birds lay eggs; but the chicken is the champ. Other birds lay bigger eggs, or smaller eggs, or rounder eggs, or fancier eggs; but for mass production, the domesticated hen reigns supreme as the avian queen. A healthy hen lays over 200 eggs in a year; the record is in excess of 350 eggs.

Consider the egg

The hen's egg is one of Nature's largest single cells—a tidy container of 55 different chemicals, a storehouse of nutrition, an architectural masterpiece, and the hen's hope of posterity. The interdependence of structure and function of the several parts is a wonder to behold. Said T. W. Higginson, a writer of a former generation: "I think if required on pain of death to name instantly the most perfect thing in the universe, I should risk my fate on a bird's egg."

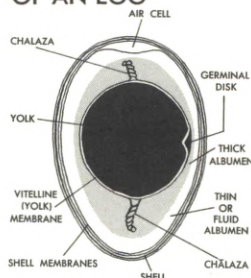
Alexis Romanoff, in his exhaustive treatise of the egg, says that if you remove a sizable piece of shell and shell membrane from the upper side of a fresh egg, you will find an opaque circular white spot, usually visible on the surface of the yolk. That little white spot, called the blastodisc in the unfertilized egg (blastoderm in the fertilized egg) is the tiny

spark of life from which the embryo arises. In case you wonder which is the upper side of an egg—since they do not come marked "this side up"—please read on. The little seed of life is cradled and nourished by the yolk, the most important part of the egg—if indeed any part can be called more important than another.

The yolk is kept near the geometric center by a ropy structure (see illustration) that spirals clockwise toward the blunt end and counterclockwise toward the sharp end of the egg. This ingenious design restores the embryo of an egg, which has been turned, to the uppermost position when the egg comes to rest. Thus the embryo is always in the best position to absorb the bodily heat of the incubating hen.

A small air cell develops at the blunt end as the new-laid egg cools from the temperature of the hen's body. The air cell gives the fully developed chick its first breath before breaking out into a much larger atmosphere.

INTERNAL STRUCTURE OF AN EGG



Source: Poultry and Egg National Board.

The outer covering, or eggshell, of the hen's egg is a calcareous container, brown or white depending on the species, which is translucent when new-laid but opaque upon drying. Though ever so thin, the shell has surprising strength because of its ovoid shape which utilizes the structural principle of the arch; any point of the shell is part of an arch. The eggshell must be strong enough to support the brooding

hen and yet weak enough to allow the fully developed chick to peck its way out.

When chickens punctuated barnyards

A half-century ago an egg was only an egg. Eggs were produced as an agricultural sideline by nondescript chickens on almost all farms. In 1910, for example, chickens were “kept” on almost nine-tenths of the country’s more than 6 million farms. Flocks were small, averaging about 50 birds, and they were either Plymouth Rocks or White Leghorns or New Hampshires, or Rhode Island Reds, or any combination thereof. When not bathing in the dust, the chickens scratched in the barnyard for food which was supplemented with a daily toss of shelled corn. For shelter, the chickens were given a wooden house of sorts which had little equipment other than slats for perching and a row of boxes lined with straw or something for laying. Money from the sale of eggs was pin money for the housewife or perhaps one of the children who tended the chickens. When hens outlived their laying life, they were slaughtered for the meat—an alleged *pièce de résistance* for the visiting minister.

Beginning in the early 1930’s, major changes occurred in egg production. First, dual-purpose flocks were replaced by single-purpose strains bred especially for their egg-laying potentialities. Second, as techniques improved for “sexing” chicks, only female chicks were sold by hatcheries. Third, egg productivity per hen was greatly increased as a result of continuing improvements in breeding, feeding, disease control, and over-all poultry management. These developments were accompanied by increased production by fewer farmers with larger flocks in favored regions where operations became highly integrated.

Egg production is no longer an agricultural sideline; it is serious business, and big business. A substantial part of the country’s annual output in excess of 60 billion eggs comes from highly specialized chicken farms with large flocks cared for in a controlled environment. Large-scale production sometimes runs to flocks of 100,000 birds or more, but far more common is the one-man or one-family unit of 10,000 to 15,000 birds in areas near large population centers.

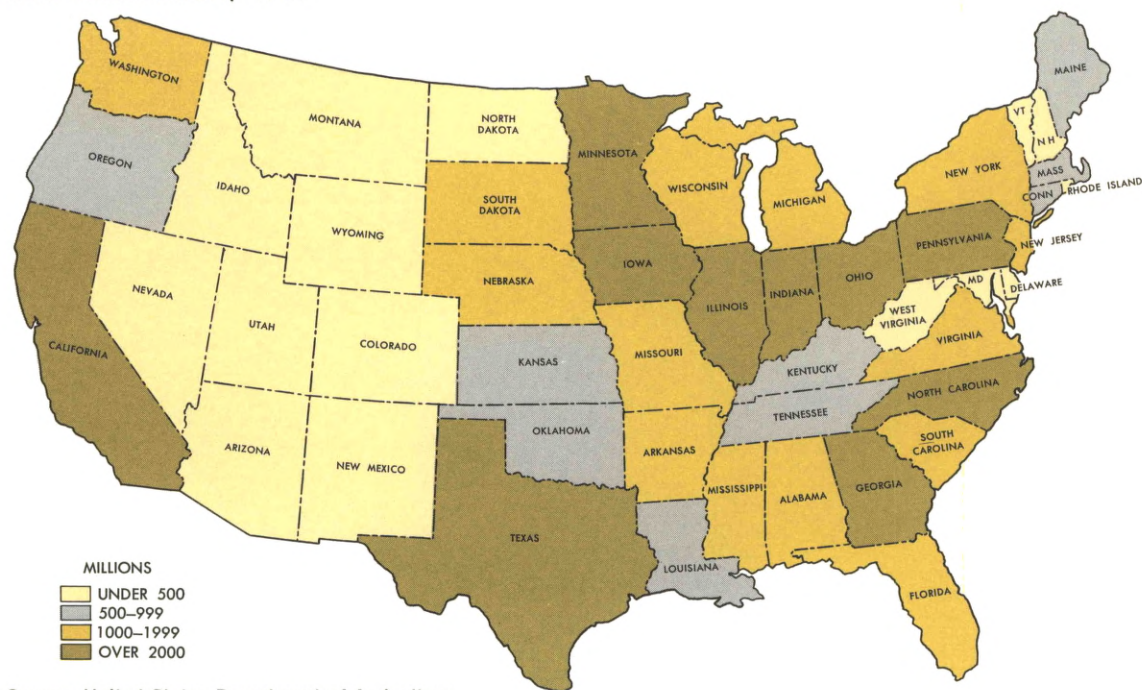
The interstate egg race

One might suppose that consumer preference for fresh eggs and their perishability would favor local lay for local markets. That supposition seems to be supported by the map entitled “Egg Production, 1963.”

All states produce eggs, but some more than others. Last year, ten states produced half the country’s eggs—the ten with output of over 2 billion each. California ranked first by a huge margin, on account of her large population and her remoteness from the other so-called eggshed areas. Iowa was second and comfortably ahead of Pennsylvania which ranked third. These two states, along with Ohio, Indiana, Illinois, and Minnesota, constitute a great egg belt arching right through the heart of the Corn Belt.

Pennsylvania’s number-three position is being seriously challenged by Georgia, which is about in the middle of a rapidly rising band of Southern states. Seven of the nine states, with over 50 per cent increase in egg production during the past decade—as shown on the map “The Shift in Egg Production, 1953–1963”—were the Southern states describing an arc from North Carolina to Arkansas. Is the rising competition of the South in eggs going to duplicate what

EGG PRODUCTION, 1963



Source: United States Department of Agriculture.

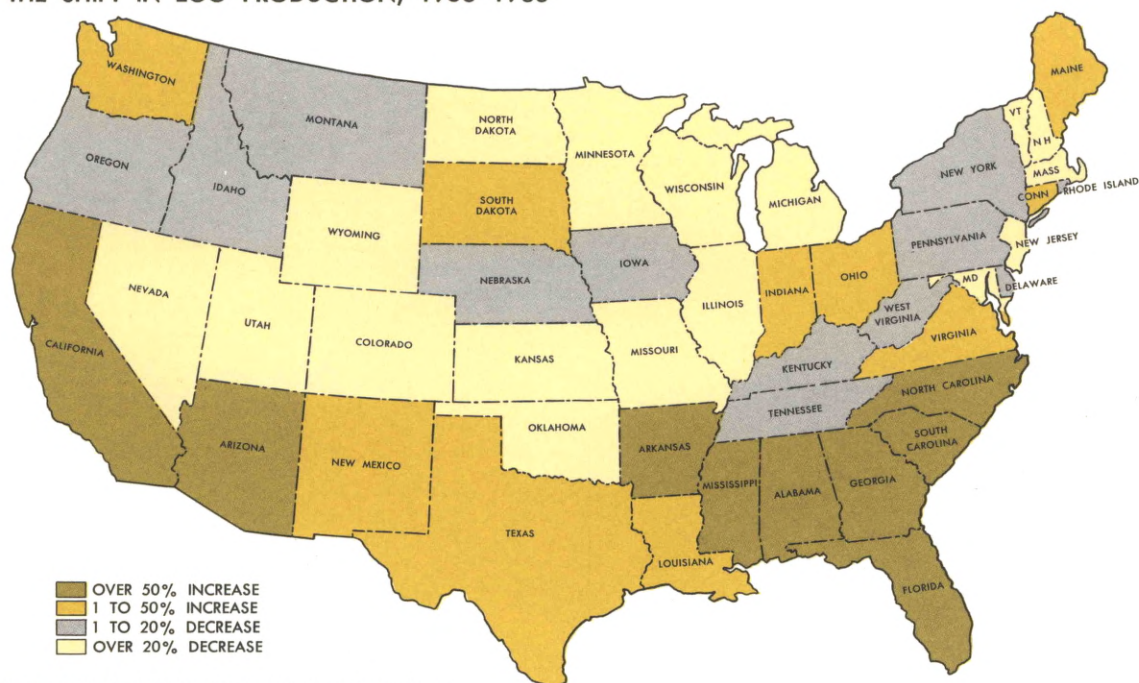
that region did in broilers, as pointed out in previous issues of the *Business Review*? First, let us look into pertinent economic aspects of the egg business.

Introduction to egg economics

If it were possible to slice a hen into a left and right half without doing her any harm or interfering with her production, it would be amazing to observe her mass-production facilities for laying eggs. Raw materials, in the form of food and water, are taken in and processed sequentially by various organs in her assembly-line plumbing. First is the formation of the germ cell. Further down the line occurs the accumulation of the yolk, then the other non-living materials such as the layers of albumen, and finally the egg envelopes, including the shell at the end of the line.

Man has learned to cooperate with the hen by facilitating her mass-production technique. By observation and experiment, he discovered that the White Leghorn has the best productive facilities of all the species. He found that the hen's output depends upon her input; therefore he feeds her the hen's choicest menu—a mash consisting of a full-course dinner so that she gets her minerals and vitamins along with all the other nutritional requirements. He learned that light stimulates the reproductive cycle and that hens like to do their work in the morning, so electric lights are turned on very early and hens go to work in the simulated pre-dawn sunrise. Hens are delicate creatures, averse to noise and foul air, easily catch colds and other diseases—so they are kept inside in well-ventilated houses and are supplied with proper medication. Result: egg production per bird has gone

THE SHIFT IN EGG PRODUCTION, 1953-1963



Source: United States Department of Agriculture.

up, and up, and up, and so has the quality of output.

"Chickens at work, no admittance"

So read the sign posted at one Pennsylvania chicken house, whereupon we drove on and visited another hennery. The electrically lighted, windowless house was of cinder-block construction, 32 feet wide and 280 feet long, with a well-insulated aluminum roof. The owner-operator and his wife greeted us in a small room doubling as an office and a washroom for cleaning the eggs. In an adjacent room—the "cooler"—crated eggs are kept in prime condition awaiting pickup.

Before entering the chickens' big living and laying room, we had to put on plastic boots lest we track in disease germs from previous hen houses visited. Down the long, long avian

corridors ran four blocks of cages separated by concrete runways. There were four rows of cages in each block, and each cage caged three hens allowing each bird about three-fourths of a square foot of space. The entire room accommodated 11,000 birds—all White Leghorns.

Inside the big room everything is automatic: down the length of each row and accessible to each chicken is a trough supplying fresh water; immediately below is another trough supplying chicken feed. Each day throughout the laying period, lights go on automatically at 1 a.m. and off at 3 p.m. Slightly tilted cage floors cause freshly laid eggs to roll gently onto a moving belt that delivers the eggs to the receiving station adjacent to the office, where they are washed automatically and placed into cartons holding 30 dozen each. So highly automated is the operation that the operator and his wife

who tend the 11,000-bird flock are planning to build another chicken house of comparable size in order to keep busy. A laying hen house really resembles an egg factory, but the owners prefer to regard themselves as farmers.

A newly built chicken house of this type is started with the purchase from a hatchery of 20-week-old pullets, the age at which they are about to "drop" eggs. At 25 weeks about half of them will be laying, then comes a 60-week period of lay, after which the production curve declines to a point where the hens become a liability. Thereupon follows a two-week clean-out. The "old" hens are sold to processors for conversion into chicken soup, the building is thoroughly cleaned and readied for a new flock of pullets, beginning another 67-week cycle. Revenue obtained from the sale of outgoing hens is less than the cost of incoming pullets.

Eggs on parade

Daily, or several times a week, trucks make the rounds to pick up cases for delivery to a central processing establishment which may be a producer-cooperative or an independent operator. Here the eggs are prepared for market by another mass-production assembly line.

With the aid of a hand-operated tool equipped with suction cups, a clutch of 30 eggs is transferred deftly from the open case to a moving belt. At successive stages in the parade, the eggs are washed, dried, candled, graded according to weight, and packaged by the dozen into cardboard containers familiar to the housewife shopping at a supermarket.

Candling is no longer done with candles. At the candling station along the moving belt, the eggs pass over electric illumination from below which enables the attendant to identify defects such as blood spots, cracks, and other imperfec-

tions. Defective eggs are removed; the others continue to the weighing station where an electronic device directs the eggs into carriers according to size—ranging from peewees to jumbos. The farmer is paid on a sliding scale depending upon the number of marketable eggs of the various grades, the small eggs going at discounts and the larger sizes commanding premiums.

Want to go in the egg business?

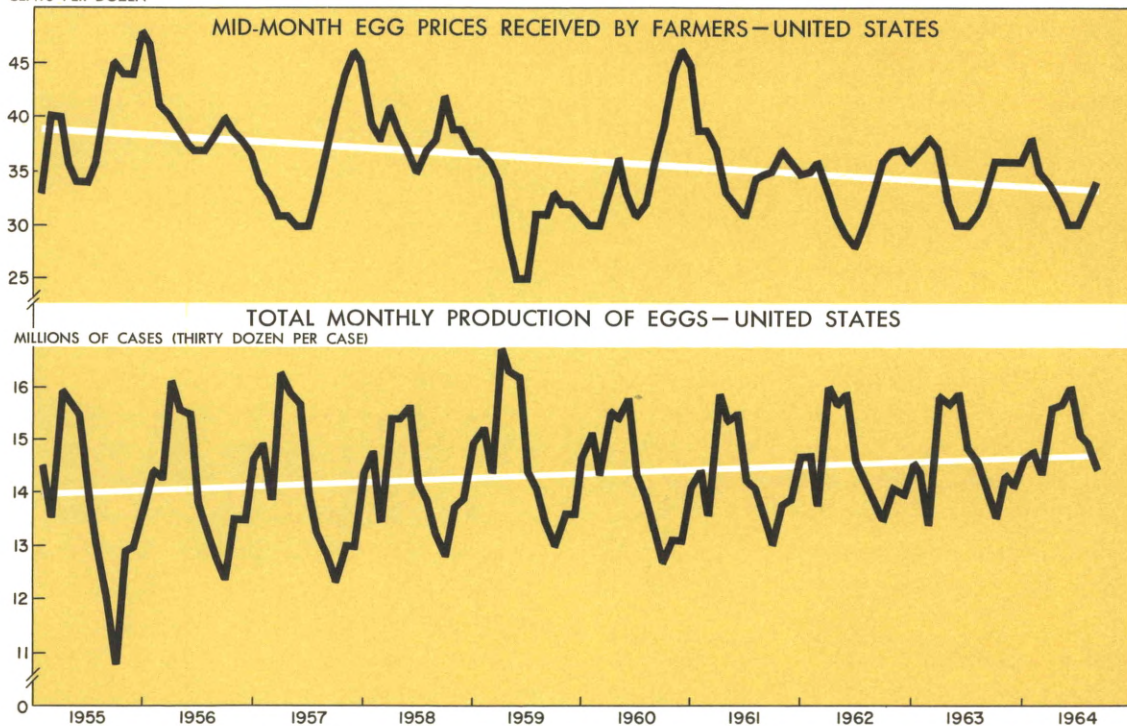
Well, the first piece of discouraging news is the cost of the chicken house. A modern chicken house capable of accommodating 10,000 birds, now the conventional size, costs \$30,000 to \$40,000 or more, depending upon the degree of automation. Another big item is the cost of the pullets. The purchase of 10,000 pullets 20 weeks old, the usual starting age, costs \$18,000 or more at current prices. To be sure, financing can be obtained if you lack the resources and are a good risk, but borrowed money adds interest to all the other costs.

Money to finance the egg business is often secured from the Farm Credit Administration. Medium-term loans of seven years or less to modernize or build additions are obtained from the Production Credit Administration. Longer-term loans for construction of new houses are obtained from Federal Land Banks. Financial assistance in the purchase of pullets is often furnished by the hatchery supplying the chicks or local feed companies or perhaps a local bank. Some banks, however, are a bit wary of chicken loans because of unfavorable experience in the past.

Many poultrymen also have credit arrangements with their feed suppliers who assist them, particularly over the early period of the cycle until egg income exceeds feed outgo. Chickens are voracious eaters and if they are expected to lay well they must be fed well. A 10,000-bird

EGG PRODUCTION AND PRICES

CENTS PER DOZEN



Source: United States Department of Agriculture.

flock may gobble up \$35,000 worth of feed through its laying cycle.

In addition to the feed bill, always the major operating cost, are other expenses: electricity, repairs, sanitation and medication, bird insurance, building and equipment insurance, taxes, record keeping, and miscellaneous items. Health maintenance of the flock is most important and very costly if neglected; dead birds are a dead loss, and lay no eggs. Fortunate is the operator who can keep mortality below 15 per cent during the life cycle of the flock.

More egg economics

Another frustrating aspect of the business is the unrepealable law of supply and demand.

The greater the production, the lower the price. Proof of the statement is apparent in the chart "Egg Production and Prices." Please observe two noteworthy aspects of the double panel—the trends and the jumpy contours. Both are caused by the age-old economic law. The long-run trend of production is upward, that of prices is downward. Annual production rose from 59 billion eggs in 1955 to 63 billion in 1963. The average annual price declined from 39¢ a dozen in 1955 to 34¢ in 1963.

Upon closer examination of the chart, you will note that in some years production and prices part company throughout the seasons of the year. The hens are chiefly responsible for that. The instinct for reproduction among chick-

ens, like other birds, occurs in the spring. Egg laying coincides with the time of general revival in Nature, and summer is devoted to care of offspring. By domestication and selective breeding, man has considerably altered the hen's habits; nevertheless, she still tends to revert to the cycle of her ancestral jungle fowl and produces more eggs in the first half of the year than in the second. Hence the spring flood of eggs and declining prices followed by fall fall-off of eggs and rising prices.

Today's laying hen is a highly productive egg-laying machine. In the course of a year she will lay a spate of eggs weighing several times her own weight. Competition is such, however, that in his quest for profits the farmer must always keep a close watch on feed prices and egg prices. For him, feed prices are never low enough nor egg prices high enough, but he is constantly striving for the golden mean—maximum egg revenue at least cost. How he fares is portrayed in the chart "Egg-Feed Price Ratio," which means the number of pounds of

Hen-house cost accounting

Among the poultryman's expenses cited several paragraphs ago was an item called "record keeping." It is one of the smallest of the expense items but one of the most important.

Preoccupied with all the work of taking care of their laying flocks, too many operators are careless bookkeepers. The poultryman who does no more than make jottings on a calendar or on the backs of stray envelopes is likely to use his first big egg check to buy a 275-horsepower dreamboat instead of applying the money on the feed account or a payment on principal and interest on his building and equipment.

The smart operator budgets revenues and expenses. He sets up a cash-flow sheet which shows, through the course of a flock's cycle, the inflow of income from the sale of eggs, the outflow for feed, and all other expenses so that periodic cash deficits and surpluses may be anticipated. Of course, he will not know his profits or losses precisely until clean-out time when the old flock is displaced by a new one, but a running record of cash flow is an indispensable adjunct to good management.

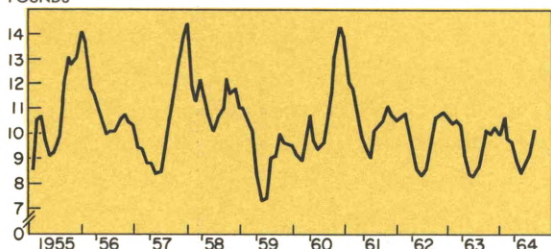
Philadelphia's egg hinterland

There are not many egg-laying chickens in Philadelphia, but it is flanked by a huge egg-producing region of a score of nearby counties in southeastern Pennsylvania, Delaware, and in central and southern New Jersey—for the most part in the Philadelphia Federal Reserve District.

The eggiest county in this hinterland is Lancaster, which is also first in many other things including high-priced land. Where land brings \$1,000 to \$1,800 an acre, farmers must practice intensive agriculture; and the hen fits into that scheme beautifully. On a fifth of an acre one

EGG-FEED* PRICE RATIO—UNITED STATES

POUNDS



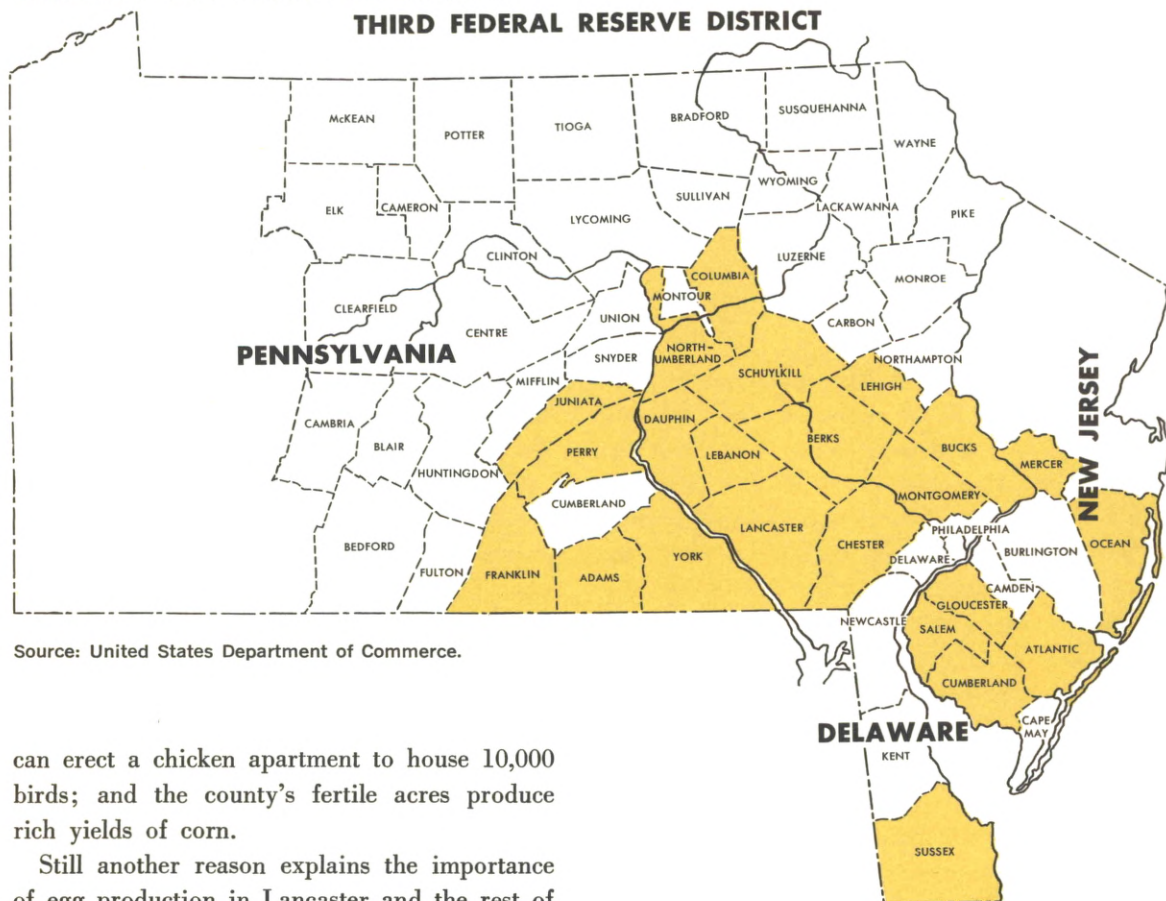
* Number of pounds of poultry ration equal in value to one dozen eggs.

Source: United States Department of Agriculture.

poultry ration that can be purchased with the money received from the sale of one dozen eggs. When the curve rises, the poultryman is glad; when it falls, he is sad. His fortunes are forever fluctuating.

HINTERLAND EGG PRODUCING COUNTIES

THIRD FEDERAL RESERVE DISTRICT



Source: United States Department of Commerce.

can erect a chicken apartment to house 10,000 birds; and the county's fertile acres produce rich yields of corn.

Still another reason explains the importance of egg production in Lancaster and the rest of the Philadelphia region: the proximity of a big market, the biggest in the country. The Philadelphia metropolitan area itself is a sizable market for fresh eggs, and within easy trucking distance is the New York metropolitan colossus where the density of population approaches that of the hen houses. A steady stream of refrigerated trailer trucks haul cases of eggs from shipping points such as Lancaster, York, Vineland, and Toms River to the New York market. Of course that market is also served by caravans of trucks rolling in from more distant points.

The great egg roll

Years ago, local markets were supplied with eggs by local poultrymen. Now eggs are trucked great distances as a result of improved transportation facilities for the shipment of eggs from large egg-surplus areas to large egg-deficit areas. Large-scale motorized shipment links large-scale production with big supermarkets. Eggs roll in any direction to local or distant markets wherever the best returns are obtainable for the producer.

Egg marketing is highly competitive and subject to sudden changes. This may be illustrated

with respect to recent changes in origin of eggs for the New York market. Until about 1958, New York was supplied almost exclusively from nearby and Midwestern states, notably Iowa and Minnesota which also shipped eggs to Southern markets. With the rise of production in the South, especially Georgia and North Carolina, the South has become a surplus area and ships eggs to New York. Moreover, much of the Midwest surplus that used to go South now goes to the New York market in larger quantities, intensifying the competition for producers close to New York City and Philadelphia. Egg production in New York State, New Jersey, and Pennsylvania has declined substantially in the past decade. Pennsylvania and New York are down 11 per cent; New Jersey is down 25 per cent.

To be sure, it costs more to ship eggs to New York from the South or the Midwest than from the Philadelphia area. In the competition for the New York market, local producers have about a two-cent-a-dozen cost advantage in transportation and case exchange arrangements over Georgia producers, but Southern producers have developed cost advantages to overcome their transportation handicap. Georgia producers save in costs of feed which is railed in from the Corn Belt in "Big John" cars; they have lower labor costs, and they make extensive use of integrator-contract system of production patterned after the broiler industry. The contract grower provides the poultry house, labor, and electricity, and the integrator provides the layers, feed, medication, and supervision. By this arrangement it is much easier for a farmer to become a contract egg producer than to start a conventional enterprise.

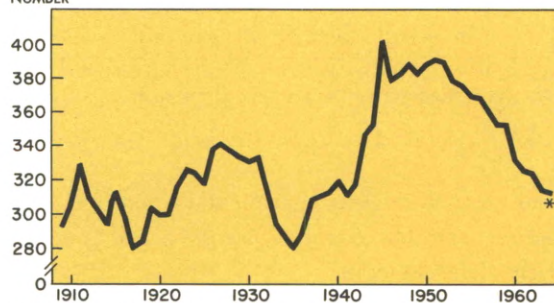
It should not be assumed, however, that Pennsylvania and New Jersey producers are about

to surrender. On the contrary, they are fighting the competition vigorously. In Lancaster County, for example, scores of new chicken houses have been built in the past few years and the new houses have the latest in construction design and automation. Local producers are knowledgeable in genetics, dietetics, and stress quality eggs that bring premium prices. Moreover, they know their costs.

"Adam'n Eve on a raft"

That cryptic order, or its Beatle-ese equivalent, shouted at the cook for two poached eggs on toast isn't heard so frequently as it was when

PER CAPITA CONSUMPTION OF EGGS—
UNITED STATES
NUMBER



* 1964 is estimated.
Source: United States Department of Agriculture.

we ate at the hash house near the college campus. Eggs are just as nutritious and just as good, if you like eggs, as they were a generation ago but people eat fewer than formerly. Per capita consumption, as shown in the chart, has declined from the World War II peak of 402 to an estimated 313 last year.

An egg is a compact 77-calorie conglomeration of protein, minerals, vitamins A and D, and others. The egg is a nutritional gem, can be served in an astonishing variety of ways, is an indispensable ingredient of thousands of delectable dishes, is widely used—fresh, frozen,

or powdered—by bakers, confectioners, and mayonnaise makers, and is used also for non-food purposes by artists, leather tanners, furriers, cosmeticians, and scientists in medical research. Nevertheless, per capita consumption is declining.

Various reasons are cited for the decline, such as the bad American habit of eating no breakfast or wolfing a dunked doughnut, working wives who have no time to cook, TV and breakfast cereal box-top appeals directed to small fry, and the cholesterol scare of older folk. We are unable to appraise the importance or reliability of any of these alleged explanations. All we know is that the per capita curve has been slipping and that makes the competition tougher.

The growing intensity of competition in eggs is analogous in many respects to what has happened in the broiler industry. Not too many years ago the Delmarva Peninsula was the un-

disputed leader in production of broilers. Soon other areas, notably the South, arose to challenge Delmarva. Competition became a beak-and-claw affair with feathers flying. The Peninsula survived, but not without great transformation by way of improvements and modernization in production and marketing operations.

Now Southern layer houses are giving egg producers in the Philadelphia region a hard time. And the competition is being intensified as some Southern broiler houses are being converted to layer houses. In the struggle, weak and inefficient operators are bound to be eliminated. Survivors in the race will be the strong, the innovators, the record-keeping, cost-cutting practitioners bent on recapturing the best markets with quality eggs.

In all probability egg chickens will survive as did meaty chickens, despite the current impression that the chicken-egg argument might shift from which came first to which went last.

RENAISSANCE OF THE RAILS?

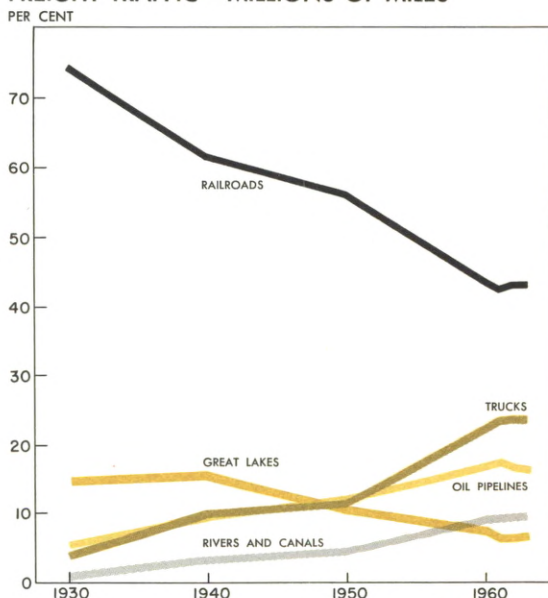
American railroads have been taking it on the chin for many years now, but there are signs they have had enough of playing the sparring partner. Once kingpins of the giant transportation industry, the railroads have been confronted with a multitude of problems including their own internal difficulties, strong labor unions, regulation, and competition from other carriers. Now some of these difficulties may be easing, and a new, brighter era may be dawning for the long downtrodden railroads.

Starting only a few years ago to set the stage for effective competition, the railroads have so far only halted the downward spiral in their share of available business. Yet there are enough indicators pointing to improvement in the railroads' competitive position to encourage further examination at this time. Without making a comprehensive evaluation of the state of the railroad industry, let us take a brief look at where railroads once stood, where they stand now, and where they seem to be heading as movers of goods and people.

The root of the problem

There was a time when railroads dominated intercity traffic, with the lone exception of those areas along major navigable waters. That was a century ago, however. Then, angry farmers landed a haymaker by getting railroads placed under Government regulation. Forty years later Henry Ford and others substituted the gasoline motor for the horse. Thus were set in motion the forces that have so tarnished the rails' former majesty.

DISTRIBUTION OF UNITED STATES INTERCITY
FREIGHT TRAFFIC—MILLIONS OF MILES
PER CENT



Sources: Interstate Commerce Commission; Civil Aeronautics Board; Corps of Engineers; The Bureau of Railway Economics; A.A.R.

First among carriers, the rails' share stands at about 43 per cent of intercity freight traffic, a far cry from their near-monopoly of the last century. The chief gainer at the rails' expense has been the trucking industry, which today enjoys about 24 per cent of the market. The railroads' problem has been how to compete.

Railroading's "New Look"

Innovation has thrived in the rail industry in recent years. New methods, new equipment, and new attitudes have combined to make railroads more efficient, more reliable and more competitive.

When business was bad during the depression and in the post-World War II years, rail men had no incentive to invest new funds. In every year after 1929, except 1942 and 1943, Class I railroads—those with annual operating revenues of \$3 million or more, accounting for nearly 99 per cent of the operating revenues of all line-haul railroads—have shown a net return on invested capital of under 5 per cent.¹ In other words, in most years this capital could have earned as much, if not more, in high-grade corporate bonds. In 1964, according to one estimate, profits of the railroad industry should approximate \$750 million, a gain of about 15 per cent over 1963. If achieved, this will represent a return of about 3.5 per cent on invested capital, up from 3.1 per cent last year.

Management in this decade has been determined to improve the situation, and the outlook for profits is brighter.² This determination has generated optimism about future prospects, and this in turn has manifested itself in new capital outlays and improvements in service. Momentum, the effect of cumulative results and expectations, is picking up in the rail industry.

Profitable piggybacking

Piggybacking has caught the public eye as a symbol of the railroads' resurgence. It is one of the railroads' answers to the decentralization and dispersal of industry. Before its introduction at the end of the 1950's, goods were

shipped by truck to the railroad, loaded into a boxcar, unloaded into a truck at the destination, and sent on to the receiver. Piggybacking is an artful union of the advantages of trailer trucks and railroads. It starts with a trailer truck being loaded at the customer's depot, then driven to the freight yard. There the trailer is loaded on a flatcar and shipped as part of a train. At the destination, the trailer is unloaded, hooked to a tractor and driven to the recipient. Piggyback is generally faster, cheaper, more versatile, and safer for goods—there are smaller and fewer damage claims. Flatcars, after all, are indifferent to what's being carried in the trailers on their backs.

Piggyback trains travel at speeds as high as 70 miles an hour, significantly faster than the average conventional freight train. Most important, piggyback flatcars earn considerably more revenue than conventional boxcars.

Piggyback rates are frequently lower than regular freight rates, and thus more competitive with truckers' rates. Railroads also have lowered other rates in an effort to strengthen their market position. Rate reduction attracts more business and promotes larger total revenue with respect to commodities and services that are sensitive to transportation charges.³

Versatility plus

The more competitive posture of the railroads

¹ By comparison, profits of nonfinancial corporations after taxes have been consistently above 5 per cent of net worth since 1950, and in recent years between 6 and 7 per cent.

² Investors, too, are confident that rails have a strong future. Railroad shares were among the leaders in percentage gain during the first half of 1964, some rising about 100 per cent in value. Another sign of investor confidence is an increased interest in bonds of railroads which have been in rough straits for many years and which now may be in a position to turn a profit. Some bonds which previously stood little chance of being redeemed are being refinanced on favorable terms for investors, or are being paid off when they fall due.

³ The exact effect of a rate cut on total revenue depends on how sensitive shippers are to these charges. Because of the comparability of many services offered by truckers and railroads, their substitutability, the demand for railroad services in many regions may be quite sensitive. If rate reduction does, in fact, produce more business, this will tend to affect unit costs. Railroads, with their heavy overhead, are a business of decreasing costs. For example, \$10 of overhead cost distributed over 100 ton-miles entails a ten cent a ton-mile cost, but this per ton-mile cost is reduced to one cent if the line carries 1,000 ton-miles of freight. In contrast with the railroads, the trucking industry has much smaller proportions of overhead to total costs.

evidences itself in other ways. Greater attention is being given to the improvement of service to the shipper. Many freight trains now are scheduled just as passenger trains are, and operate at passenger train speeds. For example, it now takes one full day less than previously to ship goods from the West Coast to the Middle West.

Piggyback service, however, is not applicable to products which cannot be stacked in a truck trailer. To accommodate shippers of agricultural products, coal, and other bulk goods, railroads are now offering unitized train service. A unitized train carries one product to one customer. This cuts the rails' cost and thus the rate they charge customers. The railroads pioneered this service in 1961 when the threat of moving coal by pipeline slurry became serious. The rate for shipping coal by unitized train is below the regular charge for moving a carload of coal. Public utilities, which buy large quantities of coal to generate electric power, are extremely sensitive about their fuel costs.

Another innovation has been the design and purchase of special-duty railroad cars. The Norfolk and Western Railway has advertised prominently in national publications that: "A decade ago most of our railroad freight was hauled in just seven different types of equipment (railroad cars). Today the N & W can assign any of 36 different kinds to a customer." Other lines also offer wide varieties of equipment.

Many of the railroads have introduced computers to take over routine clerical work and also to control equipment use more efficiently. This has resulted in lower costs and faster scheduling. One device not yet in use involves marking each freight car with a radioactive code which would be read and recorded by machines stationed at different points on a sys-

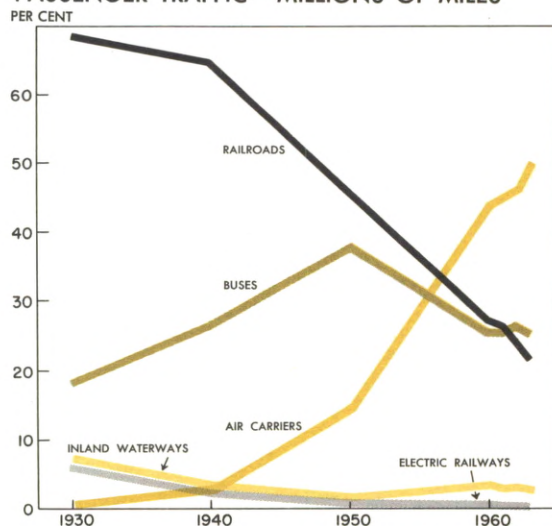
tem's track network. This would enable a line to know where its rolling stock was at any given time.

The albatross—I

Passenger service is anathema to most of the nation's rail lines. There are two distinct kinds of service involved, intercity passenger service and commuter passenger service. The former may be profitable for a few lines, but the latter is almost never profitable.

Intercity passenger service was once a strong contributor to the industry's profits. While most had to make do with coaches, luxurious parlor cars and elegant dining cars were provided for the well-heeled clientele for which rail transportation was *the* way to get from one part of the country to another. Then came the automobile and the airplane. Almost overnight the public had alternative modes of transportation. One could drive from Philadelphia to New

DISTRIBUTION OF UNITED STATES INTERCITY PASSENGER TRAFFIC—MILLIONS OF MILES



Sources: Interstate Commerce Commission; Civil Aeronautics Board; Corps of Engineers; The Bureau of Railway Economics; A.A.R.

York. Admittedly it took a bit longer, but the adventurous American spirit was undaunted. As planes grew larger and could cover more territory more safely, there emerged an alternative way to go from Philadelphia to Pittsburgh, and then to Chicago, and then to San Francisco and beyond.

Railroad passenger service fell upon hard times. With the decrease in number of passengers came a decrease in the quantity and quality of the services offered. Equipment was permitted to wear out, quality of service fell and much rail travel became a second-class form of conveyance. Only in the West is passenger service more than a shadow of its old self. There, scenic routes and better service lure and keep passengers from the newer means of transportation.

There are those who argue that Eastern railroads, for the most part, would like nothing better than to abandon all passenger service. It is not difficult to understand the railroads' disenchantment with carrying passengers. Since 1947 the lines have shown an annual deficit on passenger operations ranging from \$394 million in 1962 to \$724 million in 1957. There is considerable debate over the cost accounting procedures used by the roads to compute this deficit, but we shall not enter into it here.

The revolution in intercity passenger travel has had a snowballing effect on rail service. Business fell off, generating lower-quality service, which in turn generated a further falling off of business. As the chart shows, unlike the freight situation, railroads' share of intercity passenger traffic is still declining.

The albatross—II

Existing commuter service almost everywhere is unsatisfactory to passengers and railroads

alike. When train service into the major cities was the only available means of transportation, commuter business was better. But the introduction of the family car, suburban bus service, and construction of new super highways in and around big cities have ruined railroad commuter business. In several big cities, including New York and Chicago, major highways leading into the city run parallel to, frequently right next to, commuter tracks.

To a visiting Martian boarding a rush-hour commuter train, it would seem impossible that commuter service was anything but enormously profitable. He would be deluded, however. The reason is simple: railroads must have enough equipment and personnel to service rush-hour crowds, but most of the day the equipment and personnel do nothing, or very little. Moreover, labor costs on commuter runs are extraordinarily high in terms of revenue produced when compared with freight. It is not easy to hire several hundred employes for the total twenty hours of morning and evening peak movement per week.

One hope for the future is faster trains, which have been tried with some success in Japan and elsewhere. This would cut the dollar volume of capital equipment necessary to service existing routes. Another is considerable improvement in service to make rail travel a desirable, and preferable, alternative to driving into town for shopping, theater and work. Still another approach has its advocates. They argue that commuter service is an integral part of the over-all metropolitan transit complex, and should thus be coordinated with intracity facilities. In Philadelphia and environs, the commuter lines—the Reading and the Pennsylvania—are partially subsidized by communities served by the railroads. The Philadelphia Transportation Company, the publicly owned opera-

tor of all public transportation facilities in the city, is closely coordinated with rail service to the suburbs.

Conclusion

The outlook is brighter for the railroad industry. Progressive management has started a drive to return the rails to their former eminence. Over the next several years the difference in the transportation industry's competitive struggle should be that it will be a battle between two more nearly equal groups. The prosperous, young trucking firms now have rejuvenated rail-

roads with which to compete, rather than shades of once-great corporate giants.

Their virility underestimated by almost everyone, the rails have been enjoying improved operating statistics and higher marks from investors. By adapting to the times, railroads may be turning the tide in their favor. In an age of specialization, they are making their bid as transport specialists. How successful they will be depends upon the ability of their marketers and managers. After the darkness of over a half century, the renaissance of the rails may be getting underway.

(Continued from Page 2)

technicians, management, and professional talents. All these factors, changing rapidly in a rapidly changing world, affect decisions concerning where production will take place.

These decisions very often do not involve overt relocations. Companies do not have to fail, or even leave, for a metropolis to fall behind in economic growth. Companies and industries can make very substantial shifts in location of their facilities without formally leaving an area. In this continually changing world, they must keep shifting so as to optimize their competitive positions. Those that stay in non-

competitive activities—and locations—lose out.

A region's economic growth then depends on the nature of the region's specializations, on how competitive conditions dictate shifts in the bases of operations of companies, and on how companies meet these challenges. The region therefore must pay attention to the fundamentals of productive factors and markets. It is on these that companies base their decisions in an effort to sharpen their competitive positions. The task is to blunt the influence of adverse forces, enhance favorable local effects, and find ways of adjusting to forces local action cannot affect.

THE FED'S FIFTIETH ANNIVERSARY

Before the start of business on November 16, directors, officers, and employees of the Federal Reserve Bank of Philadelphia and a number of their associates in the banking community, gathered in the main banking room to celebrate the 50th Anniversary of the opening of this Bank. Robert N. Hilkert, First Vice President, presided at the brief ceremony, Alfred H. Williams, former President, spoke of his long experience with the Federal Reserve System, and Karl R. Bopp, President, made the following remarks:

The only certainty about the challenges which this Bank will face during the next 50 years is that they will be unlike those of the last 50. It is equally true, I am sure, that, just as our Bank today is far different than the Bank which opened—and which was envisioned—in 1914, so the Federal Reserve Bank of a few decades from now will be a far different institution than the one we know.

Even now, the new technology of electronic data processing is transforming the nature of the tremendous and vital task of check collection. The developments that are now foreseeable will change many of the familiar physical aspects of the process, and, beyond this, it is likely that further improvement will have repercussions throughout the entire business community.

Data processing and the rapid computation it provides will also create changes in the handling and analysis of information—changes so vast and involving so many variables which cannot now be adequately manipulated, that they are

likely to give rise to new tools of banking practice and monetary policy.

The business community almost certainly will have a different structure two generations hence—though we cannot now foresee its form—and social relationships will be profoundly affected by it. The Federal Reserve System will be called upon to provide new services and may, in fact, be confronted with the need for developing entirely new standards of economic performance and new objectives.

Adaptation to change will not be a new phenomenon for the Federal Reserve Bank. The unique structure of the Federal Reserve System, providing liaison with business, close working relationships with both the legislative and administrative branches of government, and a measure of independence, has conferred a high degree of flexibility and responsiveness on both the Banks and the Board of Governors.

At this Bank, we have developed in the past, and shall continue in the future to develop, the people whose outlook and abilities are consistent with the System's mission—people who are able to make the guiding principles of the founders of the System into living, viable forces in the changing real world in which we live. This requires a careful balance of individual freedom—freedom to innovate and question—with responsibility for day-to-day proficiency on the assigned job. In fact, this balance is a counterpart of that required by the unique structure of the Federal Reserve System, which calls for both independence of judgment and responsibility of

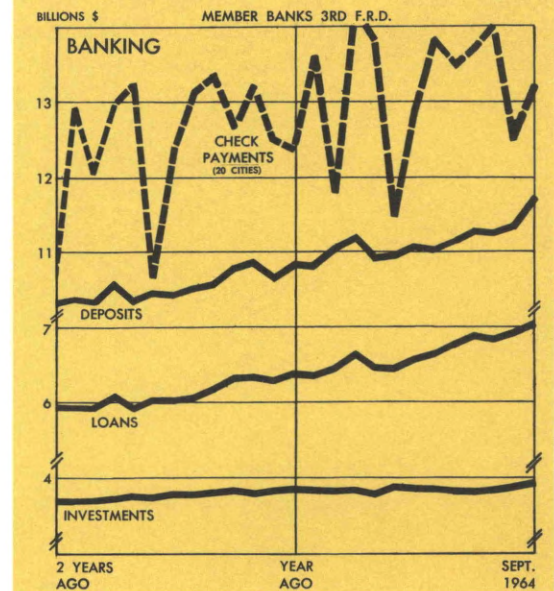
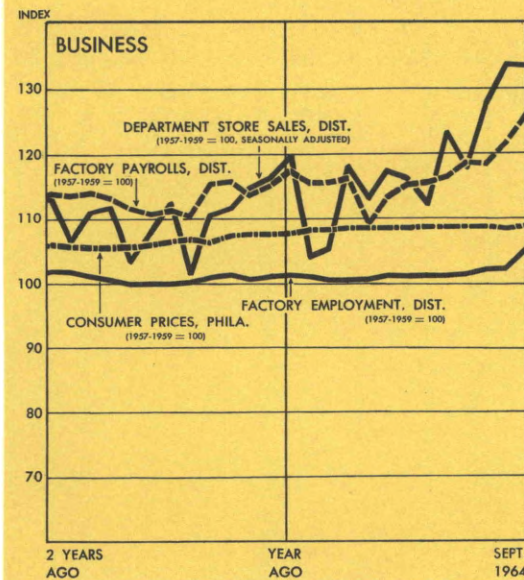
action in the whole sphere of the Fed's interest. We shall strive to maintain this balance in the years ahead.

Fifty years ago to the day, our Bank opened for business at 406 Chestnut Street. Ernie Jones opened the doors that day in 1914, and we are

all delighted that he is here with us today to help usher in our second half-century.

Ernie, will you now come with me and our guests into the main entry of the Bank and help open the doors to the events of the next 50 years.

FOR THE RECORD...



SUMMARY

	Third Federal Reserve District			United States		
	Per cent change			Per cent change		
	Sept. 1964 from		9 mos. 1964 from year ago	Sept. 1964 from		9 mos. 1964 from year ago
	mo. ago	year ago		mo. ago	year ago	
MANUFACTURING						
Production.....	...	...	...	+ 3	+ 7	+ 6
Electric power consumed.....	+ 3	+11	+ 7	...	...	...
Man-hours, total*	+ 2	+ 4	0	...	...	...
Employment, total.....	+ 1	+ 5	+ 1	...	...	...
Wage income**	+ 4	+ 8	+ 3	...	...	...
CONSTRUCTION**	- 1	0	+12	0	+ 1	+ 6
COAL PRODUCTION	+ 2	+ 5	+ 5	- 3	- 1	0
TRADE***						
Department store sales.....	...	...	...	...	...	...
Department store stocks.....	...	...	...	...	...	...
BANKING						
(All member banks)						
Deposits.....	+ 3	+ 8	+ 5	+ 5	+ 9	+ 7
Loans.....	+ 1	+10	+ 9	+ 2	+13	+13
Investments.....	+ 1	+ 2	+ 2	+ 3	+ 2	0
U.S. Govt. securities.....	0	- 3	- 5	+ 3	- 3	- 7
Other.....	+ 2	+11	+16	+ 2	+10	+13
Check payments.....	+ 5†	+7†	+ 5†	+ 7	+10	+11
PRICES						
Wholesale.....	...	...	...	0	0	0
Consumer.....	0†	+ 1†	+ 2†	0	+ 1	+ 1

*Production workers only.

**Value of contracts.

***Adjusted for seasonal variation.

†20 Cities
‡Philadelphia

LOCAL CHANGES

	Factory*				Department Store†			
	Employment		Payrolls		Sales		Check Payments	
	Per cent change Sept. 1964 from		Per cent change Sept. 1964 from		Per cent change Sept. 1964 from		Per cent change Sept. 1964 from	
	mo. ago	year ago	mo. ago	year ago	mo. ago	year ago	mo. ago	year ago
Lehigh Valley...	0	+ 3	+ 2	+11	...	...	+ 4	+ 5
Harrisburg.....	- 1	+ 1	- 2	+ 8	...	...	+ 4	- 8
Lancaster.....	+ 1	+ 3	+ 1	+10	+ 2	+ 5	+10	+26
Philadelphia....	+ 1	+ 1	+ 3	+ 4	+ 1	+ 5	+ 3	+ 4
Reading.....	+ 2	+ 2	- 1	+ 4	- 5	+ 1	+ 4	+14
Scranton.....	- 1	+ 2	- 2	+ 5	+ 1	+ 2	+ 1	+17
Trenton.....	- 3	- 3	+ 1	+ 5	- 4	- 1	+16	- 1
Wilkes-Barre...	- 1	+ 2	- 3	+ 3	- 5	+ 3	+ 6	+11
Wilmington....	+ 6	+ 5	+19	+22	- 3	0	+18	+11
York.....	0	+ 9	0	+15	- 8	+13	0	+44

*Not restricted to corporate limits of cities but covers areas of one or more counties.

†Adjusted for seasonal variation.