Business Review

Financial Institutions in a Changing Environment

How Many Jobs Can One Job Make?

Federal Reserve Bank of Philadelphia

June 1966

FINANCIAL INSTITUTIONS IN A CHANGING ENVIRONMENT

by Karl R. Bopp*

It is a distinct pleasure to be with you today in observance of the 150th anniversary of the savings bank movement in this country. It was in 1816—the morning of December 2, to be exact—that Mr. Curtis Roberts of Philadelphia walked into the office of the Philadelphia Saving Fund Society and became the first depositor at a mutual savings bank. Mr. Roberts left $5 with PSFS. At the end of the day, the new institution had accumulated a total of $25 in deposits.

Today, deposits at mutual savings banks total more than $53 billion. If Mr. Roberts and the Reverend Duncan could be with us today, they would be astounded to learn that savings banks now number over 500 with some 1,200 offices serving depositors who hold more than 22 million savings accounts. They would no doubt be pleased to find that savings banks hold the mortgages of 3 million families and that $8 billion in new mortgage loans were made last year alone.

Mr. Roberts and the Reverend Duncan probably would nod approvingly as well (if they could be coaxed away from the marvel of television and granulated detergents) at the aggressiveness of the 150-year old savings bank industry, an aggressiveness highlighted this year by the quest for federal chartering and the power to make consumer-type loans.

Today, in your sesquicentennial year, I should like to look both backward and forward with you. I should like to discuss some of the factors important in both the past and present evolution of savings banks and financial institutions in general.

This may seem at first blush a bit "far out" to you at a time when we all face complex and pressing problems every day. Interest rates, deposit flows, employee turnover—these and countless other factors occupy much of our time and energies. However, before I am finished, I hope to be able to suggest some important implications for you in taking such a broad view.

First, let me sketch briefly the broad factors important in the growth of savings banks and other financial institutions.

It is not difficult to see why financial institutions developed and prospered in the United States, a nation with great industrial potential, bountiful natural resources, and an expanding population. As our nation grew we needed funds to finance business and agriculture. We needed

*Mr. Bopp, President of the Federal Reserve Bank of Philadelphia, gave this talk at the 46th Annual Conference of the National Association of Mutual Savings Banks, Philadelphia, May 18, 1966.

BUSINESS REVIEW is produced in the Department of Research. Donald R. Hulmes prepared the layout and artwork. The authors will be glad to receive comments on their articles.

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mortgage money and depositories for our savings.

To meet our growing financial requirements, the following alternatives were possible:

1. Existing financial institutions could expand their operations to encompass new needs, or
2. Additional institutions could be established as financial demands evolved.

In fact, existing institutions were either reluctant to meet or unable to satisfy fully our dynamic demand for financial services. As a result, new institutions were established as new needs became more evident. But let us turn back the pages of time and see for ourselves.

Our first financial institutions, of course, were commercial banks. The first chartered bank in our young country appeared in 1781. By 1834, we had 500 banks. By 1861, we had 1,600.

Banks developed in response to increasing demands for hand-to-hand currency and a need for commercial and agricultural credit. They met both of these needs by lending their own personal bank notes to merchants and others. The loan transaction provided credit. The borrower put the notes into circulation in payment of his own obligations, thereby increasing the supply of currency. Later, of course, commercial banks went heavily into the demand deposit business.

But the early banks did not provide nearly the range of services that banks do today. Bankers felt, first of all, that the nature of their liabilities prohibited them from making either long-term business loans or housing loans. Since their deposits and bank notes were payable or redeemable on demand, and since only a fractional reserve was held against these liabilities, they reasoned that their credit activities should be limited to short-term loans of 30- to 60-day maturity. Such loans, they believed, would insure a continuous inflow of funds and thus easily enable them to meet their demand liabilities.

Nor did bankers concern themselves with consumer lending. To lend for consumption purposes, they felt, was to violate the very principle on which banking was built—thrift. Finally, and in spite of their emphasis on thrift, bankers made no provision for interest-paying time deposits.

We can see, then, that a number of voids were evident in our growing economy—voids destined to be filled, if not by bankers, then by someone else.

Rising incomes in the United States and the expansion of urban population helped emphasize one of our first and most pressing financial voids. Early in the nineteenth century more people began to accumulate savings. Most individual savings, however, were not large enough to justify the purchase of stocks or bonds. Some alternative outlet was needed, one which would be safe, liquid, and yield some interest.

At the same time an acute housing shortage was developing on our Eastern Seaboard. Immigration from abroad had begun to swell Philadelphia, Boston, New York, and other cities. Expanded housing facilities were urgently needed.

Public-spirited men began to ponder these problems. They concluded that institutions should be set up to encourage thrift by accepting interest-paying deposits. And what, they asked, would be more reasonable than to invest these funds in mortgages?

The result was the mutual savings bank. The nation's first mutual, as already noted, was opened in Philadelphia in 1816. In the same year, a second was chartered in Boston. But the demand for mortgage credit grew faster than the mutual savings bank. In 1831, another type of institution was established, the savings and loan association. The savings and loan association, served the same function as the mutual, accumulating savings and making mortgage loans.

Along with the growing demand for mortgage

funds, an increasing flow of long-term business capital was required as we built new factories, expanded our railroads, and as we pressed westward toward the Pacific.

Fortunately, the rising demand for capital funds coincided with a second developing economic need. People in the United States were becoming security-conscious. With our rising incomes, we had begun to think not only of the present but also of the future. We became willing to part with a portion of our present income to assure our future economic well-being. In short, we became interested in insurance.

The need for security thus gave rise to a new and important source of funds. And this particular source was peculiarly suited to long-term uses. Unlike bank deposits, insurance-type payments were more regularly received and less likely to be withdrawn. Moreover, it was found that current claims could generally be met from current receipts. Thus *liquidity* was less of a problem. Funds channeled into insurance-type institutions could be committed for the long term, to finance our burgeoning industrial expansion and to meet further housing needs.

Given the needs, the insurance-type institutions began to appear. Fire, casualty, marine, and then life insurance companies were first on the scene, followed by trust companies, private pension funds, and much later, investment companies. Some, including the insurance companies, had prototypes in operation even before the signing of the Declaration of Independence. But the real period of development and expansion came after 1850, with the unprecedented expansion in industrial activity and real incomes.

But not all of our rising incomes were paid into trust funds, savings deposits, or insurance premiums. Between 1850 and 1900, the United States economy was gradually assuming the high-consumption personality that so well characterizes it today. Who could resist the gaily painted bicycles pouring off our production lines? What young housewife could forego that wonderful invention, the sewing machine? Consumer sales soared.

And rising sales of consumer goods were accompanied by an expanding demand for consumer credit. Characteristically, however, existing institutions were reluctant to enter this new and unexplored field. They looked at the consumer down the length of their collective noses. Where credit was extended, it was usually the seller of goods who obliged.

This situation, however, was to be short-lived. Some of the first institutions specializing in consumer credit were the prototype personal finance companies which began to appear in the 1870's. They were followed by credit unions in the early 1900's. At first, these institutions lent not to facilitate the purchase of specific consumer goods but to tide the borrower over some temporary emergency that had arisen in his life.

Later, in the twentieth century, personal finance companies and credit unions finally became important sources of credit for specific durable consumption. Then, along with their new competitors, the sales finance companies, they were quick to respond to the wails of the infant which was to become the giant of American industry, the automobile.

In 1900 there were about 8,000 automobiles in the United States. By 1917 almost 2 million units a year were sold. And with the automobile came radios, washing machines, refrigerators, toasters, etc., etc. The modern period of consumer credit had begun. Where consumption loans had been calculated in millions of dollars, they were now expressed in *billions!* Consumers had become the backbone of big business.

All of these developments did not escape the eye of the commercial banker. He saw the grow-

ing demand for housing, for business capital, and for consumer credit. And he was not unaware of the profits which accrued to the specialized financing institutions. But throughout the nineteenth century and part of the twentieth, the demands for his traditional ware—short-term commercial credit—were generally adequate to absorb most of his funds and thus keeep him in an orthodox frame of mind.

Let his traditional demands become *inadequate* though, and the banker might prove less orthodox than many suspected. Indeed, he might reverse the entire trend of the development of financial institutions in the United States. Rather than specialization, he might usher in a new era of diversification in financial services.

In the 1930's, after the first financial shocks of the great depression were spent, we had the first real test of the banker's orthodox preference for short-term lending, for his excess reserves skyrocketed while commercial loans became scarce.

With surplus funds, the banker began to cast about for additional borrowers. In his quest, he noticed certain structural changes that had developed in our economy—changes which might help him bridge the yawning gap between short- and long-term lending. The Federal Reserve System gave him a source of credit on which he could draw in case a liquidity crisis should arise. The growth of commercial bank time deposits provided funds less subject to sporadic and sudden withdrawal. The introduction of Government-insured mortgages and of a secondary mortgage market added to the safety and liquidity of mortgage lending.

The structural changes plus the existence of surplus funds turned the trick. Mortgage loans, long a staple of the rural banker, became a much more significant portion of the urban banker's loan portfolio. The banker became ever more willing to make long-term loans to business. And, noticing that the sales finance companies didn't "go under" during the depression as he had expected, the banker began lending on a larger scale to consumers. The age of specialization had indeed given way to the age of diversification. The structure of our financial institutions was changing toward its present-day form.

The point of this brief chronology, is that a changing environment has called forth the development of new institutions to meet new needs. Therefore, the first phase of development was the creation of a variety of specialized financial institutions.

Then came a second phase, one in which the specialized institutions saw green grass in the other fellow's back yard. In a very general sense —and like all analogies, this should not be pressed too far—the development of financial institutions has been similar to biological evolution. The simple organism which washed ashore somewhere eons ago, found a new environment and adapted. As it adapted and developed, it became an increasingly complex being. Similarly, financial institutions, orginally more like single-celled entities, have become more complex as they have adapted to a changing environment in order to survive.

Let me emphasize, however, that today's financial manager is not a passive pawn of his environment. He acts as well as reacts. You and other leaders in the financial sector *cause* change. You help shape economic conditions, financial markets, statutory and regulatory provisions, and social attitudes just as your development is affected by these factors. Much of the impetus for change lies with financial institutions themselves.

An example of the fate awaiting those financial institutions which fail to adapt or are unable to adapt to a changing environment is found in the postal savings system. Several weeks ago the

President signed a bill which abolished the system. Although it was a competitor of mutual savings banks, you had little cause for joy at its demise. The postal savings system was in fact an obsolete competitor. It had outlived its purpose, so Congress killed it. Had the system over the years been able to adapt, to find new purposes, to compete vigorously, it would not have shriveled up or have been cast away.

I should like to look briefly at some of the principal arenas in which this dynamic process of adaptation and competition is taking place at the present. After this I shall attempt to define the environmental factors responsible for the present flux.

As for the arenas, financial institutions—as you well know—are slugging it out in markets which range all the way from consumer loans to mortgages and from savings deposits to business financing.

In the mortgage markets, the old competitors are hard at it. In an effort to compete more effectively, mutual savings banks are engaged in a well-publicized struggle to secure federal chartering, thus opening new geographical frontiers for expansion. As you well know, one problem is that mutual savings banks have been missing out on much of the cream of residential mortgage demand which occurred in the Southwest and West—areas not served by savings banks. The extent of the competition for mortgages is well illustrated by the fact that, since 1960, commercial banks have increased their mortgage holdings by 71 percent.

In the consumer lending field, efforts are underway by organizations of savings banks and savings and loan associations to secure statutory and regulatory permission to make consumer loans. Moreover, life insurance companies are making more loans against cash value of policies and thereby competing in the consumer loan market as well as in the real estate mortgage market. Indeed, loans to holders of life policies are no minor item; they stood at 4.8 per cent of total life insurance company assets at the end of 1965.

Life insurance is not sacrosanct either. Mutual savings banks in New York, Massachusetts, and Connecticut have long been active in the field, and creation of the Savings Bank Life Insurance Co. of Connecticut has made possible the extension of SBLI to other states as well.

And the changes which are occurring are not limited to the asset side of the balance sheet. Competition for desposits is intense. Commercial banks, which had found themselves trying to finance longer-term assets with liabilities payable on demand, have found it necessary to rely more on longer-term liabilities. But they could not compete effectively with savings banks and savings and loan associations which had access to longer-term deposits by paying higher rates of interest. The revolutionary changes in commercial banks' scope of operations justified more intense competition for deposits. Innovations were made in savings and time deposit accounts and new terminology was employed in bank advertising and the so-called savings race was on. The new competition for savings is now a fact—a sometimes painful fact—of life for all financial institutions.

Other areas of intense competition are evident in the struggle between savings and commercial banks. Mutual savings banks today scarcely resemble those of a few decades ago. They now compete with commercial banks in offering safe deposit facilities, selling traveler's checks, and providing collection facilities for depositors. Savings banks as yet do not accept demand deposits; but savings are paid virtually on demand and a depositor can draw a money order against his account. Other dramatic changes among fi-

nancial institutions have occurred in recent years, with the result that mutual savings banks, savings and loan associations, and commercial banks are just not so different now as they once were.

All these examples point out this second kind of adaptation. Financial institutions are encroaching upon each other's areas of operation. The growing complexity and blurring distinctions among institutions in our increasingly complex society is completely natural. We note it in other areas of society. The sciences no longer can be divided simply into such branches of learning as chemistry, biology, astronomy, physics, and the like. We now have bio-chemistry and astro-physics, for example. Even the old familiar classifications of industry are increasingly meaningless.

It seems to me there are at least two very basic enviromental reasons for current competition among financial institutions. One has to do with the desire of the various institutions to isolate themselves from the effects of contracting or confining specialized markets. The other concerns the modified attitude of many regulatory authorities.

As for markets, I think managers of financial institutions are aware that in a rapidly changing economy their area of specialization may not always continue to grow adequately. For example, after two decades or so of rather feverish activity, the housing market has turned soft in many areas of the country in recent months. The fact is that multi-celled institutions may be better able to adapt to changes in the environment than their uni-celled counterparts. Damage to a single cell poses less danger to the whole institution. Security, stability and growth require a more complex structure. Therefore, financial institutions became more complex through diversification into new areas and expansion of their base of operations.

A second cause of institutional change is a modified attitude of many regulatory authorities. As the bitter memories of the early 1930's fade (and as public policies have evolved to help insulate the economy from convulsive disruptions), authorities have become more receptive to innovation.

We have witnessed broad expansion in the powers of commercial banks in recent years which has enabled them to compete more vigorously with many types of nonbank institutions. And as each of these institutions finds itself competing with commercial banks on home territory, it seeks regulatory permission to counterattack in an area which had previously been the private domain of commercial banks. We have a domino effect which soon has affected many different types of institutions.

We have seen how several types of financial institutions have, under present-day supervision of the regulatory authorities, adapted to change and how the lines of demarcation between institutions and markets have become blurred. All of this adds up to increased competition.

Is increased competition among financial institutions desirable? This is a crucial question. And it is one which is more difficult to answer than appears at first glance.

Certainly one of the most desirable social effects of increased competition is that the public is given more options in selecting the most favorable benefits from its relationships with financial institutions. A prospective homeowner has more financing alternatives where mutual savings banks, commercial banks, and savings and loan associations compete. Similarly, an automobile buyer has more options if he can look to several types of institutions for financing. Furthermore, we may expect individual institutions to be able to operate more efficiently through the flexibility provided by a broader base of operations. These

factors should yield better service at less cost to people seeking satisfaction of a broad array of needs.

There is, however, an aspect of increased competition among financial institutions which may carry a substantial social cost. When financial institutions bid vigorously for the opportunity to lend money, credit standards may be forced downward. Where reduced yields on high-quality loans result from increased competition, management may seek to compensate by securing higher yields on lower quality loans. Assumption of excessive risks, however, may weaken the entire financial system. The dangers as well as the real opportunities emphasize the vital importance of high-quality professional management for financial institutions.

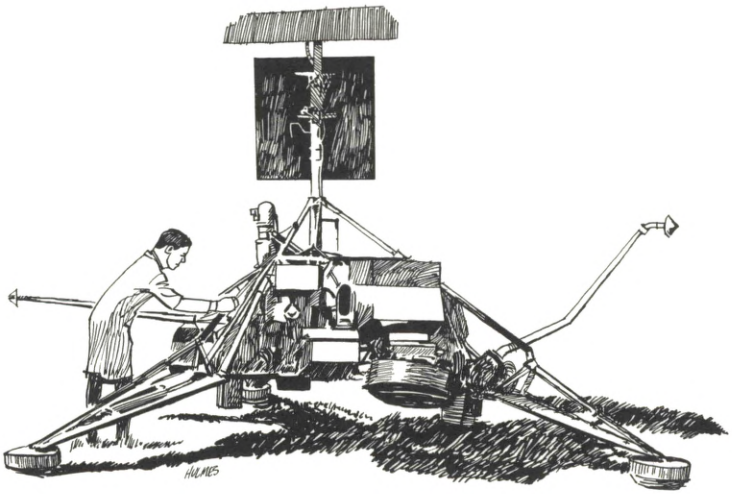
Certainly we cannot allow competition among financial institutions to approach Spencer's notion of survival of the fittest. Society long since has acted to modify the harshness of this philosophy. Regulation of financial institutions is desirable to protect the institutions and the public as well.

But regulation should *not* be brandished as a shield against competition. The health of society depends on a balance of the two forces of regulation and competition.

Moreover, it should be noted that, if financial institutions desire to play in the same ball park —compete for the same depositors and for the same financial assets—it is only equitable that they be subject insofar as possible to the same set of rules. Laws and regulations, unless uniform, confer undue advantage.

At present many institutions possess special advantages. These range from various forms of tax advantage to privileged concessions such as the ability to underwrite municipal bonds and deal in United States Government securities. If financial institutions are to compete more across the board, then that competition must be fair and equitable.

In short, the problem of financial institutions and authorities today is to foster innovation, to nourish adaptation, to promote flexibility—all while maintaining a sufficient degree of safety —so that the financial sector is best able to serve society in an ever-changing environment. Your concern and mine is that each change, innovation, and adaptation is aimed at maximizing the vigor, flexibility and safety of the financial system so that it best meets the needs of a changing economy.



HOW MANY JOBS CAN ONE JOB MAKE?

by Bertram W. Zumeta

The making of $1 million worth of furniture requires more labor than the manufacture of $1 million worth of chemicals. Therefore, Philadelphia, with a labor surplus, should seek to develop furniture making in preference to the manufacture of chemicals.

True or false?

Probably false. Several factors work together to determine an industry's total impact on employment in a region. Its requirement for direct labor is only one of them.

The regional employment potential of manufacturing industries

Suppose an apparel plant employing 70 workers can deliver one million dollars of products in a year. Its products and efficiency are average for the industry; some other mills require over 80 people, some as few as 50, to make a million dollars worth of product. Again, on the average, such an apparel plant requires goods and services, and its employees spend in such a way, that about three additional ("indirect" or "induced") jobs exist for each basic job in the plant (workers to supply the plant with the raw materials and other things it needs for production and to make the goods and supply the services its own employees require to meet their day-to-day living needs).

But many of those additional jobs are not in the metropolitan area where the plant is located. The textile mills that supply it may be in another state, for instance. An apparel plant in the Philadelphia Metropolitan Area, of the type assumed, probably generates indirect and induced employment in the region amounting to only one job for every two basic employees in the plant.

Therefore, such a plant in the Philadelphia

area accounts for about 105 jobs: 70 direct ones plus another 35 indirect and induced jobs.

By comparison, a typical plant manufacturing scientific instruments in Metropolitan Philadelphia accounts for about 90 jobs: 50 directly, plus 40 via indirect and induced employment.

And there are other differences between the two industries which bear upon their job-generating potential. Employment in apparel manufacturing is not increasing very much; instruments manufacturing ranks third among all manufacturing industries in recent growth and second in expected growth. So, ten years hence, if national growth trends prevailed here, the Philadelphia area could expect the 105 apparel jobs to have grown slightly, but the 90 jobs in instruments manufacturing could have become more than 100 also.

Moreover, local growth trends in the two industries diverge from their national counterparts, and this situation presents another complication. Apparel has failed to keep pace with national growth for a number of years; by contrast, employment in instruments manufacturing in the Philadelphia area has been growing faster than in the nation for more than a decade. Taking this into account, a fair guess would put the expectation for the apparel plant's employment effect no higher than 100, and would lift the expectation for the instruments plant even higher than the previous estimate, which was 112.

Of course, these are only expectations. The apparel firm might have the brightest ideas in the industry, and promote them vigorously. The instruments firm could be moribund. Then all bets are off. But if, as assumed, they are typical of their industries and region, the one which directly employs fewer people promises more total jobs in the area in a few years.

This example illustrates at least six important factors that help determine the job-generating potential of different industries:

1. Direct labor requirements—the number of workers the industry needs in order to produce a given output.

2. Indirect labor requirements—the number of workers other regional industries employ in supplying the initiating industry with the goods and services it requires.

3. Induced labor requirements—so called because the workers in the initiating industry and its regional suppliers spend in the region; their spending induces employment in regional industries that provide goods or services the workers buy.

4. The industry's growth prospects. A growing industry is likely in a few years to generate more jobs than a static or declining one, other things being equal.

5. The industry's regional competitive advantage. Other things usually aren't equal. If an industry is shifting its operations very rapidly to the South or West, employment in that industry in the Northeast may expand slowly, even though it is generally a growth activity.

6. The local industry's aggressiveness. There are strong and weak firms in every line. An industry with bright prospects may perform indifferently in a region because local management isn't very good. This is another aspect of competitiveness—linked to inward factors rather than to the outside influences postulated in (5).

This way of looking at the situation really says two very important things about an industry's contribution to employment in an area. *At any point in time*, that contribution depends on the extent to which the industry is a heavy user of direct labor and on the extent to which the local expenditures of the industry and its employees in turn generate more employment. *As time passes*, the contribution will grow or decline depending on the growth of the industry gener-

TABLE 1

There is a great deal of variation in the job-generating power of the several industry groups because of differing requirements for direct labor, different "indirect" and "induced" labor requirements, variations in growth rates among industries, and competitive differences between local industries and their national counterparts. Here the various industries in the Philadelphia area are ranked in accordance with the number of jobs they might be expected to generate 10 years hence per each $1 million of present output. This is only one of several possible bases of ranking. Other ways of looking at the data are illustrated in Tables 2, 3, and 4.

Industry	Typical Direct Employment per $1 million of delivery to final demand*	Direct, Indirect and Induced Local Employment Expressed as Multiplier of Direct Employment*	Total Jobs Implied Now	Prospective National Rate of Growth, Next Decade*	Total Jobs Implied in Ten Years	Local Industry's Employment Growth vs. National Counterpart, 1959-65: (a) more rapid; (b) slight lag; (c) pronounced lag
Printing & publishing	62	1.8	112	15%	129	c
Ordnance and accessories	57	1.8	103	18	122	c
Electrical machinery	49	1.9	93	28	119	c
Furniture & fixtures	68	1.6	109	9	119	c
Instruments	50	1.8	90	24	112	a
Apparel	70	1.5	105	3	108	c
Lumber & wood	72	1.6	115	— 8	106	c
Rubber & plastics	46	1.9	87	20	104	b
Stone, clay & glass	51	1.9	97	6	103	a
Transportation equip.	40	1.9	76	22	93	a
Machinery	45	1.9	86	6	91	c
Fabricated metals	42	1.9	80	11	89	c
Paper	39	1.9	74	18	87	b
Leather	55	1.6	88	— 3	85	c
Chemicals	28	2.2	62	13	70	b
Primary metals	35	2.0	70	— 3	68	a
Textiles	40	1.7	68	—13	59	c
Food	27	2.0	54	2	55	b
Petroleum	10	2.8	28	— 7	26	b
Tobacco	13	2.0	26	—15	22	c

* Data and sources are discussed on p. 15.

ally and the extent to which the local industry's competitive performance causes it to exceed or fall short of that growth.

How do all these factors lock together to determine the job-generating potential of specific industries? Though no one can answer this question definitively, some information exists with respect to at least the first five items listed.*

Table 1 lists the 20 major manufacturing industries in the Philadelphia area, ranked accord-

* *The sixth factor may be reflected in some of the findings given below. But it could be separated from the others only on the basis of knowledge of specific firms and managements—information not available for this analysis.*

TABLE 2

Here industries of the Philadelphia area are ranked according to the estimated number of jobs that might be expected in 10 years for each existing direct job. It is assumed their growth will match the growth of their national counterparts.

I. High		II. Average		III. Low	
Industry	Job Expectation	Industry	Job Expectation	Industry	Job Expectation
Petroleum refining	2.60	Ordnance and accessories	2.14	Furniture and fixtures	1.75
Chemicals	2.50	Fabricated metals	2.12	Tobacco	1.69
Electrical machinery	2.43	Printing and publishing	2.08	Leather	1.55
Transportation equipment	2.32	Food processing	2.04	Apparel	1.54
Rubber and plastics	2.26	Stone, clay and glass	2.02	Textiles	1.48
Instruments	2.24	Machinery	2.02	Lumber and wood	1.47
Paper	2.23	Primary metals	1.94		

ing to the total jobs which might be expected 10 years hence for each $1 million of present output. Printing and publishing heads the list, but a glance at the last column of the table reveals that printing and publishing has not recently grown here at a rate anywhere near that of the printing and publishing industry in the nation. In fact, printing and publishing showed no employment growth in the Philadelphia area between 1959 and 1965, while the national industry gained almost 10 per cent in total employment.

Other bases of comparison might be more appropriate than jobs per $1 million of present output. If a decision hinged on the best use of a piece of industrial land, for instance, the analysis could be made in terms of jobs per acre of land.

Other possible bases of comparison might be direct jobs per $1 million of total investment, or per unit of local investment required to attract a firm.

Finally, it often may be appropriate to compare industries on the basis of the total employment implied by an existing direct job in each industry. In other words . . .

How many jobs can one job make?

There are two aspects to this question. In the first place, the multipliers given in Table 1 are estimates of how many jobs one job makes *now*. A job in printing and publishing really represents 1.8 jobs in total in the area, one direct and 0.8 through indirect and induced employment. A job in petroleum refining represents 2.8 jobs in total, after allowing for the indirect and induced demands associated with it.

This does not mean that having a refinery necessarily is superior to having a printing plant. Printing is lavish with labor and economical with space; refining requires plenty of space but distributes very few direct employees in that space. By concentrating on the total employment implications of a single job, we are abstracting from such considerations. But the question nevertheless is of considerable interest, for as all industry becomes more automated, each direct job becomes more important.

Furthermore, most metropolitan regions live on their manufacturing industries. This is because their economic health depends in large degree on

TABLE 3

Here local industries with high, average and low job-generating potential are grouped according to how well they have kept pace with their national counterparts.

Job-generating Potential of an Existing Worker if Industry's Local Growth Matched Expected National Growth	Local Industry's Employment Growth Record vs. National Counterpart, 1959-1965		
	a. More rapid	b. Slight lag	c. Pronounced lag
I. High	Instruments Transportation equipment	Rubber and plastics Chemicals Paper Petroleum refining	Electrical machinery
II. Average	Stone, clay and glass Primary metals	Food processing	Printing and publishing Ordnance and accessories Fabricated metals Machinery
III. Low	None	None	Apparel Lumber and wood Furniture and fixtures Leather Tobacco Textiles

their competitiveness in industries that serve wide —usually, national—markets. These are largely manufacturing industries, though a number of nonmanufacturing activities also serve national markets (insurance is a good example.)

For this reason, the total employment effect represented by a direct worker in each manufacturing industry is a matter of significant interest, particularly when the prospective growth of the worker's industry is brought into the picture. He represents his region's means of earning its way in the world.

Present and future effects

An estimate of the present situation with respect to the 20 major manufacturing industries in the Philadelphia area is given by the multipliers in the second column of Table 1. An estimate that takes into account not only the present situation but also the influence of prospective growth rates is given in Table 2.*

In Table 2, the 20 manufacturing industries have been divided into three groups according to the estimated number of jobs in ten years per each direct job now. Group I, designated "High," contains industries for which this figure exceeds 2.2; Group II—"Average"—contains those between 1.9 and 2.2; Group III—"Low"—contains those below 1.9. The groupings were made by taking into account natural gaps, or breakpoints, in the sequence of numbers.

Table 2 in effect says that interindustry relationships and rates of industrial growth imply that an existing job in the new kinds of manufacturing (Group I) promises more employment to the region than an existing job in the more traditional industries (Group III). It is, of course, based on average industrial conditions, not exceptional cases. It abstracts from the direct labor intensitivity, space demands and good or poor management potential of particular firms in specific industries. It is geared to the combined present and prospective job implications of one worker directly employed by a typical firm in each industry.

** Table 2 simply expresses the estimates of jobs ten years hence (fifth column of Table 1) as ratios to the estimated direct employment now (first column, Table 1.)*

Table 2 embodies the assumption that each local industry will match the growth of its national counterpart. This has not happened and very probably will not happen. The recent experience of Metropolitan Philadelphia in this regard can be combined with the information in Table 2 by asking how well each industry has been keeping pace with the corresponding industry in the nation. This is done in Table 3.

Obviously, a job in the industries at upper left in Table 3 holds far more promise than one in those at lower right. As one moves up the right-hand column, it becomes more and more imperative to work at improving local competitiveness, for the top industries there would have a great deal of potential if they could come closer to matching the employment growth of their national counterparts.

Table 3 provides a starting point for thinking, by summarizing the general implications of an existing basic job in each industry. Combined with information on how intensively an industry uses labor, space and other resources, and on how well the firms in it are managed, it makes possible a degree of discrimination among industries and firms with respect to their job-generating potential.

Growing job potential in Metropolitan Philadelphia's industrial structure

The Philadelphia area has been drawing an increasing share of its direct employment from industries with high job-generating potential. We have grouped manufacturing industries into three classes according to their estimated job potential. Table 4 shows that Metropolitan Philadelphia has been gaining employment in most of the industries that have high potential, and losing in most of those that have low potential.

Furthermore, the gains here have been greater than the gains nationally, with the major exception of the electrical equipment industry. Also, Philadelphia is losing low-potential industries faster than the nation.*

TABLE 4

The percentage changes in each industry's proportionate share of total manufacturing employment indicate that Philadelphia's industrial employment is shifting into industries with high job-generating potential.

Industries	Percentage Changes in Shares of Employment, 1959-1965	
	Philadelphia Metropolitan Area	United States
I. High job potential		
Petroleum refining	−22	−23
Chemicals	6	4
Electrical machinery	2	11
Transportation equip.	9	− 1
Rubber and plastics	20	15
Instruments	25	3
Paper	6	1
Group I total	4	3
II. Average job potential		
Fabricated metals	− 1	4
Printing and publishing	− 3	2
Food processing	− 4	−10
Stone, clay and glass	5	− 5
Machinery	10	9
Primary metals	10	1
Group II total	2	0
III. Low job potential		
Furniture and fixtures	1	4
Tobacco	−44	−18
Leather	−23	−12
Apparel	− 2	2
Textiles	−21	−10
Lumber and wood	−20	−15
Group III total	−11	− 6

** These conclusions from Table 4 of course refer to shifts into industries with high potential per direct employee. Some of these industries are not labor-intensive. Each direct job they provide has a high job-creating impact, but they do not provide a great many direct jobs.*

In conclusion

The findings presented above have many limitations: they assume "typical" firms, for example, when in fact a very aggressive company in the low job-generating class may produce more in the way of jobs than a sleepy firm in the high job-generating category. The findings also rely on statistical projections of growth rates.

They also possess virtues: they assemble what is known concerning these issues in one place, and relate each aspect to the other aspects. Therefore, they may provide a useful starting point for thinking.

As anyone knows who has had to make them, decisions must be based on assumptions. Assumptions are better when they stem from sound information; however, the information actually available seldom is complete or unassailable. Nevertheless, incomplete information, judiciously employed, makes possible premises for decision-making a bit more reliable than when it is based on common lore or sheer guesswork. If this discussion makes possible some improvement in the premises upon which regional decision-making necessarily must be based, it will have served its purpose.

Appendix

The data in columns 1 and 2 of Table 1 are end results of research carried out by James R. Westkott for the Federal Reserve Bank of Philadelphia. His findings are described in **Employment Multipliers for the Philadelphia Metropolitan Area.**

Briefly, the information was derived by using the 1958 input-output study of the U.S. economy* and modifying the employment multipliers for the U.S. by taking into account general knowledge of where industries in the Philadelphia area obtain their input requirements. The outcome was the local employment multipliers in column 2 of Table 1.

The input-output data are in considerably greater detail than the other information used. Consequently, employment multipliers are available for 79 industries. The monograph by Westkott gives the direct, indirect, induced employment and the employment multipliers for the 79 industries in the U.S. and in Metropolitan Philadelphia. The assumptions underlying these estimates are reviewed in detail in the monograph.

The national growth projections (col. 4 of table 1) are by the National Planning Association.

The record of recent competitive performance is derived from analysis of employment data published by the Bureau of Labor Statistics, U.S. Department of Labor, and the Philadelphia Office of the Bureau of Employment Security, Pennsylvania Department of Labor and Industry.

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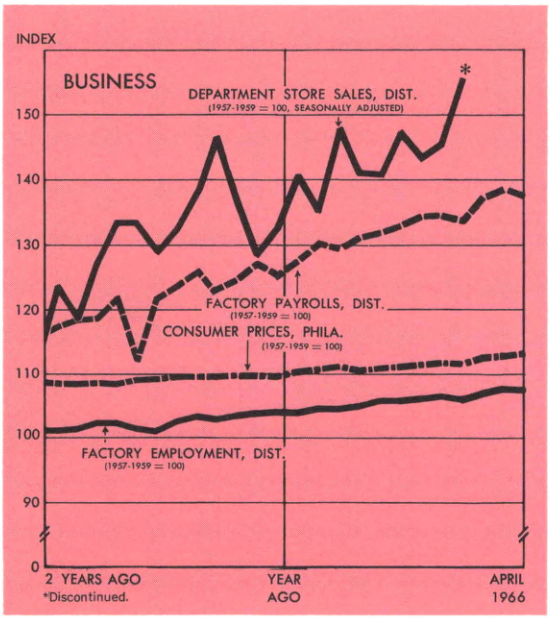
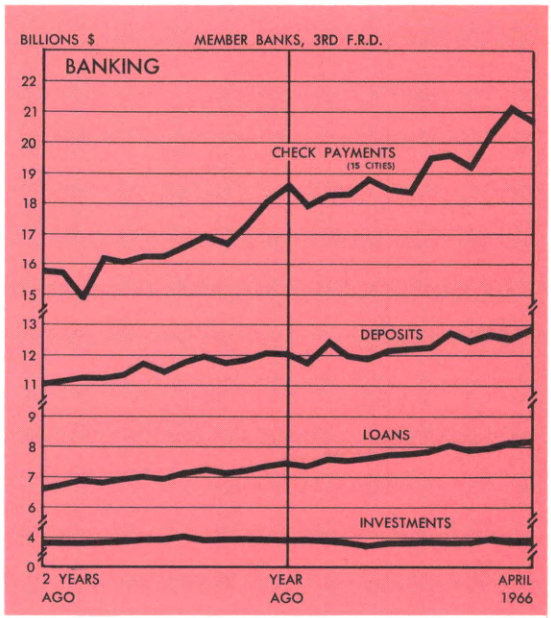
* *Goldman, Morris R., Martin L. Marimont and Beatrice N. Vaccara, "The Interindustry Structure of the United States, A Report on the 1958 Input-Output Study,"* Survey of Current Business, *Volume 44, Number 11, November, 1964, pp. 10-29; and National Economics Division Staff, "The Transactions Table of the 1958 Input-Output Study and Revised Direct and Total Requirements Data,"* Survey of Current Business, *Volume 45, Number 9, September, 1965, pp. 33-49.*

FOR THE RECORD . . .





SUMMARY

	Third Federal Reserve District			United States		
	Per cent change			Per cent change		
	April 1966 from		4 mos. 1966 from year ago	April 1966 from		4 mos. 1966 from year ago
	mo. ago	year ago		mo. ago	year ago	
MANUFACTURING						
Production	.....	.....	.....	+ 1	+10	+ 9
Electric power consumed	— 2	+ 9	+ 9	.....	.....	.....
Man-hours, total*	— 1	+ 6	+ 6	.....	.....	.....
Employment, total	0	+ 3	+ 3	.....	.....	.....
Wage income*	— 1	+10	+10	.....	.....	.....
CONSTRUCTION**	+36	0	— 6	+ 8	+ 7	+10
COAL PRODUCTION	—33	—27	— 3	—28	—21	+ 2
BANKING						
(All member banks)						
Deposits	+ 2	+ 7	+ 6	+ 2	+ 9	+ 8
Loans	+ 1	+10	+10	+ 1	+13	+14
Investments	— 1	— 2	— 1	+ 1	+ 1	+ 1
U.S. Govt. securities	— 1	— 9	— 9	0	— 7	— 7
Other	— 1	+ 9	+11	+ 2	+11	+12
Check payments***	— 1†	+11†	+15†	+ 2	+16	+15
PRICES						
Wholesale	.....	.....	.....	0	+ 4	+ 4
Consumer	0‡	+ 3‡	+ 2‡	0	+ 3	+ 3

*Production workers only
**Value of contracts
***Adjusted for seasonal variation

†15 SMSA's
‡Philadelphia

LOCAL CHANGES

Standard Metropolitan Statistical Areas*	Manufacturing				Banking			
	Employment		Payrolls		Check Payments**		Total Deposits***	
	Per cent change April 1966 from		Per cent change April 1966 from		Per cent change April 1966 from		Per cent change April 1966 from	
	mo. ago	year ago	mo. ago	year ago	mo. ago	year ago	mo. ago	year ago
Wilmington	0	+ 4	+ 2	+ 8	+15	+33	+11	+ 4
Atlantic City	.....	.....	.....	.....	— 3	+13	+ 3	+11
Trenton	0	— 1	0	+ 6	+ 1	+ 6	— 9	+13
Altoona	+ 1	+12	+ 5	+20	— 5	+ 4	+ 2	+ 8
Harrisburg	0	+ 5	— 2	+ 5	+ 5	+16	+ 3	—30
Johnstown	+ 3	+ 1	+ 8	0	— 6	+ 6	+ 2	+ 6
Lancaster	+ 2	+10	+ 2	+23	+ 1	+11	+ 2	+10
Lehigh Valley	+ 1	+ 1	+ 1	+ 1	+ 3	+17	+ 1	+ 6
Philadelphia	0	+ 4	0	+11	— 5	+ 6	+ 2	+ 9
Reading	— 2	+ 4	— 1	+16	+ 4	+10	+ 4	+10
Scranton	— 2	+ 4	— 4	+10	+ 1	+14	+ 2	+11
Wilkes-Barre	+ 1	+ 6	— 2	+12	+ 6	+13	+ 1	+ 8
York	— 3	+ 2	— 3	+15	0	+14	+ 2	+ 5

*Not restricted to corporate limits of cities but covers areas of one or more counties.
**All commercial banks. Adjusted for seasonal variation.
***Member banks only. Last Wednesday of the month.