

# Business Review

Strategy for Industrial Development  
A New Package for Municipal Bonds



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Federal Reserve Bank of Philadelphia

### Strategy for Industrial Development

*. . . Despite efforts of area developers, Philadelphia lags in manufacturing employment growth. Some suggestions for improvement via selectivity.*

### A New Package for Municipal Bonds

*. . . Today's lofty interest rates make municipal bonds attractive to more investors; and the new bond funds make it easier for investors to buy them.*



*The Greater Philadelphia Movement, with the Federal Reserve Bank of Philadelphia as technical advisor, contracted with the Regional Science Research Institute to do an "Investigation of Location Factors Influencing the Economy of the Philadelphia Region." The purpose of the study was both to determine causes of the Philadelphia employment lag, and to define measures which could be taken to strengthen the area's standing. The results of this study, highlights of which are summarized here, form the basis for a . . .*

# STRATEGY FOR INDUSTRIAL DEVELOPMENT

by Richard W. Epps

A push for new industry is characteristic of almost every city and state in the country. In these efforts last year public bodies issued some \$213 million worth of development bonds alone. The objects of the spending—to gain the new jobs that will keep the area up to national growth rates. The tools—from “hard sell” advertising to cut-rate finance of plant and equipment.

Philadelphia is very much in this drive for jobs. Some 15 different corporations and agencies are currently pushing the interests of the metropolitan area. But, Philadelphia has not kept up with national growth rates. In the sixties the metropolis has led its group of peers, the aged areas of New York, Boston and Pittsburgh, in employment growth, but with a rate of only a little over one-half of the national rate. Thus, the metropolis has good justification for commending itself on its showing among the older metropolitan areas, but the goal of the national growth rate still lies ahead.

What will be the primary factor in achieving still higher employment growth? The special efforts of the area developers will be critical in the race, but probably more so will be the qualities of the region which they must sell.

While Philadelphia had an early jump on many other sections of the nation as a result of its location and port facilities, these qualities have lost some of their earlier appeal. So, we are at an appropriate time for an evaluation, and some well-designed improvements in the qualities for industrial location.

## **The core of the lag**

Philadelphia is a manufacturing metropolis. Nearly three-fourths of the area's jobs result directly or indirectly from manufacturing. Thus, the fate of manufacturing is largely the fate of the region.

Unfortunately, the manufacturing base of the region has been lagging. While other metropolitan areas have experienced gains in manufacturing employment of about 25 per cent in the last 15 years, Philadelphia has suffered a slight decline. Even in the current business expansion, while doing better, the Philadelphia Metropolitan Area has lagged the nation and several other large cities.

## **Base of the lag: qualities for industrial location**

When area developers, in trying to bring about an upward shift in the metropolis' growth trend,

are speaking with a prospective Philadelphia industrialist, his questions are about the Philadelphia area. He asks, among other things, about its workers, land, transportation, supporting goods and service industries, and amenities. These subjects are momentous to him for to live he must make a profit, and they directly affect his profits.

**(1) The workers . . .**

What about Philadelphia workers? Manufacturing in the area has for some time been concentrated on metals, petroleum, and chemicals, all of which use skilled and highly trained workers. As a result, the metropolis potentially can offer the prospective industrialist a large pool of skilled workers. This asset is becoming especially important for the area since skill requirements of industries that might be enticed are steadily increasing. The force behind the growing use of skilled workers is the combination of research and development with high levels of capital investment which for more than a decade have brought about radical changes in the technology of manufacturing. This development seems likely to intensify, if anything; thus skill levels of Philadelphia workers should continue to be important.

There is another side to this story, however. While the area has a large pool of skilled workers, the unemployed are primarily unskilled. Thus, the industrialist may find it difficult to carve a skilled workforce out of the metropolitan labor market.

In addition the firm must pay for its labor; the less it pays the better off it is. Like most large metropolitan areas, Philadelphia's wage rates are somewhat above the national level. For some industries, like textiles, wage rates of the area form a real stumbling block to utilization of Philadelphia labor. However, as skills become important, and productivity increases serve to get more products out of each hour of labor, the level of wages necessarily becomes less critical. Therefore,

high wages in Philadelphia should not hurt the cause of area developers, so long as they are trying to attract industries that can translate high *wages* into low labor *costs*.

Queries of the prospective area employer also go into other aspects of labor—the history of labor-management relations and general worker attitude. The time-loss record of Philadelphia workers, while varying from year to year, is generally an asset on these questions.

**(2) The manufacturer's acres . . .**

What land is available, and what services go with the land? Generally, there is adequate land in the metropolitan area for the demands of any industrialist. But it often takes a developer with contacts throughout the region to suggest just the right spot—be it beside an intersection or on the river front. At any site the manufacturer requires a rather extensive menu of public services—among other things, water, sewage treatment, police protection, access roads, fire protection, etc. Generally, his appetite can be satisfied at one of the developed industrial parks in the area.

**(3) Getting in and out . . .**

The industrialist needs to get materials to his workshop and products to market. With respect to the materials he needs, he studies:

1. Their local availability
2. If they are not locally available, how much he will have to spend and how long it takes to bring them into the Philadelphia area
3. Finally, whether it is feasible to import them. Some industries, petroleum, for example, must have water transportation available when they locate in the East. Here, of course, Philadelphia is well qualified for it offers all forms of transportation.

Some will calculate the distance to markets to find costs involved in shipping their products,



and the possibility of sales loss due to delays involved in shipping long distances. Markets, fortunately, are one of the strong points that Philadelphia developers can emphasize, for something like a fifth of the nation's population can be reached from Philadelphia in two hours trucking time.

#### **(4) Supporting industries . . .**

The businessman doesn't try to do everything himself—he needs other firms to provide advertising, repair, delivery and other services for him, and to act as subcontractors for parts needed in his production process. This is especially true for the small business firm which cannot keep specialists in fields like advertising or repair occupied on a full-time basis. Philadelphia, not by accident, has a large base of such service and subcontracting firms—especially in metals, printing and electronics. Only a large industrial center can support such subsidiary firms. In combination with the long history of the metropolis in manufacturing, this has afforded the strong development of this location factor.

#### **(5) The type of area . . .**

Finally, the industrialist being sold on the metropolis evaluates the area as a home for his own family, and for the managerial and professional staff members that he would bring to a plant in Philadelphia. Many potential employers would be more difficult to gain if both the suburbs and the city did not have the appealing residential areas characteristic of Philadelphia. But more than residential areas make up the environment. The area affords not only schools for the children and collegiate education for staff members, but also a variety of cultural and recreational attractions such as museums, theaters, opera, orchestra, art galleries, scientific institutes, sports arenas, a future marina—diversions for all preferences. At the same time, though, Philadelphia suffers from

many of the problems characteristic of all large metropolitan areas—slums, schools, traffic congestion, etc.

#### **Added up . . .**

Major questions answered, the possible employer decides for himself. Which way does it go? Judging from the growth record of Philadelphia, it has too often gone against this metropolis. The principal reasons:

- a. While the city offers a port facility, it is an antiquated one.
- b. While the area labor force includes a large supply of skilled workers, much of the work-force free to take a new job is in the unskilled group.
- c. Natural and urban amenity of the area is not so glamorous to many as is that of the West Coast.
- d. While urban renewal of Philadelphia places it among the national leaders, the area has an image of not being progressive.

#### **The framework of a strategy . . .**

Given the problems in location qualities, what direction of development should be pursued? This depends upon what the area wants out of the development race. Two main goals are:

- (1) Eliminate unemployment. If industrial growth can be increased, some strides toward this goal may be achieved. But, the solution to unemployment is not so simple. Growth may either be in industries such as metals manufacturing which uses skilled employees, or in ones like textiles that are less dependent on skilled workers. As much of the area unemployed are also unskilled, the metropolis has two alternatives:
  1. Retrain the unemployed, and try to attract industries using skilled employees

2. Or, try to attract industries which use the unskilled workers.

On a short-term basis the second alternative may be the better, as it is the more direct approach. But, most of the industries included in this second alternative are either declining in employment or growing only very slowly. This growth history, combined with the trend of all industries toward more extensive mechanization and consequent expansion of demands on the skilled labor force, suggests that importing low-skill industries may be only a temporary solution. Moreover, site costs and labor wages, two factors on which Philadelphia has a weak competitive position, are often of prime importance to firms using unskilled labor. It is questionable, then, whether developers' efforts at bringing or retaining low-skill-using industries would be successful. Therefore, the first alternative appears to be the only real solution. That is, on a long-term basis the second alternative may only delay a recurring unemployment of unskilled workers, while the first promises to upgrade the labor force to current industrial requirements.

(2) Increase income. To have a job is to be occupied, but even more it is to have an income—the higher the better. The division of industries in Table 1 into classes based on wages, growth, and skill level of workers shows an association among the three factors. Higher wages, and thus higher incomes, come with growth industries that use skilled employees. Therefore, an approach to industrial development which stresses high-skill, high-growth industries, will also serve the second goal—increasing incomes.

Which industries should area developers concentrate on? Referring to Table 1 again, in terms of the goals just defined the industries toward the upper left-hand corner are the most desirable, and those toward the lower right-hand corner, the least desirable. Two major complexes make up the upper left-hand corner, and thus are preferable for development: (1) metals-machinery, and (2) chemicals.

*The metals-machinery complex.* Thanks in part to the Delaware River Port, Philadelphia already has developed a strong complex in primary

Both wages and growth should be given attention in selecting industries for development. Industries having the highest wages and growth, i.e., most desirable, are in the upper left-hand corner of the table; and the less desirable in the lower right-hand corner. Shaded industries use mainly skilled workers; unshaded use mainly unskilled workers.

**TABLE 1**  
A RANKING OF INDUSTRIES ON LEVEL OF WAGES, 1965, AND PAST GROWTH, 1959-1965, IN THE U. S.\*

	High Growth	Medium Growth	Low Growth and Decline
High wages	Machinery	Primary metals	Petroleum
		Transport equipment	
		Printing	
		Chemicals	
Medium wages	Fabricated metals	Stone, clay, glass Paper	Food
	Electrical machinery		
	Instruments		
	Rubber & plastics		
Low wages	Furniture	Miscellaneous manufacturing	Tobacco Textiles
		Apparel	Lumber Leather

\*Wages are production worker wages.



metals. Fabricated metals and nonelectrical machinery are, in turn, linked to primary metals for supplies. Thus, the strong primary metals industry acts as an attraction to the growth of other portions of the metals complex.

These locational advantages have been reflected in the growth rates of primary metals and machinery. Continued growth of these industries will largely revolve about labor. In general, the labor requirements of the industry are for skilled workers. Thus, a retraining program specifically geared to the metals-machinery complex in Philadelphia will be strategic.

*The chemicals group.* While the metals complex represents an old, fundamental industry, the chemical industries still flourish with the vigor of youth. Philadelphia is especially noteworthy for employment in chemicals as such workers here are nearly double the proportion in the national labor force.

The base of chemicals in Philadelphia is three-fold. First, the concentration of petroleum refineries acts as a major supplier of raw materials. Second, the port gives access for other water-shipped chemicals. Third, the concentration of firms producing rubber and plastics products forms a major market for the products of the chemical industry. The future of all these factors appears bright in the Philadelphia area, and thus the future for the chemicals complex seems favorable.

Concentration of the petroleum industry in Philadelphia owes much to the port and to the presence of fairly cheap land for expansive refineries. Economies of scale and localization will act to keep the industry located in the area. While an employment decline has occurred in petroleum, it is not so much an indication of out-migration of the industry, as it is of the technological changes which have reduced its labor requirements.

Further development of the port may help the chemicals complex, especially development of sites along the river. Labor demands of the industry are for high-skilled and professional workers. Thus, retraining will help the prospects for the chemicals industry. In addition, the industry is characterized by rapid innovation in products and production methods. As such, it is tied to educational centers. Thus, ties between the chemical industry and Philadelphia's growing Science Center are important for the industry's future. This holds especially for the drug industry and its connection to medical schools in the Philadelphia Metropolitan area.

*The printers.* Printing also is strong on the criteria of wages and growth. Philadelphia has been an outstanding center of the printing trade ever since the pioneering of Ben Franklin. However, employment growth has been less in this area than in the nation. New York has a high concentration of the primary activities of the trade—editing, layout, etc.; Philadelphia is stronger in the mechanics of printing. The proximity to New York is a strength for Philadelphia, and may become more so as changes in technology allow more decentralization of the printing processes from that city. Also, as Philadelphia has had a long history in printing, the secondary services required by the trade have developed in Philadelphia.

The major detraction of the city as a location for printing is the antiquated and congested condition of the printing district. In large part the Philadelphia printing firms are of the small job-shop variety. Thus, they find it difficult to finance the construction of needed new plant facilities. With some investment of public resources in new facilities for rent (possibly a "printing trades center"), a bigger future for printing in Philadelphia may be expected.

### In conclusion

The prime solution to lags in Philadelphia manufacturing, then, is to build upon the currently strong sectors: metals, chemicals, and printing groups. A strong base of services firms for these industries has developed, which will encourage further growth. Enlargement of the skilled-labor

force will aid development of all three industries. Port renewal should aid the chemicals complex, and renewal of plant facilities should aid the printing sector. Thus, for high growth and wages, three main lines of action are: (1) port redevelopment, (2) labor force training, and (3) plant redevelopment for the printing complex.

## TABLE 2 MAJOR LOCATION FACTORS OF 177 INDUSTRY CLASSIFICATIONS

This table represents a major contribution of the Regional Science Research Institute both in detail and in comprehensiveness to the study of industrial location. Because of the table's importance, a glossary of the terms used in it is given fully before the table.

The conclusions presented in the table are based on an extensive search of the literature of industrial location. Unfortunately, not all industries are given equal treatment in the literature. Therefore, confidence in the conclusions varies between industries. Three letters have been used to indicate this coverage:

A—a number of specific studies available on the location of the industry.

B—general studies from which the location characteristics of the industry were inferred.

C—lack of relevant published information on the industry or unexplained apparent randomness in the industry's location pattern.

### Terms

Labor intensive, Capital intensive—relative concepts describing the balance between the roles of labor and capital in the production of a good. These are based on value added per employee, **1963 Census of Manufacturers**.

Economies of scale—a strong bias toward large plants. This was determined from sizes of firms in the **1958 Census of Manufacturers**.

Special and standard product—provides a rough division between industries of the job-shop small-run variety and mass production industries. Based on product descriptions in the **Standard Industrial Classification Manual**.

Intermediate and Final products—refers to the consumer of the products of an industry. Intermediate means that sales are to other businesses; final means that sales are to the government or the public—to persons or institutions outside of the business community. These were derived from the 1958 Input-Output table of the **Survey of Current Business**.

### External Linkages

Forward linkage—the industry tends to locate near the consumers of its product.

Backward linkage—the industry tends to locate near the firms which act as its materials' suppliers.

Concentration dependence—when located near other firms of its own industry, a firm achieves a cost savings by sharing of particular facilities or services.



Urban oriented—a firm achieves a cost savings by sharing facilities or services with other businesses of similar or dissimilar industries.

Forward linkages, backward linkages, and concentration dependence are based on general knowledge. Urban orientation was defined as 70% or more of national employment in the 174 SMA's of the census.

#### Labor Requirements

Professional—heavy concentration of scientists, engineers, designers, technicians, etc. Based on the percent of nonproduction workers in the **1963 Census of Manufacturers**.

Skilled, specialized, semi-skilled, skill levels of production workers. These were measured by the level of the average wage of production workers in the **1963 Census of Manufacturers**.

Cheap—low skilled, low wage labor; low wage being the important aspect. Also derived from the census.

Secondary—dependence on the female labor force. Based on general knowledge and wage levels shown in the **1963 Census of Manufacturers**.

#### Transportation costs and requirements

Low per dollar value—the cost of transportation is low in comparison to the value of the product.

High per dollar value—the cost of transporting the product is high in comparison to the value of the product. The cost of transportation is based on the bulk and perishability of the product, together with any special handling problems in its movement.

Port Oriented—the industry generally requires the use of port facilities for transportation of materials or products. Based on general knowledge of industry, and on the degree of concentration of each industry around port areas, as found in the **1958 Census of Manufacturers**.

Raw Material Orientation—transport cost of raw materials dominate other location factors; based on the review of the literature.

Market Size—the extent of the area in which goods of a single firm would be expected to be sold.

Finally, industries which are presently significant employers in the Philadelphia metropolitan area (\*) or potentially significant employers (†) have been indicated.

	TYPE OF PRODUCTION	TYPE OF OUTPUT	EXTERNAL LINKAGES			LABOR REQUIREMENTS					TRANSP. COSTS & REQUIREMENTS				MARKET SIZE		
			Forward Linkages	Backward Linkages	Concentr. Dependence Urban Orientat.	Profess'l	Skilled or Special.	Semi-Skill	Secondary	Cheap	Low per \$ Value	High per \$ Value	Raw Material Orientation	Port Orient.	Local	Regional	National
20*	Food & kindred (B)																
201	Meat					X			X					X			X
2021, 23, 25	Dairy products, nec.												X				X X
2024, 26	Ice cream & fluid milk																X
203*	Processed fruits, vegetables & sea foods												X	X			X X
204	Grain mill products												X				X X
205*	Bakery products																X
206	Sugar												X				X
207	Confectionary & related products												X	X			X
2082, 83	Malt & malt liquors												X				X X
2084	Wines & Brandy												X				X
2085	Other liquors, nec.												X				X
2086	Soft drinks & carbonated waters												X				X
2087	Flavoring extracts & syrups												X				X
2091-95	Inedible fats & oils																X X
2096, 99	Other food preparations, nec.												X	X			X
2097, 98	Ice & noodles																X X
21	Tobacco manufacturers (B)																
211	Cigarettes												X	X			X
212	Cigars												X	X			X
213	Other tobacco products & snuff												X	X			X
214	Tobacco stemming & redrying												X	X			X
22*	Textile mill products (A)																
221-222	Other broad woven fabric mills, nec.												X	X			X
223	Wool broad woven fabric mills												X	X			X
224	Narrow fabric mills												X	X			X
225*	Knitting mills												X	X			X
226	Dyeing & finishing textiles												X	X			X
227	Floor covering mills												X	X			X
228	Yarn & thread mills												X	X			X
229	Miscellaneous textile goods												X	X			X
23*	Apparel & related products (A)																
231*, 2385, 86	Men's & boys' suits & coats												X	X			X
232*, 2381	Other men's & boys' clothing												X	X			X
233*	Women's outerwear												X	X			X
234	Women's & children's undergarments												X	X			X
2351, 2387, 89	Other apparel, nec.												X	X			X
2352	Men's & boys' hats												X	X			X
236, 2384	Girls' & children's outerwear; robes												X	X			X
237	Fur goods												X	X			X
2391, 94	Housefurnishings, bags & canvas products												X	X			X
2395, 99	Other fabricated textile products, nec.												X	X			X
24	Lumber & wood products (A)																
241, 2, 2432, 91	Logging camps, sawmills, veneer plants, etc.												X	X			X
2431, 33, 2499	Fabricated millwork												X	X			X
244	Wooden containers												X	X			X



	TYPE OF PRODUCTION	TYPE OF OUTPUT	EXTERNAL LINKAGES				LABOR REQUIREMENTS				TRANSP. COSTS & REQUIREMENTS			MARKET SIZE											
			Labor Intensive	Capital Intensive	Economies of Scale	Special Product	Standard Product	Intermed. Product	Final Product	Forward Linkages	Backward Linkages	Concentr. Dependence	Urban Orientat.	Profess'l	Skilled or Special.	Semi-Skill	Secondary	Cheap	Low per \$ Value	High per \$ Value	Raw Material Orientation	Port Orient.	Local	Regional	National
25	Furniture & fixtures (B)																								
2511, 19	Household furniture, nec.		X			X	X		X						X			X						X	
2512	Upholstered wood household furniture		X			X	X			X			X					X						X	
2514, 15	Metal household furniture, springs & mattresses		X		X	X	X			X	X		X					X						X	
2521	Wood office furniture		X			X	X		X					X				X						X	
2522	Metal office furniture			X		X	X		X				X					X						X	
253	Public building & related furniture		X			X	X								X			X						X	
254, 259	Other furniture & fixtures, nec.					X	X											X						X	
26	Paper & allied products (B)																								
261, 2, 3†	Pulp, paper & paperboard mills			X	X	X	X						X					X	X	X				X	
2641, 3, 5, 6, 9	Other paper & paperboard products, nec.					X	X		X		X		X					X					X		
2642, 44	Envelopes & wallpaper			X		X	X											X						X	
265†	Paperboard containers & boxes		X			X	X		X									X						X	
266	Building paper & building board mills			X		X	X						X					X							
27*	Printing & publishing (A)																								
271*	Newspapers		X			X	X		X	X	X		X					X						X	
272*	Periodicals			X		X	X		X	X	X		X	X				X						X	X
2731, 274	Other printing & publishing		X			X	X			X	X		X					X						X	
2732	Book printing					X	X		X	X	X			X				X						X	
275*, 279†	Commercial printing & printing services		X			X	X		X	X	X		X					X						X	
276	Manifold business forms manufacturing					X	X		X		X			X				X						X	X
277	Greeting card manufacturing		X			X	X				X		X	X				X						X	
2782	Blankbooks, binders & devices					X	X				X							X						X	
2789	Bookbinding & related work		X			X	X				X		X					X						X	
28*	Chemicals & allied products (B)																								
281*†	Industrial inorganic & organic chemicals			X	X	X	X				X	X						X	X	X				X	
2821*†, 2, 4	Plastics & synthetics except cellulosic fibers & glass			X	X	X	X		X	X	X		X				X							X	
2823	Cellulosic fibers		X		X	X	X		X		X			X				X						X	
283*†	Drugs			X		X	X				X	X		X				X						X	
284†	Cleaning preparations, cosmetics, perfumes, etc.			X		X	X				X	X		X				X						X	X
285	Paints & allied products			X		X	X				X	X		X				X						X	
286	Gum & wood chemicals		X			X	X				X		X	X				X	X					X	
287	Agricultural chemicals			X		X	X				X		X	X				X		X				X	
2891, 94, 95	Other chemical products			X		X	X		X		X		X	X				X		X				X	
2892	Explosives			X		X	X						X					X						X	
2893	Printing ink		X			X	X		X		X		X					X						X	
29*†	Petroleum & related products (B)			X	X	X	X				X		X					X		X				X	
30	Rubber & misc. plastic products (B)																								
301	Tires & inner tubes			X	X	X	X		X	X	X		X					X						X	
302, 306	Fabricated rubber products, nec.		X			X	X		X	X	X		X	X				X						X	
303	Reclaimed rubber			X		X	X		X	X	X		X					X						X	
307†	Misc. plastics products		X			X	X											X						X	X
31	Leather & leather products (B)																								
311	Leather tanning & finishing		X			X	X		X	X		X						X							
312	Industrial leather belting & packing		X			X	X		X	X		X						X							
313	Boot & shoe cut stock & finding		X			X	X		X		X		X					X							
314	Footwear, except rubber		X		X	X	X				X							X						X	
315	Leather gloves & mittens		X			X	X											X						X	
316	Luggage		X			X	X				X	X						X						X	
317, 319	Leather goods, nec.		X			X	X				X	X						X						X	



		TYPE OF PRODUCTION			TYPE OF OUTPUT				EXTERNAL LINKAGES				LABOR REQUIREMENTS					TRANSP. COSTS & REQUIREMENTS			MARKET SIZE			
		Labor Intensive	Capital Intensive	Economies of Scale	Special Product	Standard Product	Intermed. Product	Final Product	Forward Linkages	Backward Linkages	Concentr. Dependence	Urban Orientat.	Profess'l	Skilled or Special	Semi-Skill	Secondary	Cheap	Low per \$ Value	High per \$ Value	Raw Material Orientation	Port Orient.	Local	Regional	National
32	Stone, clay & glass products (A)																							
321	Flat glass		X	X		X	X							X				X	X					X
3221	Glass containers		X	X		X	X			X					X			X	X				X	X
3229	Pressed & blown glass, nec.		X	X		X	X			X				X				X	X				X	X
323	Glass products, made of purchased glass		X			X	X				X	X						X	X				X	X
324	Cement, hydraulic		X	X			X	X							X			X	X			X	X	X
325†	Structural clay products		X				X	X		X						X		X	X			X	X	X
3261, 64	China & porcelain plumbing & electrical articles		X				X	X					X					X	X			X	X	X
3262, 63	China & earthenware kitchen articles		X				X	X		X						X		X	X			X	X	X
3269	Pottery products, nec.		X				X	X		X						X		X	X			X	X	X
3271, 72	Concrete products		X				X	X								X		X	X			X	X	X
3273	Ready mix concrete		X				X	X		X						X		X	X			X	X	X
3274	Lime						X	X								X		X	X					X
3275	Gypsum products		X				X	X		X					X			X	X			X	X	X
328	Cut stone & stone products		X				X	X		X					X		X	X	X			X	X	X
3291, 92, 96	Mineral wool, abrasive & asbestos products		X				X	X		X				X				X	X			X	X	X
3293	Steam packing, pipe covering, etc.		X				X	X		X					X			X	X			X	X	X
3295	Minerals & earths			X			X	X			X	X			X			X	X			X	X	X
3297	Nonclay refractories			X			X	X		X				X				X	X			X	X	X
3299	Nonmetallic mineral products, nec.		X				X	X		X				X		X		X	X			X	X	X
33*	Primary metal industry (A)																							
331*†	Blast furnaces, steel works & rolling & finishing mills		X	X			X	X		X	X	X	X		X			X	X					X
332, 336	Iron & steel-nonferrous foundries		X				X	X		X	X	X	X		X			X	X					X
333	Primary smelting & refining of nonferrous metals			X			X	X		X				X				X	X	X				
334	Secondary smelting & refining of nonferrous metals		X				X	X		X			X		X			X	X					
335	Rolling, drawing & extruding of nonferrous metals			X			X	X		X			X		X			X	X					
	Misc. primary metals industries					X	X	X		X			X		X			X	X					
34*†	Fabricated metal products (B)																							
341, 3491*	Metal cans, drums, kegs, pails & shipping barrels		X	X			X	X		X				X				X	X					
342	Cutlery, hand tools & general hardware		X				X	X		X				X		X		X	X					X
343, 3494*, 98	Nonelectrical heating apparatus, valves, pipes, plumbing fixtures		X				X	X		X				X				X	X					
344	Fabricated structural metal products		X				X	X		X	X	X		X				X	X					
345*, 348	Wire products, screw machine products, bolts, nuts, etc.		X				X	X		X	X	X		X				X	X					
346*	Metal stampings		X				X	X		X	X	X		X				X	X					
347	Coating, engraving & allied services		X				X	X		X					X			X	X					
3492, 3, 6, 7	Fabricated metal products, nec.		X		X		X	X		X			X		X			X	X					X
35*†	Machinery, except electrical (B)																							
351	Engines & turbines			X			X	X		X			X	X				X	X					
352, 353*	Farm, construction, mining & material handling machinery			X			X	X		X			X	X				X	X					X
354†	Metal working machinery		X				X	X		X			X	X				X	X					
355*	Special industry machinery		X				X	X		X			X	X				X	X					
3561*, 2, 4, 6, 69	General industrial machinery, nec.		X				X	X		X			X	X				X	X					
3565*, 67*	Industrial patterns & process furnaces		X				X	X		X			X	X				X	X					
357	Office, computing & accounting machines		X				X	X		X			X	X				X	X				X	X
358*†	Service industry machines		X				X	X		X			X	X				X	X					
359*	Misc. machinery		X				X	X		X			X	X				X	X					



	TYPE OF PRODUCTION	TYPE OF OUTPUT	EXTERNAL LINKAGES				LABOR REQUIREMENTS					TRANSP. COSTS & REQUIREMENTS			MARKET SIZE										
			Labor Intensive	Capital Intensive	Economies of Scale	Special Product	Standard Product	Intermed Product	Final Product	Forward Linkages	Backward Linkages	Concentr. Dependence	Urban Orientat.	Profess'l	Skilled or Special.	Semi-Skill	Secondary	Cheap	Low per \$ Value	High per \$ Value	Raw Material Orientation	Port Orient.	Local	Regional	National
36*†		Electrical machinery (C)																							
361*, 362*†		Electrical transmission, distribution & industrial equipment			X		X	X			X	X	X	X				X							X
3623		Welding apparatus	X		X		X	X			X		X					X							X
363		Household appliances		X	X		X		X				X					X							X
364*		Electric wiring & lighting equipment			X		X	X					X					X							X
3651		Radios & television	X				X		X				X	X				X					X		X
3652		Phonograph records			X		X		X					X	X			X							X
3661		Telephone & telegraph apparatus			X		X	X			X				X	X		X							X
3662*†		Radio & television transmitting, signaling & detection equipment	X			X	X	X			X	X						X							X
367		Electronic components & accessories	X		X		X	X						X	X			X							X
3692		Primary batteries, dry & wet		X	X		X	X								X		X							X
3691*, 94*		Misc. electric supplies & equipment		X			X	X			X			X				X							X
3693		X-ray apparatus & tubes	X	X			X	X			X			X				X							X
37*		Transportation equipment (B)																							
3713, 15		Truck & bus bodies & trailers	X				X	X			X	X						X							X
3711, 14		Motor vehicles & parts		X	X		X		X			X						X							X
372*†		Aircraft & parts		X	X	X	X		X		X	X		X	X			X							X
373		Ship & boat building & repairing	X	X	X		X				X	X		X				X			X				X
374		Railroad equipment		X	X		X				X			X				X				X			X
375		Motorcycles, bicycles & parts	X				X		X		X			X				X							X
379		Misc. transportation equipment	X				X	X			X					X		X							X
38		Professional & scientific instruments (C)																							
381, 3822		Engineering & scientific instruments; automatic temperature controls		X	X		X	X			X	X						X							X
3821		Mechanical measuring & controlling instruments		X	X		X	X		X		X	X					X					X	X	X
383		Optical instruments & lenses		X			X	X			X	X						X							X
384		Medical & dental instruments & supplies		X			X	X			X	X		X				X							X
385		Ophthalmic goods					X		X						X	X		X							X
386		Photographic equipment & supplies		X			X		X			X	X					X							X
3871		Watches, clocks & parts	X				X	X	X		X	X		X				X							X
3872		Watch cases	X			X	X	X		X	X		X					X							X
39		Misc. manufacturing industries (C)																							
3911, 12		Precious jewelry, findings & materials	X				X				X	X			X			X							X
3913		Lapidary work, cutting and polishing diamonds	X			X	X			X	X		X	X				X							X
3914		Silverware & plated ware					X		X				X					X							X
393		Musical instruments & parts	X			X			X				X					X							X
394		Toys, sporting goods, etc.	X				X		X					X	X			X							X
395		Pens, pencils, office & artists' materials		X			X	X			X				X	X		X							X
396		Costume jewelry, buttons & notions	X				X	X	X	X					X	X		X							X
3981		Brooms & brushes		X			X	X	X		X				X			X							X
3982		Linoleum & other hard surface floorings, nec.		X			X	X			X				X			X							X
3983		Matches			X		X		X								X		X						X
3984		Candles					X		X								X		X						X
3987		Lamp shades	X			X			X		X				X	X		X							X
3988		Morticians' goods				X		X			X				X			X							X
3992		Furs, dressed & dyed		X			X	X			X	X						X					X		X
3993		Signs & advertising displays	X			X	X	X		X	X			X				X							X
3995		Umbrellas, parasols & canes	X			X		X		X	X							X							X

# A NEW PACKAGE FOR MUNICIPAL BONDS

by William F. Staats

In the post World War II period, mutual funds have become an important part of the American scene because of the advantages they offer certain investors. The idea of letting the experts pick a pool of stocks (and then buying shares in the pool) allows the investor to diversify his holdings, to simplify his record-keeping, to secure professional management and to reduce the number of investment decisions he would otherwise have to make.

In recent years a new type of "mutual fund" has achieved increasing popularity—the municipal bond fund. These funds consist of a group of bonds issued for various purposes by state and local governmental entities. And, like their common stock cousins, these funds offer certain advantages to investors.

Among rather sophisticated investors, municipal bonds have long been favored because interest on them is exempt from federal income tax. While this feature has been of particular benefit to taxpayers in higher-income brackets, today's lofty interest rates make municipal yields attractive to investors in the not-so-high brackets. A tax-exempt 4.25 per cent yield, for example, is equivalent to a taxable yield of 5.45 per cent for a person in the 22 per cent tax bracket.

In spite of their tax advantage, municipal bonds are not so widely known to most investors

as are corporate stocks and bonds and United States Government securities. Perhaps municipal bond funds may open the door to state and local government securities for a large number of investors. Here we take a look at the municipal bond funds, what they mean to the investor and to the market for municipal securities.

## **Municipal investment funds**

Municipal investment funds are registered closed-end investment companies established and managed by dealers in municipal securities. The funds are created when a sponsoring dealer acquires a number of different issues of state and local securities and deposits them with a trustee. In exchange, the trustee gives certificates (usually called units) to the sponsoring dealer. Each unit represents a fractional share of the fund's assets; and these units are then sold by the sponsoring dealer directly to investors or to other dealers who place them with their customers. The price paid by investors is equal to the value of the bonds in the fund, plus accrued interest and a sales charge of 4.25 per cent or 4.5 per cent of the market price of the bonds.

As the bonds in the fund's portfolio are redeemed from time to time by the issuing governmental entities, the proceeds are distributed on a pro rata basis to the unit-holders. Because of the



conditions upon which interest from the fund is exempt from federal taxation, cash may not be reinvested by the fund. Therefore, in contrast to a mutual fund, a municipal bond fund does not enjoy a perpetual existence. When most—usually 80 per cent—of the bonds in a fund have been redeemed, the remainder of the portfolio will be sold and the proceeds distributed to the unit-holders. And the fund ceases to exist.

The fund's income consists of tax-exempt interest received on the bonds; and all of this income, less expenses, is paid to unit-holders. The income received by unit-holders is also considered to be exempt from federal income tax under a special ruling by the Commissioner of Internal Revenue.

Expenses of the funds are nominal and consist primarily of the trustee's fee. The sponsors receive no annual management fees.

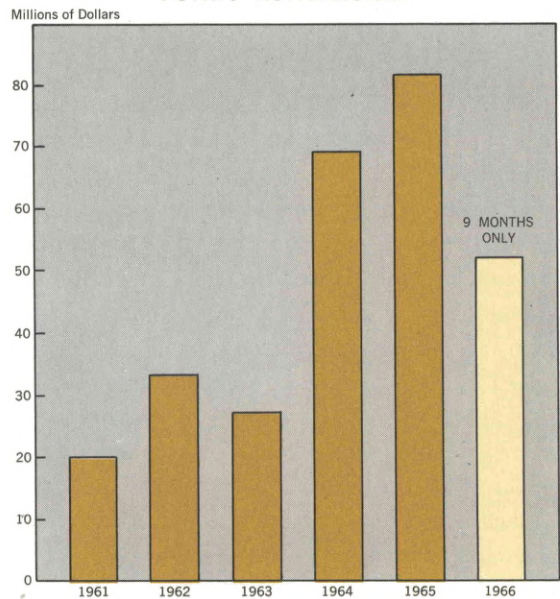
Yields on the funds have been attractive. But the relatively high yields are no accident—the sponsoring dealers have constructed the portfolios with a view toward eye-catching rates. Consequently, revenue bonds comprise about 85 per cent of the initial portfolios of all municipal bond funds, and most individual issues are rated BBB and have long maturities. Two funds achieved even higher yields by holding non-rated bonds almost exclusively.

### Investor benefits

Benefits to investors participating in bond funds include diversification of risk, professional selection and surveillance of the portfolio, and convenience.

Furthermore, bond fund units apparently are more liquid than small blocks of municipal bonds. Sponsors of the funds, while under no legal obligation to buy units, make a market for the units of their funds. Therefore, the speed and

## PRINCIPAL AMOUNT OF MUNICIPAL BOND FUNDS ESTABLISHED



Source: 1961-1965, John Nuveen Company, Inc.; 1966, compiled from published notices.

ease with which an investor is able to sell his units is maximized.

If, however, the sponsor desires not to purchase units, the trustee is obligated to redeem them with monies obtained by selling a portion of the portfolio at the market price.<sup>1</sup> Thus, investors are assured of a high degree of marketability.

As indicated in the chart, growth of municipal bond funds has been very rapid since the first one was established in 1961. Through the end of 1965, initial total assets of the bond funds had increased at a compound annual rate of nearly 84 per cent. In approximately five and one-half years, \$280,500,000 of fund units were sold, indicating a ready acceptance of the new investment vehicle by investors—primarily individuals.

<sup>1</sup> To date, no bonds have been liquidated by any of the municipal bond funds for the purpose of securing funds with which to redeem units.

### Market benefits

While municipal securities held by the funds still represent but a drop in the bucket of the nearly \$100 billion tax-exempt bonds outstanding, the funds may eventually come to have a beneficial impact on the market for municipal securities. Here is why.

The major participants in the municipal bond market are financial institutions. Only about one-third of the outstanding municipal securities are owned by individuals. Therefore, about one-third of the bonds are in “strong hands”—that is, owned by investors who are not likely to sell the securities later in the market. Many of the institutions holding municipals may dump large amounts of the securities into the secondary market when financial conditions change. For example, commercial banks—especially very large ones—have liquidated huge amounts of municipal securities in recent months as they have attempted to meet intense loan demand. So, to the extent that municipal bond funds place ownership of the securities in “strong hands,” there would tend to be less selling pressure on the market as interest rates and demands for funds rise. And to the extent the new funds get individuals into the market, they will tend to absorb bonds sold by banks.

Moreover, municipal bond funds are attracting investors who have not previously bought tax-exempt securities because of the complexities of that market. The market for municipal securities is very complex. There are about 80,000 local governments in existence in the United States, and each year many of them borrow money from the public. For example, in 1965 nearly 8,000 different municipal security issues came to market. These issues covered a wide range of maturities, coupon interest rates and quality. Consequently, the typical investor has a difficult

job wading through the tremendous number of municipal issues and selecting those best suited for him. Perhaps the job is so tough for the less-sophisticated investor that he will choose not to participate in the market. But he may be attracted by municipal funds which simplify his decisions.

To the extent municipal bond funds attract capital which would not otherwise be committed to the market, market “breadth” should be increased. Generally, the more participants in a market, the more “orderly” it may be. In other words, more bids will exist and less volatile price fluctuations should result.

Also, to the extent municipal bond funds are able to attract investors who are less concerned with tax avoidance, the more orderly the market will be. One of the causes of substantial price movement in municipals is the aversion of investors to bonds selling at discounts from par value.<sup>2</sup> While interest income from municipal bonds is tax-free, the discount, if any, is taxable at capital gains rates at time of maturity. Therefore, tax avoiders tend to eschew municipal bonds selling at discounts unless they can be purchased at a price low enough to provide an acceptable after-capital-gains-tax yield.

As interest rates advance (and prices of fixed income securities fall) the advantage of tax-exemption may decline. Therefore, in periods of rising interest rates, the market price of municipals has to decline further than is justified only by rate factors in order to offset the tax effects

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<sup>2</sup> *This aversion is most absolute in the case of trusts (which, incidentally, find tax-exempt securities particularly attractive) in which factors of equity between interests of the life tenant and of the remainderman become important. If a trustee buys a bond at a discount, the remainderman benefits at the expense of the life tenant who receives only the coupon rate. Consequently, trustees usually attempt to avoid difficulties with beneficiaries by purchasing bonds only at par.*



of the discount. Hence, market yields on municipal securities tend to advance faster than yields on other securities in periods of monetary tightness. Of course, other factors such as shifts in bank portfolios also affect interest rates in these periods.

If investors who are less sensitive to tax considerations can be attracted to the municipal market, the aversion to discount bonds will be reduced and price (yield) fluctuations will moderate. Generally, the lower a person's taxable income, the less important are income tax factors in his investment decisions. Of course, no rational investor, whatever his income tax bracket, would invest in tax-exempt securities if their taxable equivalent yield is less than the yields available on taxable securities of comparable quality and maturity.

#### **Prospects for municipal bond funds**

Perhaps there will be some modification and innovation in the funds as sponsors strive to serve better the needs of investors. Two areas, particularly, may offer opportunities for worthwhile innovation.

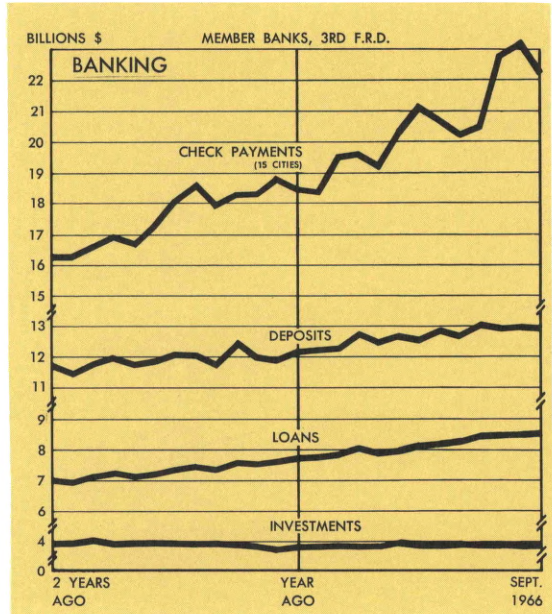
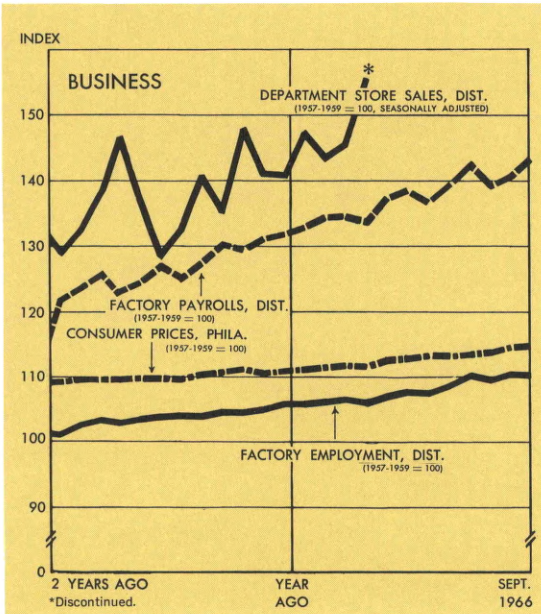
First, while nearly all existing funds hold in-

vestment grade bonds (those with ratings of BBB or better), no fund specializes in bonds of the highest rating. These bonds, of course, carry lower yields. Nevertheless, some investors (especially smaller institutions such as banks, trust companies, and fire and casualty insurance companies) may be deterred from participating by the lack of highest-quality securities in municipal bond portfolios. Perhaps a very high-quality fund would find acceptance among smaller institutions.

Second, while not obligated to make a market in units of their funds, all sponsors currently buy units from investors desiring to sell. It would seem that the bond funds as well as investors would benefit from a more certain secondary market which would tend to enhance the marketability of units in times of heavy sales of shares in newly established funds.

In spite of these areas of potential improvement, the rapid acceptance of municipal bond funds as they currently exist attests to their popularity. The factors which have prompted this acceptance may well continue to promote growth in the number of funds. And as their number increases, so will their importance in the municipal bond market.

# FOR THE RECORD ...



SUMMARY	Third Federal Reserve District			United States		
	Per cent change			Per cent change		
	Sept. 1966 from		9 mos. 1966 from year ago	Sept. 1966 from		9 mos. 1966 from year ago
	mo. ago	year ago		mo. ago	year ago	
<b>MANUFACTURING</b>						
Production .....	.....	.....	.....	+ 3	+11	+10
Electric power consumed .....	0	+11	+ 9	.....	.....	.....
Man-hours, total* .....	0	+ 3	+ 4	.....	.....	.....
Employment, total .....	0	+ 3	+ 4	.....	.....	.....
Wage income* .....	+ 2	+ 8	+ 8	.....	.....	.....
CONSTRUCTION** .....	+15	+11	- 1	- 5	- 1	+ 5
COAL PRODUCTION .....	0	+ 9	- 2	- 5	+ 7	+ 3
<b>BANKING</b>						
(All member banks)						
Deposits .....	0	+ 6	+ 7	0	+ 6	+ 7
Loans .....	0	+10	+11	0	+11	+13
Investments .....	+ 1	+ 1	- 1	0	+ 1	+ 1
U.S. Govt. securities .....	- 1	- 8	- 9	0	- 6	- 8
Other .....	+ 2	+13	+11	+ 1	+ 9	+11
Check payments*** .....	- 4†	+20†	+17†	0	+20	+16
<b>PRICES</b>						
Wholesale .....	.....	.....	.....	0	+ 4	+ 4
Consumer .....	0‡	+ 4‡	+ 3‡	0	+ 4	+ 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 Sept. 1966 from		Per cent change Sept. 1966 from		Per cent change Sept. 1966 from		Per cent change Sept. 1966 from	
	mo. ago	year ago	mo. ago	year ago	mo. ago	year ago	mo. ago	year ago
Wilmington .....	+ 5	+ 3	+16	+13	-18	+73	+ 4	0
Atlantic City .....	.....	.....	.....	.....	- 1	+ 6	+ 1	+16
Trenton .....	0	+ 6	+ 1	+13	+ 3	+16	0	+ 7
Altoona .....	- 1	+10	- 1	+15	+ 3	+14	0	+11
Harrisburg .....	0	+ 4	0	+ 8	+ 6	+14	+ 6	+11
Johnstown .....	0	+ 4	0	+ 9	- 2	+ 5	0	+ 6
Lancaster .....	- 2	+ 4	- 1	+ 6	+ 3	+15	+ 2	+11
Lehigh Valley .....	- 1	+ 1	+ 1	+ 6	- 4	+11	- 1	+ 4
Philadelphia .....	0	+ 3	+ 2	+ 9	- 1	+12	- 1	+ 8
Reading .....	0	0	+ 7	+ 6	- 5	- 7	0	-38
Scranton .....	0	+ 4	+ 2	+10	- 2	+ 6	+ 1	+11
Wilkes-Barre .....	- 2	+ 8	- 2	+16	- 3	+12	+ 1	+ 6
York .....	- 1	+ 2	- 1	+10	- 5	+15	- 2	+ 1

\*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.