

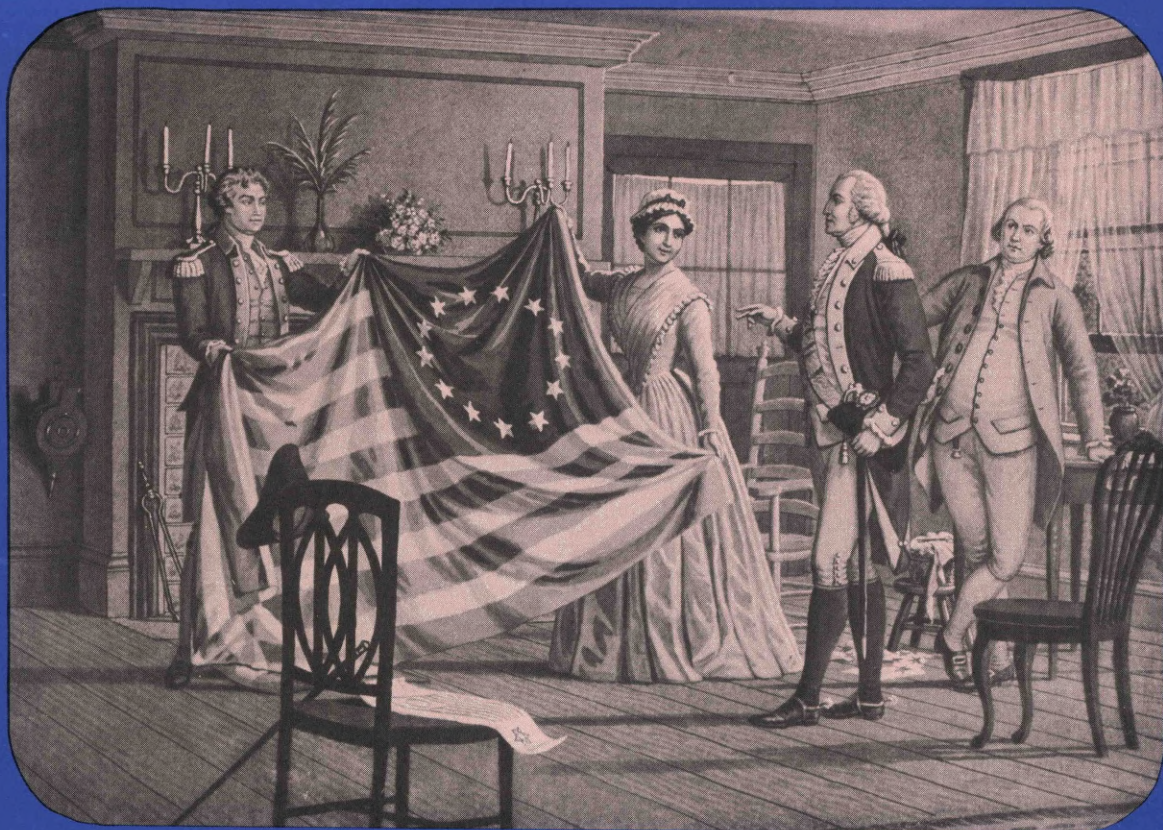
# BUSINESS

july/august 1976

# REVIEW

Would Fixed Exchange Rates Control Inflation?

A Fresh Look at the Municipal Bond Market





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**FEDERAL RESERVE BANK OF PHILADELPHIA**  
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**On our cover:** *Mrs. Elizabeth Ross Shows the First U.S. Flag to General George Washington, 1776.* Wash drawing by Joseph Boggs Beale (1841-1926). From the collection of American National Insurance Company, Galveston, Texas.

Beale, great-grandnephew of the famous seamstress, produced some 1,700 wash drawings on American historical subjects. These drawings were designed to be transferred photographically onto glass slides for use in a magic lantern—a forerunner of the modern slide projector. The magic lantern, like Beale himself, was native to Philadelphia.

The Stars and Stripes developed by stages from the British red ensign. The ensign, with its plain red field, was distinguished by the crosses of St. George and St. Andrew on a blue canton at the top inner quarter, which symbolized the union of England with Scotland. The Taunton flag of 1774 is just the red ensign with the motto 'Liberty and Union' imposed on the bottom of the field. In 1775, some colonists, not using the motto, divided the red field of the ensign with six horizontal white stripes. This combination of stripes with the union of crosses is the American Grand Union or Congress flag.

Cruciform rows of stars replaced the British crosses on the blue canton as sentiment for independence increased. The first known American flag with such stars was flown from the schooner "Lee" in 1775. These stars reappeared in the canton of the Rhode Island flag of 1776, which had, however, a white field. The Stars and Stripes, adopted as the national flag in 1777, combined the striped field of the American Grand Union with a canton of stars arranged as in the Rhode Island flag or, occasionally, in a circle.

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# Would Fixed Exchange Rates Control Inflation?

*By Janice M. Westerfield\**

The world has just suffered through its worst bout of inflation in recent decades. Now, with the pressure on prices less than it was, policymakers and economists are reflecting on what set off the recent round of global inflation. Some think they've found the answer—the restructuring of the foreign exchange system three years ago.

In 1973, the U.S. and its major trading partners officially abandoned their old arrangement for buying and selling one another's money at fixed rates and moved to a floating-rate system. Under the new arrangement, central banks no longer are required to maintain the rate at which dollars are exchanged for marks or yen. For the most part, exchange rates are turned loose to be determined by market forces—by how much of one currency people will pay for another

currency. During the first two years after the abandonment of fixed rates, prices soared almost everywhere. U.S. consumer prices rose 22 percent—more than 10 percent a year—and wholesale prices rose nearly 40 percent. Other nations suffered the same way, some more and some a bit less.

Of course, when the system changed, inflation already had been around for a long time. The conventional wisdom in economics is that domestic inflation determines adjustments in the exchange rate and that the causes of inflation are to be found in each country's internal policies, not in the exchange-rate system. On this view, the uneven rise in prices from country to country—some in the U.S., more in Britain, less in Germany—helped to blow the old system apart. But is this right? Some economists don't think so. As far as they're concerned, currency depreciation itself plays an important role in determining the extent of inflation in the country whose currency

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depreciates. Changing the amount of one currency that another currency will buy almost always boosts prices, and any system that makes it easier for exchange rates to move around, as the new system does, just feeds the inflationary fires. Or so the argument goes.

Much might be said on both sides of this question, and some economists would like to keep what seems best in each point of view. The issue, however, is more than academic; it's a policy issue—whether, so far as inflation is concerned, the world would be better off staying with floating rates or going back to fixed rates. The challengers have developed a theory and marshalled some interesting evidence to support it; but for the present at least, it seems premature to move back to the old system solely for the sake of curbing world inflation.

#### FROM ALMOST FIXED TO ALMOST FLOATING RATES

The old system goes back to a conference held at Bretton Woods in 1944. The aim of that conference was to stabilize international exchange rates and promote balanced and orderly trade in the postwar era. To this end, values for the dollar and other monetary units were stated in measures of gold. The pound sterling, for example, was pegged at about 1/11 ounce of gold, the dollar at 1/35 ounce. By this standard, the dollar-to-pound rate of exchange was \$4.03=£1. The basis for assigning values to monetary units was their expected purchasing power—how much in the way of goods and services each unit would buy. One pound sterling was supposed to buy about as much as four American dollars.

How much a dollar will buy changes over time, though, and so does the purchasing power of other currencies. Not only that, one currency may gain or lose purchasing power more or less quickly than another; and one may gain while another loses. The members of the Bretton Woods Conference provided for small movements of these kinds by allowing exchange rates to fluctuate within certain

limits on either side of the established figures without triggering central bank action. If a monetary unit threatened to gain or lose enough to move outside these limits, central banks—the Fed, say, or the Bank of England—intervened by buying or selling currency. Buying currency raised its price, selling lowered its price. Where changes in a monetary unit's purchasing power reflected fundamental changes in national economic conditions, the unit's value was pegged officially at a new figure (par value). Rates were fixed under this system, but not fixed for good; they could be adjusted, though most countries were reluctant to adjust them. Many countries found that they had put too high a value on their currencies at first and so had to lower their values officially, or devalue them, later on. But the Bretton Woods system worked fairly well into the 1960s. International money markets were orderly if not entirely stable, and inflation rates were moderate.

The world monetary picture took on a different look in 1971 as inflation accelerated and U.S. payment deficits grew. The U.S. devalued the dollar.<sup>1</sup> Other countries adjusted their exchange rates. Within two years, the U.S. joined the rest of the trading com-

<sup>1</sup>A devaluation is an official reduction of the parity rate at which a currency is valued, while a depreciation is a reduction in the value of a currency that comes about under the influence of market conditions. A currency's value may be stated by indicating how much of another currency it will buy—quoting its exchange rate. At a given moment, let's suppose, one U.S. dollar will buy as much as four German marks. When the exchange rate drops from \$1=4DM to \$1=3DM, the dollar depreciates. (At the same time the mark rises from \$.25 to \$.33 and so appreciates in value.) The parity rate, which formerly expressed the value of each monetary unit in terms of gold, now expresses it in terms of special drawing rights (SDRs).

By the late 1960s, exchange rates no longer gave an accurate picture of the dollar's purchasing power against other currencies. In August 1971, pressed by countries that were cashing in their dollars, the U.S. suspended conversion of currency into gold. In December, the dollar was devalued by about 8 percent to bring its nominal value back into line with its effective (purchasing) value. Despite these actions, the dollar continued to slip, and it was devalued again in 1973 by 10 percent.



munity in abandoning fixed rates, letting the dollar float up and down—appreciate and depreciate—as currency dealers paid more or less for it in the international market. The current system is not a pure floating-rate system. Central banks still exert their influence to control the prices of currency and keep the market orderly. But the emphasis is very different, and the fact that inflation really broke loose just as the shift of emphasis occurred leads some economists and policymakers to question the conventional view of the matter.

### **INFLATION AND CURRENCY DEPRECIATION: THE CONVENTIONAL WISDOM**

The conventional view is that inflation brings on currency depreciation. The focal point is the individual national economy. That's where to look for the main sources of a country's inflation—or deflation, for that matter. Granted, the industrial economies have close ties to one another; but it doesn't follow that changing the exchange rate will have any major effect on domestic prices. The influence runs in the other direction: one country's ties to another show up when domestic price trends disturb exchange rates, the argument concludes.

**The Effect of Domestic Inflation on Exchange Rates.** Economists who think this way point out that governments boost domestic prices when fiscal and monetary policies are overly stimulative.

Take the case of domestic inflation in the United States. The stage was set between 1971 and 1973 as the Federal government increased its borrowing and spending and the money supply grew rapidly. The result was that spending jumped out ahead of the economy's ability to produce goods and services. When this happened, prices began to rise.

Domestic prices were the first to move, and they made imports look cheap by comparison. Everybody likes a bargain, so people bought imports. Consumers used dollars to buy them for consumption, and importers bought them for resale. But when importers

bought them, they had to exchange dollars for other currencies to pay their foreign suppliers; and when they bought foreign currency, they put upward pressure on its price. So it took more dollars to buy a mark or a pound, and it took more dollars to buy foreign goods priced in marks or pounds.

Further, as imports rose, exports fell. The prices of U.S. goods increased against the prices of goods produced abroad, and America's competitive position weakened. Devaluation could restore that competitive position as well as allow dollar prices of export goods to keep pace with U.S. inflation. Even with U.S. fiscal and monetary policies overstimulating the economy and pushing prices up, the dollar might have stayed within the limits of the fixed-exchange-rate system if the central banks had bought up dollars with foreign currency reserves. But neither the Fed nor any other central bank bought enough to keep the dollar from losing ground in the world market. The U.S. tossed in the towel and devalued. Inflation helped to bring down the purchasing power of the dollar abroad and began to break up the fixed-exchange system.

Under a fixed-rate system, inflation tends to disturb the balance of payments—the record of a country's international transactions. If a major trading nation has an inflation problem, it tends to run a balance-of-payments deficit. And this deficit tends to be perpetuated under a fixed-exchange-rate system until the country reduces its domestic inflation or devalues its currency. A deficit can be viewed in terms of the main components of the total balance of payments—goods and services, capital, and reserve assets. A flow of goods and services in one direction is offset by a reverse flow of reserve assets or capital (currency, bank deposits, bonds, mortgages, and so on—expressed in terms of money); and so the overall accounts of trading partners always remain in balance. But while the overall balance of payments may be zero, the balance of goods and services being imported and exported ordinarily shows a



surplus or a deficit. Over a given period, one country imports more from its trading partners than they import from it. And when the goods-and-services account is out of balance, as it is normally, at least one of the other accounts has to be out of balance in the other direction to compensate.

For example, when the U.S. has inflation, it tends to import more goods, and it must export more inflated dollars to pay for them. This links changes in the money supply to changes in the balance of payments: imports rise and the outflow of dollars increases. Further, since deficits sometimes are regarded as a sign of economic weakness, a net outflow of payments for goods and services may depress the purchasing power of the dollar still more in the international trading community. U.S. monetary authorities cannot buy or sell marks indefinitely to support the dollar (maintain fixed exchange rates), but they can reduce inflation rates by holding down the growth rate of the money supply. Reducing inflation keeps dollars at home, brings the trade balance into line, and thereby helps stabilize rates of exchange. Thus the prescription these economists offer is self-discipline: hold down domestic prices. Here as elsewhere, the conventional wisdom is focused on the individual national economy.

**The Effect of Different Inflation Rates.** What happens when several countries with close trading ties undergo inflation at the same time? If their currencies inflate at the same rate or close to it, there's no problem in the exchange markets. But if the inflation rates differ very much, there has to be an adjustment. For example, if U.S. inflation were running at 10 percent and German inflation at 5 percent, Americans would buy more German goods. In doing so, they would bid up the price of marks (or bid down the price of dollars); the dollar would depreciate. Under a fixed-rate system, central banks would have to buy dollars or sell marks in order to maintain the old rate of exchange.

The usual response under present arrangements is to keep hands off exchange rates,

letting a currency appreciate or depreciate just as much or as little as the world market dictates. This way, inflation or deflation in one country is converted automatically into a decrease or an increase in the value of its currency. Under a fixed-rate system, authorities respond to a balance-of-payments surplus by selling domestic currency to keep it from appreciating, and this increases the domestic money supply. But floating rates break the bond that links a nation's monetary policy to its position in international trade; they eliminate long-term balance-of-payments surpluses and deficits and thus the increases and decreases in the money supply that tend to go with them. Monetary authorities no longer have to gear the money supply to balance-of-payments fluctuations—expanding it one day and contracting it the next. They can manage the nation's money with other things in mind, like the state of the domestic economy.

Further, floating rates cushion the impact of one country's internal monetary and fiscal policies on other countries. One country can avoid importing another's inflation, for instance, simply by letting its own currency appreciate. That way it doesn't have to create new money to absorb foreign currency inflows. Nor does any country have to hold large foreign currency reserves, since these reserves aren't needed to support the price of its own currency.

**Strong Inflationary Pressures Before the Float.** Inflation had begun to rise in many of the major trading nations before floating rates came in, and the upward pressure on prices still was building when the new system was adopted in 1973. Economists who hold the conventional view write off some post-1973 inflation as a legacy of fixed rates. Inflationary pressures weren't fully visible back then because, under fixed rates, devaluation lags behind changes in a currency's purchasing power: the system conceals inflationary developments instead of curbing them. When the system of fixed rates finally was dropped, inflationary pressures that had been



pent up for years suddenly broke loose and prices jumped dramatically. With fixed rates gone from the scene, the floating-rate system was left to take the rap. According to these economists, it was a bad rap. (Box 1 gives the conventional perspective on inflation and depreciation.)

since 1973 don't find it convincing. The dollar floated. Prices took off. There must be a connection, and they think they've found it: currency depreciation raises domestic prices. An example illustrates their point.

**Depreciation, Cars, and Television Sets.** Suppose the United States and Germany both

### BOX 1

## AN ILLUSTRATION OF THE CONVENTIONAL VIEW: INFLATION LEADS TO DEPRECIATION

1. Suppose the U. S. produces automobiles that sell for \$1000 and imports German automobiles that sell here at the same dollar price. The U.S. also produces washer repair services; but these are consumed domestically, at \$100 per service unit. At this stage the dollar-to-mark exchange ratio is \$1=5DM.

2. Now suppose that the U. S. inflation rate is 25 percent and the German rate is zero (prices are constant in Germany). Under these conditions, the prices of all U.S.-produced goods will go up—to \$1250 for each domestic automobile and \$125 for each unit of washer repair service. So far, the dollar price of German imports has held steady (German automobiles still cost \$1000) and it will remain steady until the exchange rate changes.

3. German automobiles are a good buy at \$1000—good enough to shift U.S. consumer demand away from the more expensive American-made cars. Now people that have dollars will buy marks, and they'll use marks to buy more German imports to sell in the U.S. As dollars chase marks, the exchange rate will drop from \$1=5DM to \$1=4DM—the percentage of dollar depreciation matching the percentage of U.S. price inflation (25 percent). At the same time, inflationary pressures at home will drive up the price of U. S. exports and make them less competitive in the international market. As a result, the demand for U.S. dollars will drop off, reinforcing the dollar's tendency to depreciate. In this last phase, depreciation will raise the dollar price of traded goods: the U.S. price of German automobiles will rise to \$1250. (It will not raise the price of nontraded goods; a unit of washer repair service still costs \$125. In short, the price of traded goods has risen against the price of nontraded goods.) Here's how it looks:

Item	Country of Origin	(1) Before Inflation & Depreciation	(2) After Inflation Only	(3) After Inflation & Depreciation
Automobile	U.S.	\$1000	\$1250	\$1250
(Traded)	Germany	\$1000	\$1000	\$1250
Repair Service	U.S.	\$100	\$125	\$125
(Nontraded)				

## A CHALLENGE TO THE CONVENTIONAL WISDOM: FLOATING RATES CAUSE INFLATION

The conventional picture's consistent, but some economists who've watched prices rise

produce cars and television sets for home consumption. Germany exports cars, and the U.S. exports television sets. If the dollar depreciates against the mark, it will take more dollars to buy a German car and fewer marks to buy an American television set. On this side



of the Atlantic, import prices go up.

What now? American producers may try to break into the established import market by designing lower priced cars. German producers may cut prices somewhat for fear of losing American customers. In this scenario, competition acts to restrain the rise in import prices. But as consumers buy more domestic cars, their price will drift toward the price on imports. The point is that U.S. prices are pushed up by dollar depreciation.

Meanwhile, television sets: their price starts inching up in the U.S. They are bargains

in Germany right after depreciation. But as German consumers buy more sets, American export producers gain confidence and boost their prices—for the export market and the domestic market too. American consumers end up paying more. Thus, depreciation brings a higher level of prices in the U.S.<sup>2</sup> (See Box 2.)

<sup>2</sup>Dollar depreciation raises the dollar prices of imports, exports, and their substitutes. At first price increases for these items distort the domestic relative price structure—the price of one item compared to another. But very

## BOX 2

### AN ILLUSTRATION OF THE ALTERNATIVE VIEW: DEPRECIATION LEADS TO INFLATION

1. Suppose the U. S. and Germany produce automobiles that sell here for \$1000. Both countries also produce television sets that sell in the U.S. for \$500. At this stage, the dollar-to-mark exchange rate is \$1=4DM and the price of television sets relative to automobiles is the same in both countries—1:2. So television sets sell for 2000DM in Germany, and automobiles for 4000DM.

2. Now suppose that the dollar depreciates against the mark and the rate falls to \$1=3DM. When this happens, the U.S. price of German goods goes up—to \$1333 for each imported automobile and \$667 for each television set. Generally it's assumed that this rate change affects prices only in the depreciating country. In fact, however, dollar depreciation can produce any of three outcomes: higher prices in the U.S.; lower prices in Germany; or a combination of these.

3. American goods have become better buys than German ones, and now U.S. consumers are more likely to buy American. American dealers, however, will let their domestic prices rise toward those of the German imports. And prices will be affected by arbitrage—buying cheap in one market (the U.S.) and selling dear in another market (Germany) to take advantage of price differences. Immediately after depreciation, U.S. merchants are able to undersell their counterparts both in Germany and in the United States, as Column (2) shows; but arbitrageurs will bid up the price of U.S. goods until they reach the price of German goods in Germany too. At the end of the process, nominal prices are higher in both countries. (Relative prices remain the same.) These are the steps:

Item	Country of Origin	(1) Before Depreciation	(2) After Depreciation	(3) After Arbitrage
Automobile (Traded)	U.S.	\$1000(=4000DM)	\$1000(=3000DM)	\$1333(=4000DM)
	Germany	\$1000(=4000DM)	\$1333(=4000DM)	\$1333(=4000DM)
Television Set (Traded)	U.S.	\$500(=2000DM)	\$500(=1500DM)	\$667(=2000DM)
	Germany	\$500(=2000DM)	\$667(=2000DM)	\$667(=2000DM)

(These three steps are distinguished from one another for analytical purposes even though, in fact, they may occur almost simultaneously and without actual transfer of goods.)



**The Ratchet Effect.** Prices move up more easily than they move down, contend the challengers. In the example of cars and television sets, prices rise in the U.S. instead of falling in Germany. Why does it work this way? Because national institutions, such as labor unions and trade associations, have an interest in pushing wages up and keeping them there. Since prices are prevented from dropping in the country whose currency appreciates, exchange-rate changes impact most heavily in the country that depreciates. Every movement of exchange rates pushes prices up somewhere without pushing them down anywhere, at least not very far. This jacking up of prices country by country is the ratchet effect. Its result, according to fixed-rate advocates, is global inflation.<sup>3</sup>

**Measuring the Impact of Depreciation.** Several economists have tried to figure out just how much recent U.S. inflation can be traced to dollar depreciation. In the *Wall Street Journal* for January 10, 1973, Arthur B. Laffer reviewed one calculation (not his own) which says that a 10-percent depreciation of the dollar would add 0.5 percent to domestic prices. This figure comes from multiplying the amount of the depreciation (10 percent) by the import share of the domestic market (5 percent); Laffer thinks it's too small. David I. Meiselman, in the September 13, 1974 issue, reached a similar result based on the observa-

tion that devaluation reduces the price of exports against imports. Then, because more goods must be exported to pay for the same volume of imports, fewer domestic goods are available in the U.S. market and their prices rise correspondingly—by 0.5 percent in this case. Other estimates suggest that the impact may be larger, ranging from .08 percent to 0.2 percent for every full percentage point of depreciation. (That would be from 0.8 percent to 2 percent of overall inflation for a 10-percent dollar depreciation.)

### AN ASSESSMENT: STICK WITH FLOATING RATES?

The fixed-rate advocates have marshalled evidence and developed a theory to support their position that currency depreciation through floating rates leads to global inflation. Yet it would be premature to abandon floating rates for the purpose of controlling inflation.

First, the fixed-raters' theory that floating rates bring on inflation has its weak spots. The explanation starts at the stage when currency units are gaining or losing purchasing power, and it goes on from there. But it never says *why* they appreciate or depreciate in the first place. Nor does it convincingly tell how higher prices of imports, exports, and their substitutes lead to shifts in aggregate demand and supply so that all domestic prices rise. And instead of recognizing that price increases brought about by temporary rate changes often are temporary themselves, the theory assumes that these increases are permanent. Perhaps worst of all, the fixed-raters use too simple a model to describe world trade—one that's constructed as if the world had only two trading countries and two goods. And this model doesn't show how goods that aren't traded internationally influence price trends.

Second, the evidence mustered by the fixed-raters also has its weak points. Much of the support for the view that floating rates led to world inflation likely results from the fact that inflationary pressures already existed in

quickly the prices of other goods should rise proportionately. This happens, assuming an integrated world market, because speculators exploit price differences to make a profit. They buy goods at a favorable relative price in one country and then unload them at a higher relative price elsewhere. But relative prices tend to approach equality, and the speculator ordinarily can't enjoy his position for very long. In short, arbitrage helps to transmit higher prices of imports and exports throughout the economy.

<sup>3</sup>Here, for example, are country A and country B. If A's currency depreciates by 10 percent in six months, prices will rise in A without falling appreciably in B. Now if country B's currency depreciates by 10 percent over the next six months, prices will rise in B but remain fairly constant in A. At the end of the year the exchange rate will have evened out but prices will be higher in both A and B.



many domestic economies before the shift to floating rates. This shift simply released these building pressures on prices, it didn't create them.

Last, going back to fixed rates now might worsen matters. Fixed rates make it harder to control a country's money supply, since they tend to tie changes in the money supply to changes in the balance of payments. What's more, central bankers often have been reluctant to support currency values even when they could; and under fixed rates, if they don't act to control currency values and prices, little else may. And certainly central bankers have not been successful in coordinating their domestic monetary policies to restrain inflation in the last decade.

The present floating-rate system hasn't been with us very long. Post-1973 inflation was very high at the start, but that may have been merely transitional. During the past year, world inflation has fallen off sharply, and most indications for the near future are promising. Three years is too short for a fair test of floating rates.

### MONETARY DISCIPLINE IS THE ISSUE

Floating rates make it easier for a country to control its own inflation, if it wants to, while fixed rates tend to spread the burden of inflation around. Since money flows freely between countries that have surpluses and

those that have deficits in their balance of payments, fixed rates soften the shocks of income gains and losses. They allow some adverse effects of domestic monetary and fiscal policies in one country to offset the effects of policies in another over the long term. Thus they distribute any one country's price difficulties among its trading partners. As one economist puts it: "Under flexible rates deflation or inflation is 'turned inwards' while under fixed rates deflation or inflation is 'exported' and the burden is . . . shifted to the outside world."<sup>4</sup> But many nations resent having to put up with the improvident policies of their trading partners.

Thus the basic issue is not prices and exchange rates. It's monetary self-control. If nations aren't willing to control price movements at home, any new fixed-rate system will go the way of the old one. And while it's going, nations that discipline themselves will suffer on account of those that don't; they won't be able to pursue independent monetary policies. Floating rates may not guarantee anything, but, at the moment, they appear to give those who want an end to inflation their best chance of getting it.

<sup>4</sup>Comment by Gottfried Haberler in *The Economics of Common Currencies*, ed. Harry Johnson and Alexander Swoboda (London: George Allen & Unwin, Ltd., 1973), p. 38.



## SUGGESTIONS FOR FURTHER READING

*The Economics of Common Currencies*, edited by Harry Johnson and Alexander Swoboda (London: George Allen & Unwin, Ltd., 1973), contains papers on this topic by Arthur B. Laffer ("Two Arguments for Fixed Rates") and Robert A. Mundell ("Uncommon Arguments for Common Currencies"). Comments by Gottfried Haberler and Bela Belassa are printed with the papers. For later comments see Jude Wanniski, "The Mundell-Laffer Hypothesis—A New View of the World Economy," *The Public Interest*, Spring 1975. Marina v. N. Whitman presents a careful discussion of the alternatives in "Global Monetarism and the Monetary Approach to the Balance of Payments," *Brookings Papers on Economic Activity* 3 (1975).



# A Fresh Look at the Municipal Bond Market

*By Rodney Johnson\**

“City Can’t Sell \$25 Million Bond” said a *Philadelphia Bulletin* headline last November 18—the day Philadelphia tried and failed to float a 20-year bond issue.

At the time, many observers blamed Philadelphia’s difficulty on spillover from New York’s fiscal problems. And surely the New York situation wasn’t any help to prospective bond issuers, if only because it alerted investors to financial problems in the nation’s major cities. One can argue, though, that New York’s crisis was as much a symptom of recent basic changes in the municipal bond market as it was a cause of present conditions in Philadelphia or elsewhere. Today’s market is different from the market of even a few years ago. What’s happened to it? Where is it now? And what can be done to improve it?

## CHANGING STRUCTURE OF THE MUNICIPAL MARKET

It’s not hard to figure out how the problems of the municipal bond market came to be linked to New York’s plight. The Urban Development Corporation, a New York State agency involved in municipal housing projects, was unable to redeem its moral obligation bonds that matured in February 1975. (These bonds were backed by an expression of intent that the legislature would raise funds to redeem them if ordinary revenues fell short, but the pledge was not legally binding.) This default captured the nation’s attention, but that attention soon shifted to the more pressing problems of New York City. Municipal borrowing rates rose steadily during the first three quarters of 1975. They dropped when President Ford announced his assistance plan. It appeared to many that the market was merely reacting to an immediate crisis. People observed that concern over New York was adding as much as a full per-

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\*The author received his Ph.D. from the State University of New York at Buffalo in 1970. He came to the Bank last year from the Department of Finance at Temple University.



centage point to the interest cost of some municipal borrowers and keeping others from issuing any bonds at all. As the nation focused its vision more and more narrowly on one series of events, it tended to lose sight of the basic underlying changes that have taken place on both the supply and demand sides of the \$220 billion municipal market.

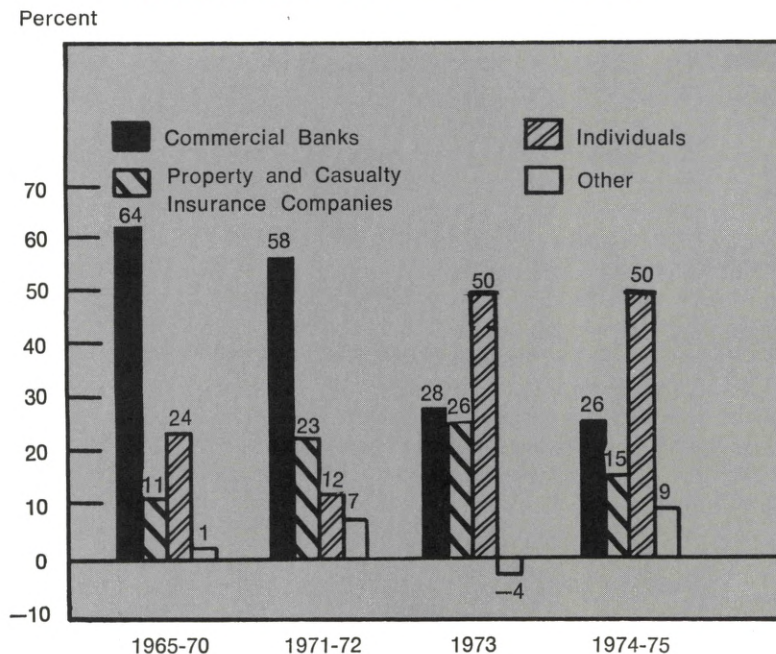
**Supply of Funds: Banks Lose Interest in Municipals.** Three major groups of investors supply funds to the municipal bond market: commercial banks, individuals, and property and casualty insurance companies. During the latter half of the 1960s, commercial banks bought nearly 65 percent, individuals roughly 25 percent, and property and casualty companies about 10 percent of net new issues of municipal securities. Other financial institutions and business corporations bought about 1 percent during this period. Banks bought

less during periods of high loan demand, while other investors, especially individuals, bought more.

A shift away from these relatively stable buying patterns began in 1971 and continued through the first half of the 1970s. During 1971-72, commercial bank purchases of municipal bonds tapered off as purchases by individuals dropped sharply. The banks reduced their participation in the market more dramatically in 1973, and this trend persisted through 1975. Property and casualty companies, after more than doubling their share of new municipal issues temporarily between 1971 and 1973, have returned to their lower level of investment. The institutions' overall withdrawal from the market during the past few years has left an unusually large share of new municipal securities for individual investors to absorb (see Chart 1).

CHART 1

## PURCHASERS OF NEW MUNICIPAL ISSUES

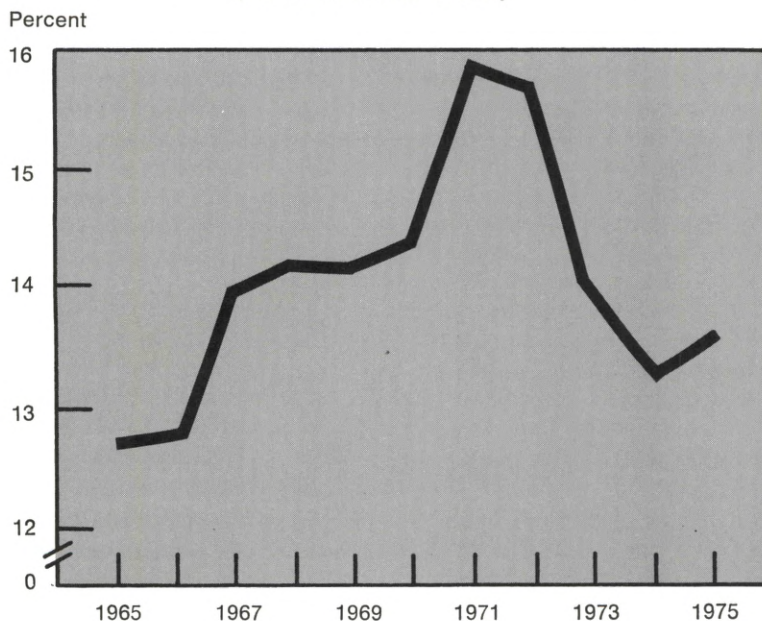


SOURCE: *The Bond Buyer*.



## CHART 2

## COMMERCIAL BANK USE OF MUNICIPAL BONDS

Municipal Obligations as a Percent of Total Loans and Securities  
(All Commercial Banks)

SOURCE: FDIC.

Commercial banks underwent the most pronounced shift in investment behavior. The ratio of municipal securities to the total of loans and securities increased from 12.7 percent for all commercial banks in 1965 to a peak of 15.9 percent in 1971. But banks became much less receptive to municipal issues during 1974 and 1975, when the ratio hovered around 13.5 percent (see Chart 2). (Each percentage point of total bank loans and investments is worth about \$7.5 billion.) And these figures conceal the fact that many big banks actually became net sellers of municipals during 1975. The drop-off would have been even sharper if most small banks hadn't stayed in the market.

Earlier declines in bank investment in municipals can be traced to heavy loan

demand, but this time it was different: loan demand was down during the 1974-75 recession. The cause in this case was a decline in taxable income at commercial banks. Banks buy municipal bonds, just as they buy other securities, in hopes of getting a good return on their investment. The interest rates on municipal bonds ordinarily are lower than the interest rates on other securities because investors are allowed to exclude interest on municipal bonds from taxable income.<sup>1</sup> This

<sup>1</sup>Exemption of interest on municipal securities from Federal income tax is based on the doctrine of reciprocal immunity, which protects the Federal government, the states, and their political subdivisions each from the others' taxing powers. Reciprocal immunity also exempts interest on Federal securities from state and local taxes, although state and local governments may tax interest



exemption is what attracts highly taxed investors to municipals. When investors find themselves in low tax brackets, their incentive to invest in tax-exempt securities diminishes. Then they're likely to prefer taxable securities with higher yields to tax-free securities with lower yields.<sup>2</sup>

Such a decline in banks' tax liabilities occurred over the period 1960-74, when the average tax rate for all commercial banks insured by the FDIC fell from 33.6 percent to 14.2 percent. (The average tax rate is the ratio of taxes paid to total income.) The low average rate in recent years reflects the fact that banks have substantial amounts of tax-sheltered income. Tax-free bonds pay better (after taxes) than higher yield taxable bonds as long as a bank's taxable income exceeds \$25 thousand, since anything in excess of that figure is taxed at 48 percent. Yet banks are wary of relying too heavily on tax-exempt investments. Doing so could give the appearance of excessive tax avoidance; and, besides that, tax-exempt investments that bring economic advantages when earnings are up may not pan out if earnings drop off.<sup>3</sup>

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paid on municipal bonds issued out of state. The precedent for tax exemption goes back to George Washington's administration, when Alexander Hamilton, then Secretary of the Treasury, argued that taxes levied on a young country's debt securities would damage its foreign credit. (Interest on Federal securities was exempt from Federal tax until 1941.) Since that time, the concept of tax exemption has withstood several challenges in Congress and in the Supreme Court.

<sup>2</sup>For example, the tax-exempt equivalent of a taxable 10-percent return would be 8 percent for investors in a 20-percent marginal tax bracket but 6 percent for investors in a 40-percent marginal tax bracket. It wouldn't pay investors in the lower tax bracket to buy tax-exempt bonds at 7 percent; but it would pay the higher bracket investors, just as long as the rate on municipals stayed above 6 percent.

<sup>3</sup>What are the causes of decline in banks' tax liabilities? One is their investment in municipal securities. Another is their activity in leasing operations—operations which generate sizable tax credits. Still another is their payment of taxes to foreign governments, which is offset by domestic tax credits. These latter two areas have shown substantial growth in recent years, especially at large banks. Further, banks have increased their loan loss

Large city banks, which had been heavy buyers of major city municipals, showed the sharpest reductions in taxable income through 1975. While most banks and municipal issuers have been affected by changing investment patterns, the impact has been heaviest on large banks and large municipalities. Tax-exempt holdings of the nation's largest banks declined from 10.7 percent of total assets at year-end 1969 to 5.7 percent of assets at year-end 1975 (see Chart 3). At the end of 1965, these large banks accounted for about half the tax-exempt holdings of all commercial banks. This proportion declined to 31 percent by the end of 1974.

**Property and Casualty Insurers Also Lose Interest.** Just like banks, property and casualty companies invest in municipals when they want to reduce their taxable income. Prior to 1971, the industry-wide level of investment in municipals had been remarkably stable, even while levels of investment varied sharply year by year from one company to another. The period 1972-73 saw the industry temporarily increase its share of the market. After 1973, however, the industry as a whole suffered unusually heavy and widespread underwriting losses—\$2.6 billion in 1974 and a record \$4.2 billion in 1975. Many companies suffered sizable losses also in their equity portfolios during the stock market decline that ended in December 1974. Since their taxable income was low already, they had little incentive to buy tax-free municipals. As a result, their net investment in municipals declined from about \$4 billion per year in 1972 and 1973 to slightly over \$2 billion per year in 1974 and 1975.

**Individuals Fill the Gap.** The volume of municipals purchased by individuals has grown as banks and insurance companies

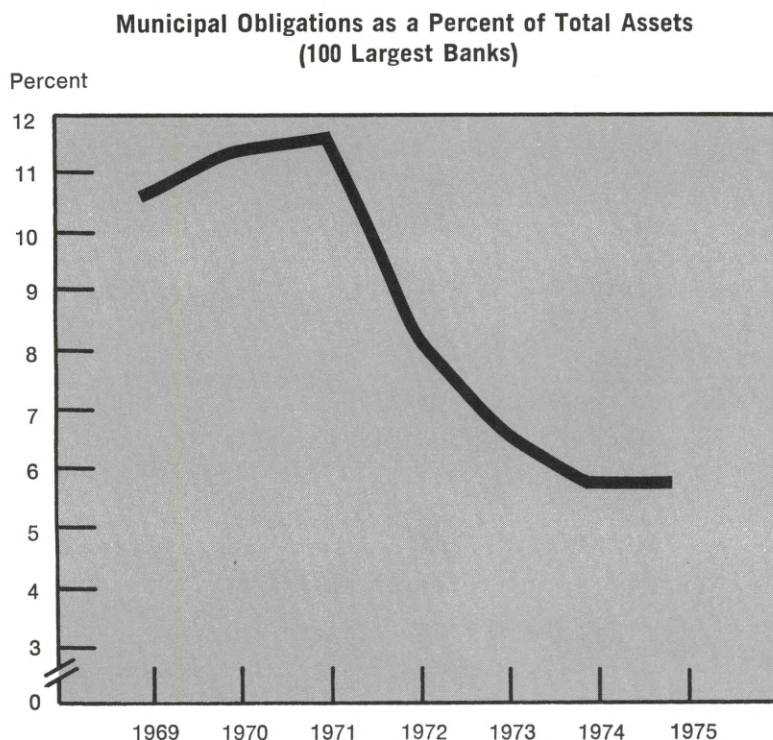
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reserves, especially for the airline, oil tanker, and real estate industries, as well as the bankrupt W. T. Grant Company and other firms. The combination of tax-exempt internal operating income with tax-deductible operating losses puts banks in a low liability position that makes municipals an unattractive investment.



CHART 3

## BIG BANKS UTILIZE PROPORTIONATELY FEWER MUNICIPAL BONDS

SOURCE: *The Bond Buyer*.

have bailed out of the tax-exempt market. The departure of these institutions, in the absence of an offsetting decrease in the municipalities' demand for funds, has pushed up the cost of borrowing by raising the market interest rate that municipal bond issuers have to pay (see Chart 4). To increase the number of individual investors who can invest rationally in municipal bonds, issuers have to increase the interest rate on tax-exempt securities relative to the interest rate on taxable securities far enough to compensate for the lower marginal Federal tax rate of the new investors (see Note 2). Luring individual investors becomes even harder as the stock market

picks up: when stock prices go one way, individual investment in municipal bonds usually goes the other.

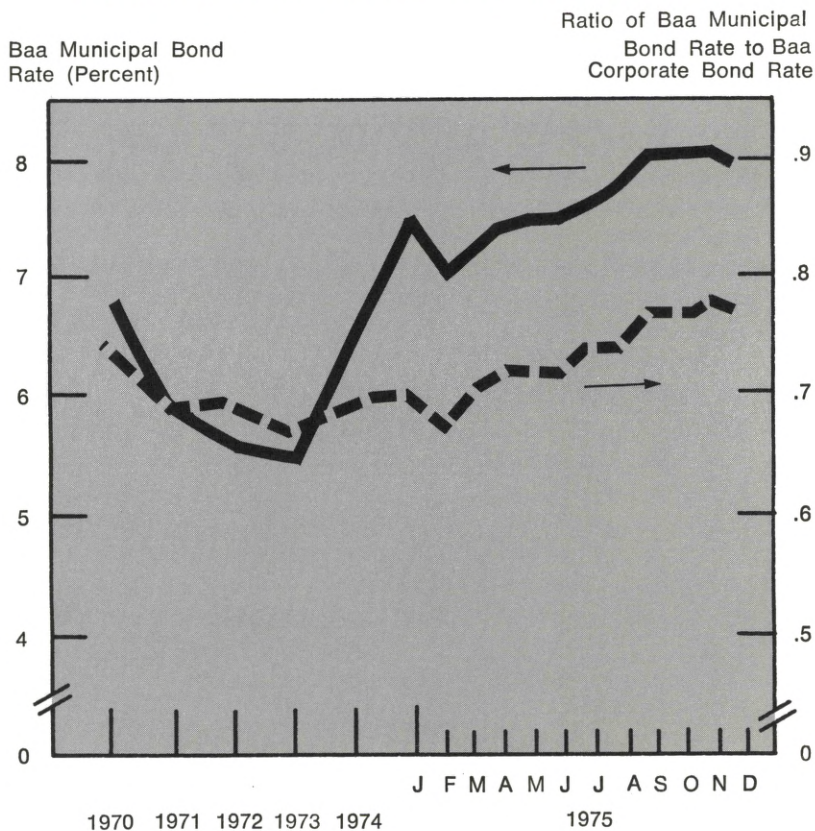
In short, on the supply side, banks and casualty companies have lost interest in the municipal bond market since 1974, and individuals have taken up most of the slack. As a result, municipal borrowers have had to raise their interest rates to attract the desired supply of funds.

**Demand for Funds: Interlopers Get Into the Municipal Market.** Even while the flow of funds into municipals from the traditional institutional investors has been shrinking, demand for funds has continued to grow.



CHART 4

## MUNICIPAL BORROWING BECOMES MORE EXPENSIVE



SOURCE: Board of Governors of the Federal Reserve System.

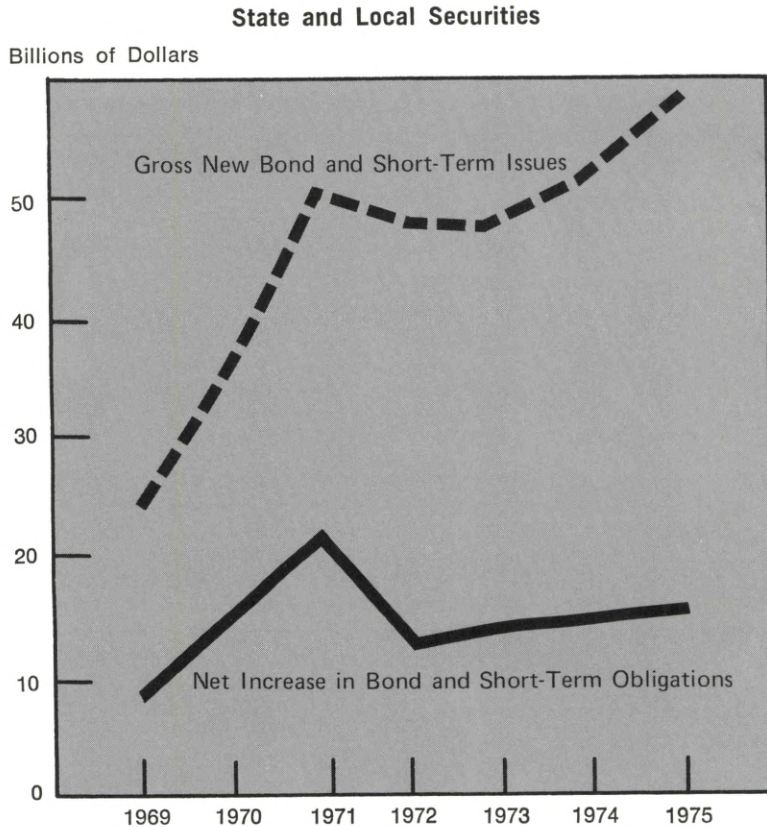
More and more borrowers want to use tax-exempt instruments to raise money. A dramatic increase in the use of this market occurred after 1970, and since that time gross new issues of municipal securities have averaged almost \$50 billion a year (see Chart 5). Slightly more than half this total consisted of short-term notes. Net increases in outstanding securities (after repayment of maturing obligations) have averaged around \$15 billion per year. According to Salomon Brothers' *Supply and Demand for Credit in 1976*, gross new issues totaled a record \$58 billion and net

new debt was about \$15.7 billion during 1975. The relatively modest net increase was caused by growth in the volume of maturing long-term bonds and a net decline in outstanding short-term notes. (The net increase in 1971 was \$21.7 billion from a gross increase of \$48 billion.)

The figures for 1975 are impressive for a market that some claimed was on the verge of collapse; but they don't tell the whole story. While the volume of offerings by traditional tax-exempt issuers has remained strong, several new participants recently have entered



## CHART 5

USE OF THE MUNICIPAL SECURITIES MARKET  
HAS GROWN STEADILY

SOURCE: Salomon Brothers.

the tax-exempt financing arena. Primary among these newcomers are hospital authorities and purchasers of pollution control equipment. Approximately thirty states have enacted legislation setting up authorities to issue tax-exempt hospital bonds. In 1968 and 1969, Federal legislation placed tight restrictions on most industrial development financing but expressly approved tax-exempt pollution control financing. There has been a tremendous growth in the issuance of these

special tax-exempt instruments during the past two years. Reported issues of hospital and pollution control bonds were about \$1 billion each during the first half of 1975. The exact volume of new hospital and pollution control financing is difficult to estimate because much of it is in the form of small unreported private placements. Estimates of total pollution control financing during 1975, including unreported private placements, however, are in the \$5 to \$8 billion range.



Thus, with old issuers staying in the market and new ones coming in, the demand for funds is stronger than ever.

Some observers, taking their bearings from New York's situation rather than from the market as a whole, were predicting a drop in net sales of municipals in 1976 to be followed by several years of recovery. But in fact, the decline they expected still hasn't shown up. Municipal financing for first quarter 1976 was higher than for first quarter last year. A study conducted at the Brookings Institution estimates that annual gross sales of new long-term bond issues will increase from \$22.4 billion in 1973 to \$33 billion in 1980.<sup>4</sup> Total outstanding long-term debt is projected to increase from \$167.3 billion in 1973 to \$275 billion in 1980. Gross offerings of short-term issues are projected to increase modestly from \$14.6 billion in 1973 to \$17 billion in 1980.

So far, then, the municipal bond market is behaving normally: the demand for funds has risen and the supply from traditional sources has dropped, so the price that issuers have to pay to borrow money has gone up.

### WHAT INVESTORS WANT TO KNOW

Of course, some municipal issuers have had trouble borrowing because of investor uncertainty and lack of information. There are no generally accepted information disclosure guidelines for municipal bond issuers. A corporation that intends to issue securities publicly is required by the Securities and Exchange Commission to file a registration statement, circulate a prospectus, and provide full disclosure of all information that might be useful to investors. But municipal issuers have been allowed to operate under a shroud of secrecy and have provided potential investors few details about investment risks.

Further, there are no generally accepted accounting and reporting principles for

municipal governments. Both revenues and expenditures may be reported on a cash, full accrual, or partial accrual basis. This means, for example, that a city government may budget actual cash expenditures against all or a part of anticipated but unreceived revenues. Moreover, unfunded pension fund commitments, often very large, do not have to be shown as long-term liabilities.

Market confidence slipped sharply when the public first learned about New York City's fiscal problems. Concern about the fundamental quality of municipal issues deepened when New York obtained a moratorium on bond redemption and the courts upheld the New York-New Jersey Port Authority's abrogation of an investor-protection clause in a transit bond issue. Some investors viewed these developments as threats to the security of municipal bonds and as signs of weakness in bondholders' claims. With payment of interest and principal being withheld behind a wall of voluntary bankruptcy or legislated moratorium, and with protective contract provisions being repealed, information about an issuer's financial condition and ability to repay became very important to investors.

They found that they couldn't rely on the bond ratings, which occasionally were out of step with actual conditions. New York City's bonds carried a Moody's A rating, for example, long after the city's problems made the news. Then, suddenly, the rating was lowered to Ba, and then again to Caa.<sup>5</sup> The ratings were out of step with the market in other cases, too. During the third quarter of 1975, Standard and Poor's gave New York's Battery Park Authority bonds an A rating while dealers were bidding less than 40 percent of par for 6¾-percent bonds maturing in 2014. This price made for a current return of almost 17 percent at a time when the average yield on A-rated municipals was about 7.5 percent. Whether it was right or

<sup>4</sup>Barry Bosworth, James S. Duesenberry, and Andrew S. Carron, *Capital Needs in the Seventies* (Washington: The Brookings Institution, 1975).

<sup>5</sup>The Moody's bond-rating system has nine major classifications. From highest to lowest they are Aaa, Aa, A, Baa, Ba, B, Caa, Ca, and C. A bond must have a rating of Baa or higher to be considered of investment quality.



not, the market undercut investor confidence in ratings.

Some experts urged investors to avoid general obligation bonds in favor of revenue bonds backed by projects with demonstrated revenue-producing ability. This showed how wary the market had become. General obligation issues traditionally have been the backbone of the municipal market, accounting for about \$140 billion of \$220 billion outstanding municipal debt. Investors preferred them to revenue issues on the grounds that the issuer had either a statutory or a constitutional obligation to levy and collect enough taxes to satisfy general obligation debt requirements. Recent events, such as the moratorium and the weakening of investor-protection clauses, have made this premise suspect.

But the market is responding to its disclosure problem. Large issuers are finding that buyers are tougher to deal with than they used to be. Bond buyers want more information and they're getting it, either directly or through brokers, rating services, and legal counsel—all of whom pass buyer pressure along to the bond issuers. Thus more information is forthcoming even without official guidelines, though it may be that legislative and regulatory initiatives are just around the corner.

The situation is different for small issuers, most of which are local governments. Even when they meet comprehensive disclosure standards, the cost of obtaining and evaluating the information they provide is too high for most investors. What's needed here is a disclosure substitute. One such substitute is municipal bond insurance that guarantees payment of principal and interest. A guarantee of payment eliminates the need for evaluating individual municipal issuers and thus provides an alternative to disclosure. Municipal bond insurance usually results in higher ratings for insured issues. It lowers the issuer's interest costs by lowering the risk of default and improving liquidity in the secondary market.

At the end of 1975, municipal bond insur-

ance was being offered by several carriers—the Federal government, four states (California, Michigan, Minnesota, and New Hampshire), and three private organizations. The Federal insurance applies just to certain housing bonds, and the state guarantees are restricted to health facilities bonds (California), general obligation school bonds (Michigan), and a few other issues. Only the private guarantee programs offer broad coverage, and these private programs are attracting the most attention.

The largest of the private programs is sponsored jointly by four major property and casualty insurance companies. Even with this substantial backing, however, insurance is not available for issues in excess of \$20 million. Thus, while small issuers may realize benefits from these insurance programs, they're not applicable to most large-city issues. And some small borrowers may find that it doesn't pay them to buy insurance; the cost is too high.

Information and insurance may close the bond market's credibility gap, but they won't curb all the market's ills. If the present trend continues, more and more issuers will try to sell more and more securities in the tax-free market. Commercial banks will continue to be big buyers, but they probably won't dominate the market as they have over the last ten or fifteen years. Property and casualty companies will keep on buying, too, but at what level remains uncertain. If, as looks likely, a substantial share of the market is left to individual investors, municipal issuers will have to compete against other investment opportunities that these individuals have, and that means, by historical standards, a high ratio of interest rates on municipal bonds to rates on taxable securities.

A high ratio of nontaxable to taxable rates is not bad in itself, but it does tend to frustrate the social objective of tax-free financing—a subsidy for state and local governments. The original aim of tax exemption was to prevent one governmental unit from taxing another unit's debt certificates (see Note 1). But the protection of a state's or a city's financing



ability now takes second place to the subsidy motive. At present, tax-exempt financing is used to subsidize social and economic programs as well as to meet operating and capital expenses. Though economists and policy analysts may wonder whether it's desirable to subsidize these programs at all, there's little doubt that subsidies will be provided. The real question is how to help the market provide them efficiently.

### HELPING THE MARKET ALONG

It's economically inefficient to have so many borrowers in the tax-free market because the interest they save through tax exemption is more than offset by tax revenues that the Federal government loses,<sup>6</sup> particu-

larly when tax-exempt yields are high relative to taxable yields (see Box). If tax-exempt financing were restricted to its originally intended beneficiaries, the demand for funds would drop, and so would borrowing costs for state and local governments. But while limiting participation in the tax-free market would be a step toward efficiency, political considerations probably rule it out: tax exemption gives legislators an expedient method of giving subsidies to pet causes.

As an alternative, some economists have proposed that municipal borrowers be given the option of raising money in the taxable securities market.<sup>7</sup> Under this arrangement,

<sup>6</sup>For example, see David J. and Attiat F. Ott, "The Tax Subsidy Through Exemption of State and Local Bond Interest," *The Economics of Federal Subsidy Programs*, Part 3, Joint Economic Committee of Congress, July 1972; and American Enterprise Institute for Public Policy Research, "Legislative Analysis: Proposed Alternatives to Tax-Exempt State and Local Bonds," Washington, February 14, 1973.

<sup>7</sup>Robert F. Heufner, *Taxable Alternatives to Municipal Bonds: An Analysis of the Issues*, Research Report No. 53, Federal Reserve Bank of Boston, 1972; Peter Fortune, "Tax-Exemption of State and Local Interest Payments: An Economic Analysis of the Issues and an Alternative," *New England Economic Review*, Federal Reserve Bank of Boston, May/June 1973, pp. 3-31; Harvey Galper and John Petersen, "An Analysis of Subsidy Plans to Support State and Local Borrowing," *National Tax Journal*, June 1971, pp. 205-234.

### BOX

### THE TAX EFFICIENCY PROBLEM

The Federal government's progressive tax system is designed to tax people at rates consistent with their ability to pay: wealthier individuals pay taxes at higher rates. However, tax-exempt municipal bonds offer investors a way to circumvent some of the progressivity of the tax.

Municipal bond yields (after taxes) are the same for all investors regardless of tax bracket. If the market interest rate for a top quality municipal bond is 8 percent while the yield on a taxable bond of equal risk is 10 percent, state and local government units are being forced to pay a rate that is so high it will attract investors whose tax bracket is a relatively low 20 percent. When this happens any investors who are in higher tax brackets receive a benefit at the expense of the progressive tax system.

Take the oversimplified example of two investors—one with enough income to be in a 50-percent Federal income tax bracket, the other, of more modest means, who pays only a 20-percent tax rate. Suppose each investor purchases a \$1000 *fully taxable* bond yielding 10 percent before taxes. His earnings and the Federal government's tax receipts are changed in the following way:

	20-Percent Bracket	50-Percent Bracket
Investment	\$1000	\$1000
Interest Received	100	100
Federal Taxes Due	20	50
Spendable Income After Taxes	80	50



If these same investors were to acquire 8-percent tax-exempt municipal securities instead of the fully taxed security just described, both their after-tax income and the government's tax receipts would be altered.

	20-Percent Bracket	50-percent Bracket
Investment	\$1000	\$1000
Interest Received	80	80
Federal Taxes Due	0	0
Spendable Income After Taxes	80	80

The more lightly taxed marginal investor receives the same dollar return (after taxes) from a tax-free municipal yielding 8 percent as he gets from a taxable bond yielding 10 percent. However, the municipality's interest subsidy is a constant \$20 no matter who buys the bond. The Federal government's tax revenues are lowered by that same \$20 in the case of the 20-percent taxpayer, but they are down by \$50 if the wealthier investor purchases the bond. The \$30 difference between the \$50 that the Federal government loses and the \$20 the local government gains is pocketed by the high-bracket investor in the form of a higher return. This tax subsidy from the Federal government to the municipal borrower is inefficient because the high-tax-bracket investor is now receiving a return that is higher than the minimum rate necessary to induce investment in taxable securities of the same risk and because this after-tax income is higher than the level regarded as appropriate given the progressivity of the tax system.

The efficiency of the subsidy might be improved by paying it directly to the local government borrower on the condition that his debt be fully taxable. With a 35-percent interest subsidy and a 10-percent interest rate, the following flows would occur:

	20-Percent Bracket	50-Percent Bracket
Investment	\$1000	\$1000
Interest Received	100	100
Federal Taxes Due	20	50
Spendable Income After Taxes	80	50
Net Cost to Borrower (100-35 subsidy)	65	65
Net Revenue to Federal Government	-15	+15

The Federal government's coffers would be left the same if both investors were attracted to these securities. However, the municipal borrower's costs would be reduced by lessening the tax benefit received by the higher tax bracket investor.\*

\*The net impact on the Federal government's revenues is shown in this example to be zero. Most studies have shown that the Federal government would also experience higher revenues since the bulk of investors (both corporate and private) in municipal bonds are in high tax brackets.

the Federal government would be involved on two ends: it would be collecting taxes from holders of securities; but it also would be making direct payments to issuers of securities. Most proposals advanced thus far have specified subsidies in the range of 30 to 40 percent of the rate at which taxable municipi-

pals would be issued, although it's not clear at this point what percentage would be best. In late March 1976, the House Ways and Means Committee approved a bill calling for a 35-percent subsidy, and the Administration favors a subsidy of only 30 percent. In the past, the subsidy provided by tax exemption has



averaged less than 30 percent: the average ratio of tax-exempt to taxable rates has been slightly greater than 70 percent.

If the subsidy rate were set at 30 percent, for example, the ratio of tax-free to taxable rates would stabilize around 0.7, depending on variation in supply and demand. Then, if the ratio were above 0.7, it would pay the issuer to sell taxable bonds, and if it were less, it would pay him to sell tax-free. In either case, the municipal authority would be able to compete with other borrowers.


The taxable option would thin out the tax-exempt securities market and thus accomplish the aim of limiting access to that market—lowering the demand for tax-exempt funds and the cost of funds to municipal issuers. It would correct for long-term shifts in the structure of the market. And it would make the tax exemption subsidy mechanism effective once again.

## CONCLUSION

The municipal bond market has had its share of problems in the last couple of years, but it has adjusted in a predictable way. This predictable adjustment has begun to frustrate the interest subsidy mechanism, however, as more and more borrowers have crowded in. With demand for funds up, the interest rates on nontaxable bonds have risen sharply relative to taxable bond rates. As the ratio of nontaxable to taxable rates rises, the benefit

of the interest subsidy shrinks. The subsidy mechanism becomes economically inefficient.

Further, as it now stands, tax exemption discriminates in favor of the large, high-tax-bracket investor. By buying municipals, he avoids paying tax at legislated levels on aggregate income. What interest costs municipalities save by selling tax-free bonds are more than offset by what the Federal government loses in income tax revenue that would have come in from buyers of taxable bonds.

If subsidy is now the main aim of tax exemption but tax exemption has become an inefficient way to deliver the subsidy, it's time to find another way. Municipalities will continue to issue bonds. Give them the option of issuing taxable bonds. They'll have to pay interest at a competitive rate, but they can do so if the Federal government pays them a direct subsidy to defray the extra cost. A taxable-option-with-subsidy system would thin out the tax-free market; many borrowers wouldn't bother with it. As demand for tax-free funds dropped, so would interest costs to borrowers. The tax inequity of favoring the high-bracket investor would be reduced, and the Federal Treasury would recover more tax revenue from the bond market. In fact, the saving in added tax dollars received would more than offset the outflow of direct subsidy payments to municipal borrowers who used the taxable option. 



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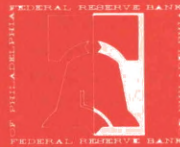
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