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Central Banking across the Atlantic:  
Another Dimension

Inventory Valuation Adjustments  
Greatly Influence Corporate Earnings

A Perspective on Stagflation

**FEDERAL RESERVE BANK of PHILADELPHIA**

# business review





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**On our cover:** Lemon Hill, located in Philadelphia's Fairmount Park, is a notable example of Federal period architecture. Its chief historical association is with Robert Morris, a signer of the Declaration of Independence and a financier of the American Revolution, who owned the original estate of 42 acres and occupied it up to 1799. The present mansion was built by the purchaser of the estate, Henry Pratt, a Philadelphia merchant and philanthropist. It was acquired by the city in 1844 and dedicated a public park in 1855, marking the commencement of Fairmount Park. Lemon Hill is now maintained by the Colonial Dames of America. (Photograph by Sandy Sholder.)

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# Central Banking Across the Atlantic: Another Dimension

By James M. O'Brien

*The Federal Reserve is the only major central bank in the world which has refused to assume a responsibility for allocating credit to socially important sectors of the economy. . . . It is high time we brought the Federal Reserve Board into the 20th century.*

—Senator William Proxmire

Fed watchers are continuously active and full of proposals. Some want to harness the System's responsibilities in monetary matters. Yet, others want it to assume greater responsibilities. A movement is currently underway in Congress and elsewhere to get the Fed to imitate some of its foreign counterparts by directing credit flows at low interest costs to "social priorities."<sup>1</sup>

<sup>1</sup>See statements of Senator William Proxmire and Professor Lester C. Thurow in U.S., Congress, Senate, Subcommittee on Financial Institutions of the Committee on

Scrutinizing the practices of West European central banks does evidence a concern for credit costs and allocation. Toward this end, these foreign central bankers have adopted a variety of tools that are largely outside the experience of Uncle Sam's financial policymakers. But rerouting credit to favored activities may be easier said than done. The West European experiences appear to raise more questions than they answer—especially those dealing with the costs of credit

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Banking, Housing and Urban Affairs, *Selective Credit Policies and Wage-Price Stabilization: Hearings on S. 1201 and H. R. 4246*, 92d Cong., 1st sess., 31 March, 1 and 7 April 1971, pp. 1–3, 145–49; of Representative Wright Patman in U.S., Congress, House, Committee on Banking and Currency, *Activities by Various Central Banks to Promote Economic and Social Welfare Programs: A Staff Report*, 91st Cong., 2d sess., December 1970; and of Representative Henry S. Reuss in U.S., Congress, House of Representatives, *Congressional Record*, 93d Cong., 2d sess., 1974, 96, H5920.



controls, their effectiveness, and their adaptability to the home economy.

### WEST EUROPEAN CENTRAL BANKS: A CONCERN FOR CREDIT ALLOCATION

Inflation, unemployment, balance of payments—these are the “traditional” concerns of central bankers. At the Federal Reserve they are part and parcel of its policy actions (see Box for discussion of Fed policy goals and tools). But for many central banks in Western Europe attempts to funnel credit to government-set priorities at relatively low interest costs represent still another impor-

tant policy dimension. Favored activities have generally been those industries believed important for economic growth and modernization, including the export industries and housing.<sup>2</sup>

<sup>2</sup>The countries whose central banking practices are reviewed are the United Kingdom, France, Italy, West Germany, Sweden, The Netherlands, and Belgium. This review was prepared using the material from a number of recently published studies on foreign central banking which are listed in the Bibliography. Among these, the most important source of reference is Donald Hodgman, *National Monetary Policies and International Monetary Cooperation* (Boston: Little, Brown, and Company, 1974).

## A LOOK AT THE FED

At least since the early 1950s, Fed money managers have directed much of their monetary policy efforts toward the ultimate goals of price stability and full employment of resources. Fed policymakers have also been mindful of keeping down sharp interest-rate fluctuations in the money markets and have traditionally given some weight to balance of payments considerations. But Fed watchers generally agree that the nation's balance of payments has taken second place in deference to domestic objectives, particularly the goal of full employment.

In pursuing its primary goals of an acceptable inflation rate and full employment, the Fed has relied mainly on those tools that change the outstanding volume of its own liabilities—cash reserves in the banking system and currency in the hands of the non-bank public. These consist of open market operations, lending to member banks, and changing reserve requirements that member banks must observe. The first of these is the Fed's most important monetary tool. Through open market operations it buys or sells Government securities in the marketplace. When securities are bought, the amount of cash in the banks or that held by the nonbank public is increased. This inflates the nation's money supply and stimulates the economy. The process is reversed when the Fed sells securities.

Lending cash to banks and setting the terms of the loans, while not insignificant, plays no more than a supportive role in monetary policy. The same has been true with respect to changes in reserve requirements of member banks.

Thus, the Fed's main policy *tools* have not included direct controls either generally on financial markets or specifically on the banking system. Nor have the Fed's policy *goals* generally included the allocation of credit. There have, however, been some exceptions: administering the regulation of consumer and mortgage credit during World War II and the Korean War, controlling down payments on stock purchases, setting interest-rate ceilings on bank deposits, and, in the '60s, using moral suasion to persuade bankers to curb loans to certain borrowers. But these exceptions remain just that and have not been an integral part of the Federal Reserve's financial policies.



Credit allocation constitutes a measurable part of the policy goals of the central banks in the United Kingdom, France, Italy, Sweden, and Belgium. The Bank of England, for example, makes some attempt to keep credit flowing to priorities such as shipbuilding, exports, “productive” investment and, more generally, to activities undertaken by the government. Across the Channel, the Banque de France has broadly aimed its financial policies toward modernization of the French economy. In doing so, it has sought to re-route credit flows as mandated by the government’s five-year plans.

Italy’s monetary authority, the Banca d’Italia, also undertakes policies designed to influence the allocation of credit among different uses. It backs investment projects that boost economic development and growth—particularly government or government-related investment. Sweden’s Riksbank, too, has traditionally supported government financing needs and, especially, homebuilding. Belgium, like France, Italy, and Sweden, is deeply committed to controlling the use of credit, and the Banque Nationale de Belgique plays a sizable role in the government’s credit allocation programs.

Central banks’ support for investment in “social priorities” has not been limited to direct attempts at rerouting credit flows. Endeavors to regulate interest rates are also made. For example, the Bank of England and the Banca d’Italia have sought to keep interest rates on government debt lower and more stable than free markets would permit. At least in part, this policy is designed to aid the respective governments in financing relatively large deficits resulting from sizable government spending programs. Moreover, these central banks and those in France, Sweden, and Belgium have attempted to control market rates on various types of private credit as well.<sup>3</sup>

<sup>3</sup>Beginning in the late 1960s and early 1970s some West European governments have had to abandon, at least partly, low-interest rate policies because of mounting balance-of-payments deficits.

All central banks in Western Europe pursue some credit allocation policies. However, those of The Netherlands and West Germany differ from their West European cousins in maintaining only a minimal amount of selective credit policies aimed at resource allocation. On this point, they are more like the Federal Reserve System. Both the Nederlandsche Bank and Bundesbank have primarily aimed their policies at inflation and balance of payments objectives.

### TOOLS FOR INFLUENCING CREDIT FLOWS AND INTEREST RATES

**Long-Term Credit Markets.** Among the countries striving to route credit flows, only Great Britain has refrained from interfering with the long-term credit markets (and only since 1959). Countries concerned with the placement of long-term funds—France, Italy, Belgium, and Sweden—have relied on two main devices. One is direct control over the floating of securities on the capital market. Those wishing to issue marketable securities must get permission for both the issue and its terms from a capital issues committee. The committee’s job is to provide a favorable market for securities issued by the government or by private firms to finance high-priority investments. In Sweden, for example, the business sector has been limited to about 20 percent of capital-market bond issues since 1960, while housing issues have accounted for about half the funds raised in the capital market. Italy goes even further. Besides controlling issues of capital market securities, private firms have had to pay a 38-percent tax on the interest cost of bond issues. Government and government-related bond issuers are both exempted from the tax and receive priority access to the capital market. Some central banks—for example, the Riksbank and the Banca d’Italia—serve as capital issues committees.

In France, Italy, Sweden, and Belgium, substantial control over credit institutions also helps to determine the direction of long-term credit. Control is exercised in various



ways. Important in each of these countries are public savings institutions—often including the post office. And in France, Italy, and Belgium there are nationalized savings banks. Also in France, both public and private savings banks have had to turn all funds over to a government institution. In all of these countries, and especially in Italy, there exist public or semi-public credit institutions that obtain funds from the (controlled) capital markets. These specialized institutions then provide various high-priority industries with medium- and long-term credit. National commissions, committees, or “agreements” coordinate the control of this institutional lending. It’s at this level that governors of the central banks often play important roles as supervisors, chairmen, or executive agents.

**Shorter-Term Credit Markets.** Monetary policies of central banks impinge most immediately on short-term credit or money markets, including commercial bank behavior. Because of this, credit allocation policies of West European central banks have been mainly directed at the short-term credit markets and the financial policies of commercial banks. To a large degree, the objective has been to coordinate the central bank’s stabilization policies with the government’s credit allocation goals.

For instance, at least until most recently, central bank loans to commercial banks have been an important tool for controlling money supplies in West European countries. In some of these countries—France, Belgium, Italy, and even West Germany—loan requests are honored partly on a basis of whether the commercial banks’ intended use of the funds satisfied a social priority. Bank lending ceilings have also been a major stabilization tool for most central banks in Western Europe (only West Germany has abstained from this form of policy). The ceilings are invoked during periods when the central banks try to slow the overall pace of economic activity. However, except for The Netherlands, they are imposed in a selective

manner, allowing loans for favored activities to be either exempted or to exceed the ceilings.

Special “reserve requirements” are another tool for stabilization and allocation purposes. These requirements specify that bankers must hold a “reserve” in the form of certain types of assets. Often expressed as a percent of the bankers’ deposit liabilities, the requirement has been used in France, Italy, the U.K., Belgium, and Sweden. The objective has not only been to restrict deposit and loan growth generally, but also to spur the demand for assets which finance investment in social priorities. For example, government securities in Great Britain and housing credit in Italy and Sweden have been assets which can help satisfy banks’ “reserve requirements.”

An even more direct control on credit is central bank review of individual loans by commercial banks. This practice has been quite important in France. Commercial banks report to the Banque de France all business loans and obtain from business clients dossiers on their financial status and use of funds. The Banque then uses this information in rationing its loans to commercial banks.

Attempts to control short-term interest rates—especially those on government debt—have been an integral part of these selective credit policies. Several methods are important for controlling short-term rates. Supplying cash reserves to the banking system and discount houses in amounts sufficient to provide a strong and steady demand for government securities is one procedure. This has been practiced in England, Italy, and Belgium.<sup>4</sup> Another method is the formal or informal tying of bank loan and deposit rates to the central bank’s discount rate. This has been used in Great Britain, France, Sweden, Belgium, and (more informally) in Italy.

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<sup>4</sup>The supplying of reserves or currency is effected through either central bank discounting or open market operations.



## IS THE FED WITH IT?

Because of a concern for domestic credit allocation and, specifically, the “uneven” incidence of tight-money policies, U.S. lawmakers have been considering the possible use of selective credit controls.<sup>5</sup> Ideally, these controls would help offset market-determined patterns of credit allocation and result in more funds flowing to government-set priorities. In attempting to make the Fed incorporate selective credit policies into its monetary policy procedures, advocates have touted their importance in the policy repertoires of foreign central banks. However, before making these foreign experiences the guiding light, inquiry should go beyond merely establishing that “everyone (or at least almost everyone) is doing it.” There are important issues still to be unraveled.

**At What Cost?** Few things in life are free, and critics of the West European experiences have argued that concern for credit allocation has been at the expense of other objectives. For one thing, it is suggested that credit allocation goals may have an inflationary bias. The argument is that efforts by a central bank to see that favored activities have “adequate” or low-cost financing could militate against those policies aimed at combating inflation. Tight-money policies designed to dampen excessive spending will tend to have “loopholes” in the form of priority-borrowing classifications. The flow of funds through these “escape hatches” can be expected to increase as financing elsewhere becomes more difficult. The authorities must be willing to tighten up on nonpriority credit categories, and even allow for some restriction on priority items when total spending is excessive. Otherwise, excessive monetary expansion and more inflation may result.

<sup>5</sup>Currently there are two bills in Congress which would have the Federal Reserve direct some form of selective credit controls: S.887 sponsored by Senator Richard S. Schweiker and H. R. 212 sponsored by Representative Henry S. Reuss.

Hard evidence concerning an inflation-social priorities tradeoff is difficult to come by. However, it has been argued that the relatively high rates of inflation in France, England, and Italy can be partly traced to difficulties in coordinating policies aimed at supporting high-priority borrowers with those employed to reduce inflation. For example, to guarantee ample financing for a gamut of favored activities, the Banque de France has at times had difficulty restricting the growth of its own liabilities to a level consistent with low inflation. In the U.K. and Italy, the continual obligation to support government debt markets is also suggested to have produced excessive monetary growth and inflation.<sup>6</sup>

An even more general criticism leveled at the West European experiences is the adverse effect of credit controls on the functioning of financial markets. One argument notes that controls tend to expand. An example sometimes cited is that of Great Britain. Initially, in the early '60s, clearing (commercial) banks were the only institutions subject to credit controls. As time wore on, the clearing banks began losing business to other uncontrolled and more competitive financial institutions. Moreover, the banks themselves began evading the controls by acquiring other unregulated lenders as subsidiaries. In response to these growing leakages, unregulated lending sources came under restriction in the late '60s.<sup>7</sup>

<sup>6</sup>For a discussion of the French experience with credit allocation policies and inflation, see Hodgman, op. cit., pp. 27–52; and Jacques Melitz, “Selective Credit Controls: The Lessons from French Experience,” Federal Reserve Bank of Philadelphia, unpublished, 1972. The reference to the Italian experience with inflation is from Hodgman, pp. 85–125. With respect to the U. K., see Hodgman, pp. 117–25; and his “British Techniques of Monetary Policy: A Critical Review,” *Journal of Money, Credit, and Banking* 3 (1972): 760–79; and Brian Griffiths, “Monetary Policy in the Float,” *The Banker*, July 1972, pp. 1023–25.

<sup>7</sup>See, for example, Hodgman, pp. 158–96 and Paul Davidson, “Discussion Paper,” David R. Croome and Harry G. Johnson, eds., *Money in Britain: 1959–69* (Lon-



However, this growth in the scope and complexity of regulation cuts down on the efficiency with which financial markets are able to channel savings into investment. For example, it is argued that where comprehensive systems of controls have evolved, lenders have found it difficult to cut the costs of financing or to attract customers in other ways. Moreover, the central banks have traditionally found it advantageous to support programs designed to minimize bank competition in order to maintain an environment conducive to credit control. Officially sanctioned banking cartels or cartel-like agreements have, at least until most recently, characterized the banking systems of Italy, France, Belgium, Sweden, and the U.K. It is through these cartel arrangements that the respective central banks have sought to make their controls effective.<sup>8</sup>

In fact, these defects have caused concern even among users of selective credit policies. In France, for instance, a high-level government commission has recommended significantly reducing the government's control over credit flows in order to make for a more competitive and efficient financial structure and to give the Banque de France more control of the money supply. And, in 1971, England embarked on a "credit reform" de-

signed to end bank credit ceilings and the Bank of England's responsibility for supporting the government securities market. The reform has also attempted to reduce the restrictive practices of clearing banks and, in the process, give competition a stronger hand in determining lending rates.<sup>9</sup> For many years the West German government had regulated deposit interest rates for reasons other than credit allocation. During 1965-67, the Bundesbank experimented with deposit and loan rate controls as a part of its monetary policy. The objective was to shield borrowers from exorbitant interest costs and credit institutions from "cutthroat" competition. However, in 1967 all interest rate controls were revoked with the official explanation that the controls were unworkable, biased against the smaller wealthholder, and damaging to the efficient working of financial markets.

**How Effective Are Credit Policies?** A second issue is the ability of the West European experiments to achieve their goals. How much resource reallocation toward priorities has actually been effected through selective credit policies? Or how low and stable have interest rates been kept? Up to now, few persons have bothered to ask these questions seriously. Moreover, a casual look at the numbers does not obviously indicate that those countries allocating credit through controls perform better than other countries in terms of economic growth, low interest rates, or inflation (see Table).

More detailed evidence is fragmentary and

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don: Oxford University Press, 1970), pp. 189-96. For a review of similar experiences with the few long-term selective credit and interest controls used in the U. S., see James M. O'Brien, "Interest Ban on Demand Deposits: Victim of the Profit Motive?" *Business Review of the Federal Reserve Bank of Philadelphia*, August 1972, pp. 13-19; and "Federal Regulation of Stock Market Credit: A Need for Reconsideration," *Business Review of the Federal Reserve Bank of Philadelphia*, July-August 1974, pp. 23-33.

<sup>8</sup>Hodgman, *National Monetary Policies and International Monetary Cooperation*; Brian Griffiths, "The Welfare Costs of the U. K. Clearing Banks Cartel," *Journal of Money, Credit, and Banking* 4 (1973): 61-77; David A. Alhadeff, *Competition and Controls in Banking: A Study of the Regulation of Banking in Italy, France, and England* (Berkeley and Los Angeles: University of California Press, 1968); *Activities by Various Central Banks to Promote Economic and Social Welfare Programs*.

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<sup>9</sup>However, in the case of Britain, one reviewer reported that since the credit reform of 1971, the authorities have greatly expanded the money supply in the hope of furthering economic growth. The inflationary pressures of excess monetary growth and an accompanying large deficit which the monetary authorities were called on to finance has helped to produce a good measure of dissatisfaction with the new system. It is suggested that, while the old system of controls may not be reinstated, other forms of controls may be deemed desirable in the future. See Marcus Miller, "Discussion," *Credit Allocation Techniques and Monetary Policy* (Federal Reserve Bank of Boston, 1973), pp. 173-77.



## COUNTRIES ALLOCATING CREDIT THROUGH CONTROLS DO NOT GENERALLY OUTPERFORM OTHER COUNTRIES IN TERMS OF ECONOMIC GROWTH, INFLATION, OR INTEREST RATES (1961–70)

Countries Substantially Using Credit Controls For Allocative Purposes	Growth in Output*	Inflation Rate*	Long-Term Government Interest Rate**
Belgium	4.9	3.2	6.38
France	5.9	4.2	5.80
Italy	5.3	4.2	6.71
Sweden	6.3	4.1	6.03
United Kingdom	2.7	4.1	6.97
<b>Other Countries</b>			
The Netherlands	5.3	4.5	5.57
West Germany	4.8	2.8	6.78
United States	4.2	2.9	4.77

\*Federal Reserve Bank of St. Louis, *Rates of Change in Economic Data for Ten Industrial Countries*, October 1974; and Organization for Economic Cooperation and Development, *Main Economic Indicators, 1955–71*. Figures presented are annual average rates of change.

\*\*International Monetary Fund, *International Financial Statistics*, February 1974.

inconclusive. For example, a recent study of bank lending ceilings in Great Britain concluded that although the ceilings effectively reduced clearing bank lending, they also produced continuous adjustments on the part of borrowers "involving the sale of marketable securities, encashment of liquid deposits and substitution for bank loans of both debt and equity instruments."<sup>10</sup> Credit controls in Sweden, it's been argued, have shifted the burden of "tight credit" from housing and government to business (see Chart 1). But the effects of these controls on

the mix of real investment appear less clear (Chart 2). Even over the longer haul, the proportion of investment devoted to housing in Sweden appears to be no greater than that in the U. S. This is despite the much greater emphasis that Swedish credit allocation programs are supposed to give to housing than the freer credit markets in the U. S.<sup>11</sup>

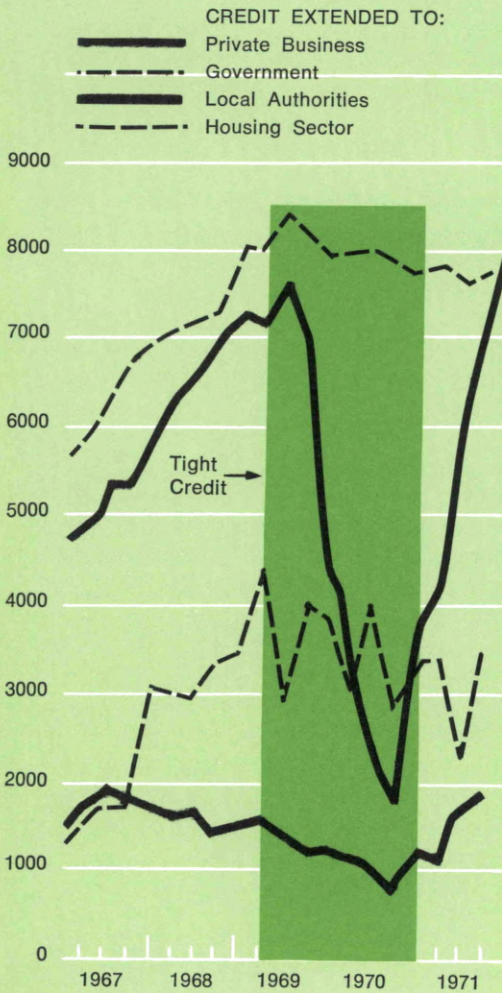
<sup>10</sup>Alan Pankratz, "Effects of Direct Lending Controls: An Empirical Case Study of the United Kingdom," *Journal of Economics and Business* 27 (1974): 49–59.

<sup>11</sup>Over the period 1960–70, both countries devoted about a quarter of real investment to housing. Prior to 1960 the U. S. appears to have invested a somewhat higher proportion in housing than Sweden. For a description of housing credit programs in Sweden, see U.S., Congress, House of Representatives, Committee on Banking and Currency, *Foreign Experience with Monetary Policies to Promote Economic and Social Priority Programs: Staff Report*, 92d Cong., 2d sess., May 1972, pp. 18, 25–37.

CHART 1

**BUSINESS BEARS BURDEN OF TIGHT CREDIT IN SWEDEN . . .**

Kronors (Millions)

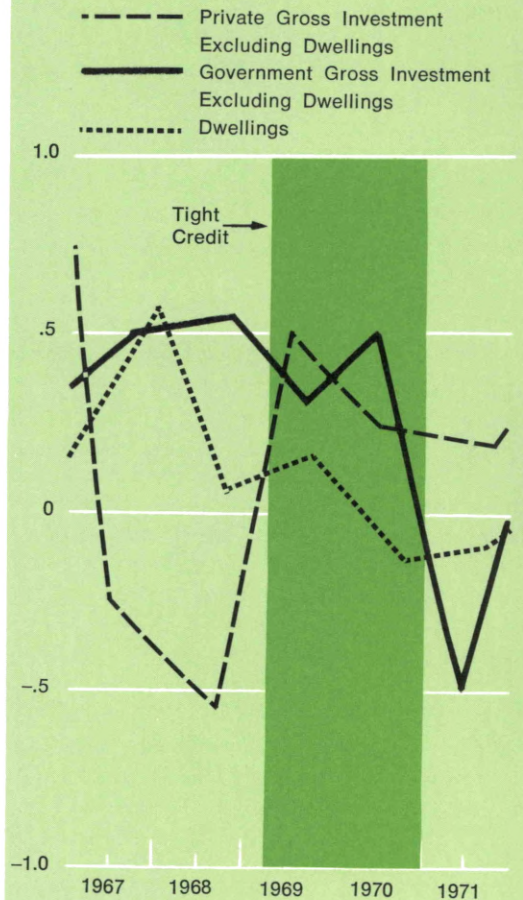


SOURCE: Lund Lars Jonung, "Swedish Central Bank Policy in the Postwar Period: Some Comments," *Kredit und Kapital* 3 (1973): 323-43.

CHART 2

**BUT REAL INVESTMENT EFFECTS ARE LESS TELLING.**

Percent of Gross National Product



SOURCE: Assar Linbeck, "Some Fiscal and Monetary Policy Experiments in Sweden," *Credit Allocation Techniques and Monetary Policy* (Federal Reserve Bank of Boston, 1973), p. 191. Numbers expressed as yearly changes as percent of GNP are constant (1959) prices.



All of this is not to say that credit control programs have had no effect on the reallocation of credit toward national priorities and at relatively low interest costs. Rather, that how much effect they have had on resource allocation is largely unknown and deserving of more study.

**How Appropriate Are the West European Experiences?** Several characteristics of the West European economic and political systems are apt to make effective credit controls more feasible than they would be in the U. S. One is the concentrated and cartelized banking structures of Western Europe. Given the currently more competitive environment of American banking, the spirit of cooperation which has existed between West European bankers and their respective central banks is not likely to be seen here. American bankers are likely to be under more competitive pressure to evade the regulations.

Also important is the much greater degree of government economic planning in Western Europe than in the U. S. The credit allocation responsibilities of West European central banks are as much a part of this story as a story in themselves. And if the central banks achieve some degree of success in influencing the allocation of credit, it could depend significantly on the existence of these other controls. Thus, in attempting to shape credit allocation through controls on the banking system (as has been proposed for the Federal Reserve), West European central banks have generally had the support of controls on

other financial institutions and the capital markets.


## A SUMMING UP

Unlike the Federal Reserve System, many central banks of Western Europe try to influence directly the allocation of credit and its relative cost, especially bank lending. The objective has been to support investment in "productive" activities and others deemed to be of high priority by their respective governments. Various devices have been employed such as direct control of bank lending and interest rates, and special forms of reserve requirements. The tools have generally been used for both credit allocation and economic stabilization purposes.

Now, some U. S. officials want the Fed to copy its foreign counterparts and become actively involved in credit allocation. But there are important issues still outstanding. For one thing, the foreign experiences have not been without costs—particularly the stunting of competition and the further expansion of controls. Also, very little is known concerning the effectiveness of the foreign credit allocation programs. Finally, experiments with credit controls in the United States are apt to have even tougher sledding than have those in Western Europe. American financial markets are currently more highly developed, less restricted, and more competitive than their foreign counterparts. It may be wise to take a more searching look before we leap.



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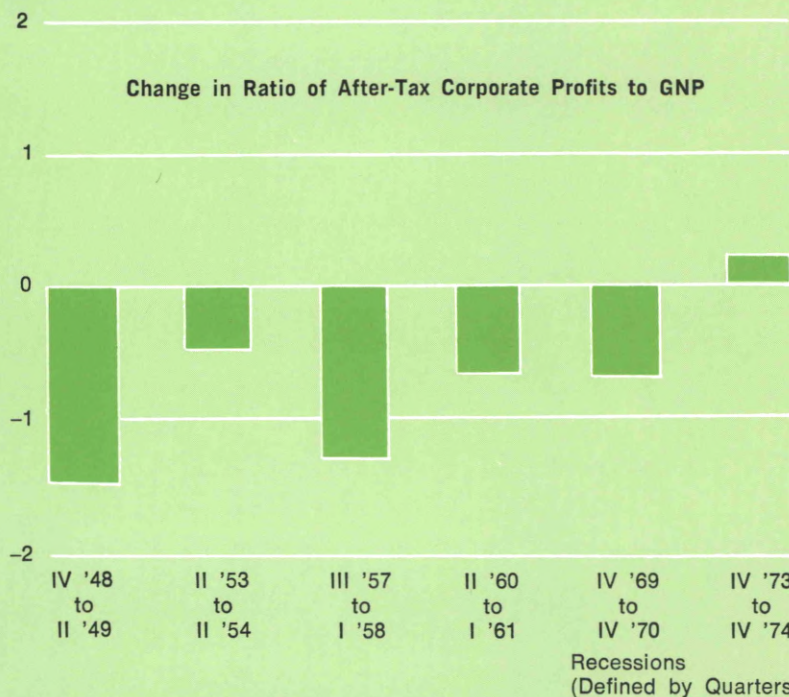
# Inventory Valuation Adjustments Greatly Influence Corporate Earnings

By Robert Christian, Jr.

CHART 1

HISTORICALLY, THE AFTER-TAX CORPORATE PROFIT SHARE OF GNP FALLS DURING RECESSIONARY PERIODS. HOWEVER, THE CURRENT DOWNTURN APPEARS TO BE BUCKING THIS TREND . . .

Percentage Points

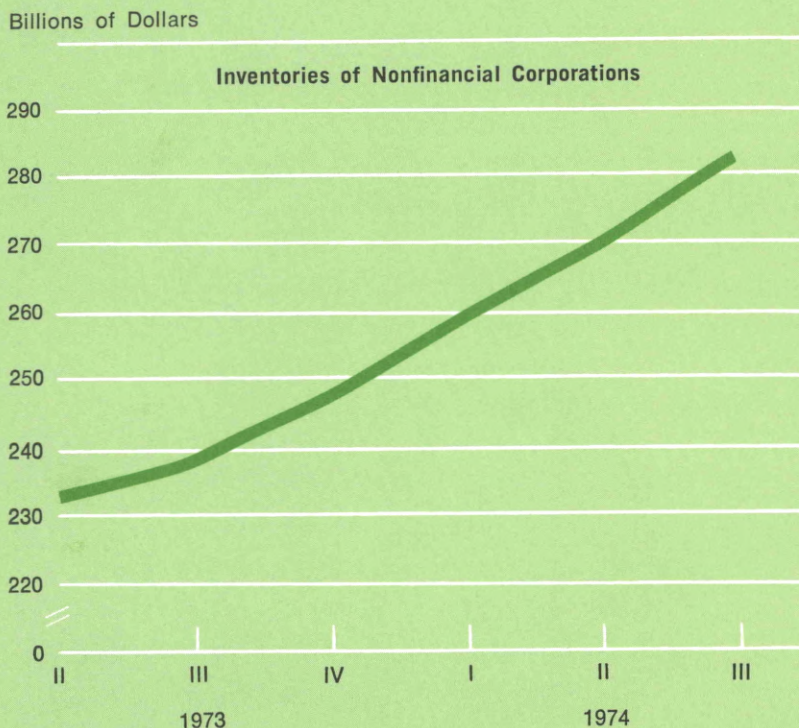


SOURCE: U. S. Department of Commerce.



**CHART 2**

**THIS SEEMING CONTRADICTION IS THE RESULT OF THE DRAMATIC INCREASES THAT INFLATION HAS PRODUCED IN THE VALUE OF BUSINESS INVENTORIES.**

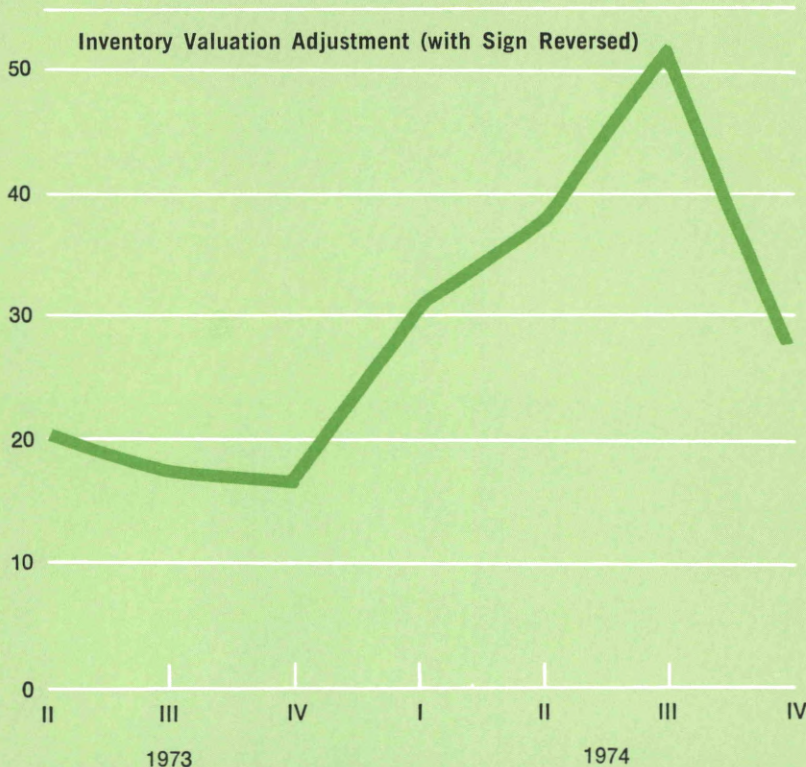


SOURCE: Securities and Exchange Commission.

**CHART 3**

**TO ANALYZE BETTER THE OPERATING PROFITABILITY OF U.S. CORPORATIONS AN ADJUSTMENT MUST BE MADE TO REFLECT THE IMPACT THAT INFLATION-CAUSED INVENTORY PROFITS HAVE HAD ON OVERALL CORPORATE PROFITS.\***

Billions of Dollars (Seasonally Adjusted at Annual Rates)



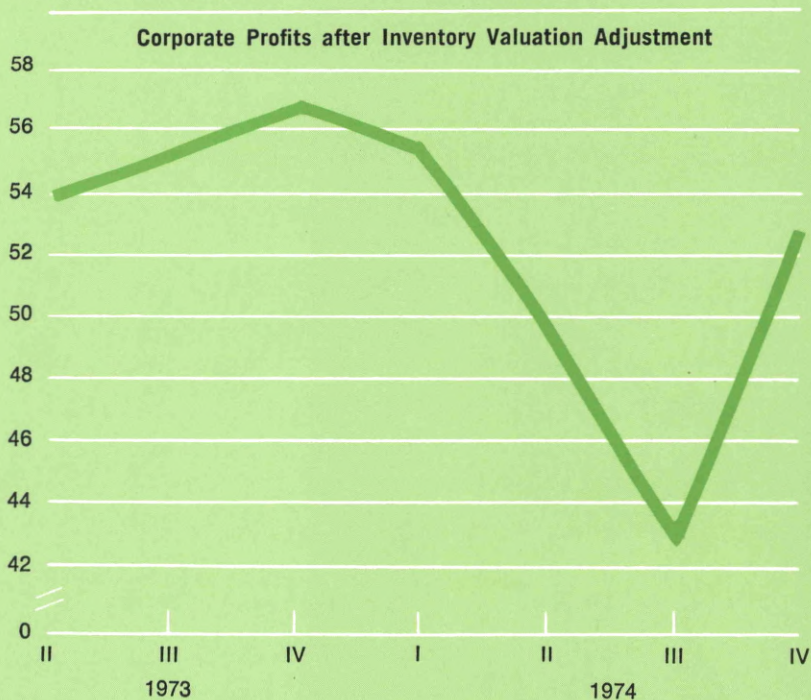
\* When prices are rising, firms that use the cost of the oldest and cheapest units of their inventory as the basis for their production expenses (FIFO) will systematically show more profit than those using current replacement costs to calculate their operating profits (LIFO).



CHART 4

WHEN THIS VALUATION ADJUSTMENT IS ADDED TO AFTER-TAX CORPORATE EARNINGS, IT BECOMES CLEAR THAT PROFITS HAVE DECLINED SIGNIFICANTLY.

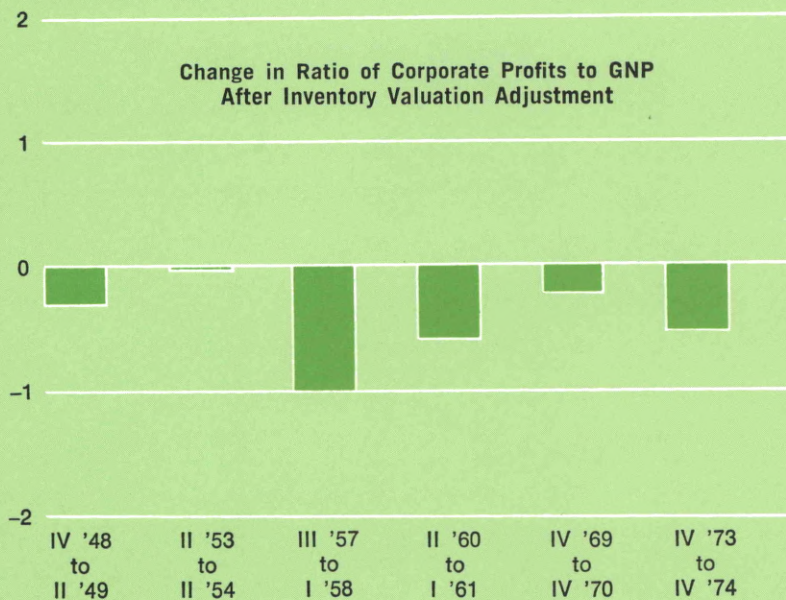
Billions of Dollars (Seasonally Adjusted at Annual Rates)



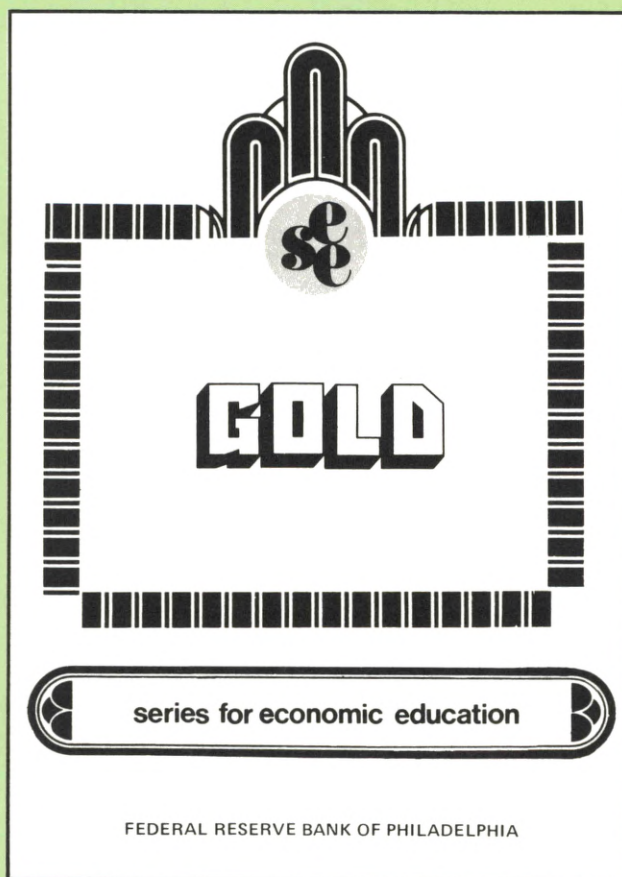
**CHART 5**

**AND AS A SHARE OF GNP, INVENTORY-ADJUSTED CORPORATE PROFITS HAVE REACTED SIMILARLY IN PERIODS OF ECONOMIC SLOWDOWN.**

Percentage Points







On December 31, 1974, Americans were permitted to buy and sell gold for the first time in some 40 years. Since then questions have been raised about the once-hallowed, almighty metal's worth and importance. For example, has its status in the United States and in the international monetary system changed? If so, in what manner? A pamphlet recently produced by the Philadelphia Fed's Department of Public Information considers the role of gold—past, present, future.

Copies are available free of charge. Please address all requests to Public Services, Federal Reserve Bank of Philadelphia, Philadelphia, PA 19105.

# A Perspective On Stagflation

By John J. Seater

Downgrading economics has become chic. The profession is in a shambles, many claim, because the “old-time religion” doesn’t work anymore, and no new Moses is on the horizon to lead us from the economic wilderness.

Conventional economic wisdom holds that inflation and unemployment aren’t supposed to increase at the same time. We’re supposed to face a tradeoff—more of one and less of the other. Yet with both unemployment and inflation rising in 1974, there appeared to be no tradeoff, only the worst of both worlds. This phenomenon—dubbed stagflation—is frustrating everyone. We’re stuck with stagflation and economists have trouble explaining it, let alone knowing how to cure it.

An increasingly popular school of thought, however, holds that stagflation is neither inexplicable nor uncontrollable. This band of economists argues that stagflation is based on the old standbys of rational economic behavior—supply and demand, and mone-

tary and fiscal policies. Hence, its cure must have the same foundations.

## THE TYPES OF UNEMPLOYMENT

Getting to the whys and wherefores of stagflation requires an understanding of the three types of unemployment.

Even in the best of times, there are the voluntarily unemployed—people who have just entered the labor force or have quit their jobs to look for something better. These people, who choose to pass up low-paying or distasteful jobs in order to search for higher-paying or more enjoyable jobs, are said to be *frictionally unemployed*.

Another group of unemployed consists of those who have been fired because of structural changes in the economy. For example, consumers may decide to buy fewer books and more TV sets. This means that some editors will be thrown out of work, and more



electrical workers will be hired. Such structural changes occur continually, and it takes time for the newly unemployed to find jobs. These people are the *structurally unemployed*.

When the number of frictionally and structurally unemployed equals the number of job vacancies in the economy, unemployment can be said to be at its "natural rate," and the economy can be said to be at full employment.<sup>1</sup> There are enough jobs around for the unemployed; the unemployed just don't fit the jobs. By this definition, full employment does not mean no unemployment; it means no unemployment *in excess of (or below!)* the natural rate.

A third type of unemployment, which we can call *excess unemployment*, arises when the total demand for the economy's goods and services (aggregate demand) falls below the sum of everything business wishes to produce (aggregate supply). For example, consumers decide to save more and spend less; in particular, suppose they decide to buy fewer automobiles. Then automobile producers, finding their cars unsold, will lay off workers. Unlike structural unemployment, excess unemployment is not matched by increases in vacancies because demand is not merely shifting from one market to another; it is decreasing in the total of all markets. So when aggregate demand falls below aggregate supply, the number of unemployed exceeds the number of vacancies.

Government can eliminate excess unemployment by applying monetary and fiscal policies that stimulate total demand—increasing the money supply, increasing Government spending, and reducing taxes. As demand increases, producers hire idle labor. However, once unemployment reaches its natural rate, the Federal Government cannot permanently reduce it further

with just monetary and fiscal policies. When this is attempted, unemployment dips temporarily, then bounces back to its natural rate. The rate of inflation, however, rises to a new level and stays there.

## HISTORICAL PERSPECTIVE

What is the current natural rate of unemployment for the U. S. economy? No one knows for sure. Although the data on unemployment are very good, data on vacancies are not, partly because they have been collected only for about five years. Meaningful comparisons of unemployment and vacancies are thus impossible. One way around the problem, though, is to estimate the natural rate of unemployment by finding the average rate of unemployment over a long period. The idea is that cyclical fluctuations will cancel out over a long period so that the average rate will approximate the natural rate. For the period 1900–29, the average rate of unemployment is 4.8 percent. Remarkably, the average rate for the period 1948–73 is also 4.8 percent.<sup>2</sup> For the sake of argument, then, let's assume the natural rate of unemployment is 4.8 percent.<sup>3</sup>

In 1970, about when the current criticisms of economics and talk of stagflation began, the unemployment rate averaged 4.9 percent, almost equal to the assumed natural

<sup>2</sup>The World War I, Great Depression, and World War II years have been ignored because they were clearly unusual periods.

<sup>3</sup>Although there is currently no consensus on the actual value of the natural rate of unemployment, most estimates place it between 4.5 and 5.5 percent. The present explanation of stagflation is compatible with any of these values. Some people who believe that 5 percent unemployment is too high might favor a reduction in the natural rate of unemployment itself. Economists do not fully understand how the natural rate is determined, but many believe that the natural rate cannot be changed by countercyclical stabilization policies—that is, by monetary and fiscal policies. Apparently, other kinds of policies, such as education, retraining, and information programs, would be needed.

<sup>1</sup>Full employment often is defined as that state in which all expectations are realized. The two definitions seem to be equivalent, however.

rate, but up from the low 3.5 percent rate of 1969. In 1974 the average unemployment rate was 5.6 percent. However, since 1913 there have been nine years outside the Great Depression which had unemployment rates higher than 1974's rate. (These years are listed in Table 1.)

Inflation last year proceeded at a rate of

**TABLE 1**  
**UNEMPLOYMENT HAS EXCEEDED 1974'S RATE NINE TIMES SINCE 1913**

Year	Annual Average Rate of Unemployment*
1914	8.0%
1915	9.7
1921	11.9
1922	7.6
1949	5.9
1958	6.8
1961	6.7
1963	5.7
1971	5.9
1974	5.6

\*Unemployment comprises roughly those people not working but looking for a job.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics.

12.2 percent. This is unusually high, but it has been exceeded four times since 1913, as shown in Table 2. The extraordinary development of 1974 was not so much that the rates of unemployment and inflation were high, but rather that they rose simultaneously. Actually, this situation was not unprecedented; it has occurred six times before in this century. Table 3 lists the pairs of years in which both the rate of unemployment and of inflation rose from one year to the next. What does seem to be unprecedented in 1974,

**TABLE 2**  
**1974'S RATE OF INFLATION HAS BEEN EXCEEDED FOUR TIMES SINCE 1913**

Year	Annual Rate of Inflation (December to December)
1916	18.7%
1917	20.7
1918	14.6
1946	18.1
1974	12.2

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics.

**TABLE 3**  
**STAGFLATION HAS OCCURRED BEFORE**

Year	Annual Rate of Inflation	Annual Average Rate of Unemployment
1914	0.9%	8.0%
1915	2.1	9.7
1927	- 1.9	4.1
1928	- 1.1	4.4
1932	-10.3	23.6
1933	0.5	24.9
1945	2.2	1.9
1946	18.1	3.9
1956	2.9	4.1
1957	3.0	4.3
1962	1.2	5.5
1963	1.6	5.7
1973	8.8	4.9
1974	12.2	5.6

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics.



though, are the magnitudes by which these rates rose. Only 1946 and perhaps 1915 offer anything comparable.

### AN EXPLANATION OF STAGFLATION

One explanation of stagflation that has gained favor among economists, though it is not universally accepted, holds that there are two parts to the stagflation story—unemployment and its relation to what business wants to produce (or, aggregate supply), and inflation expectations and their relation to what people want to buy (or, aggregate demand).

**Unemployment.** Let's begin with unemployment. Unemployment rises above its natural rate when, because of some shock to the economy, aggregate supply exceeds aggregate demand. "Too much" is being produced or, as economists say, there is "excess aggregate supply." Whenever producers face excess aggregate supply, they lay off workers and curtail production, thereby tending to eliminate the oversupply of goods. However, the laid-off workers, suddenly finding their incomes reduced, curtail their spending. These cutbacks in turn reduce aggregate demand, so that producers still find they are producing "too much," which sets off another round of layoffs. Eventually, because of what economists call the multiplier (see the Appendix), this process stops with the economy left in a state of lower output and higher unemployment.<sup>4</sup> Recession has set in.

During or after a recession, prices eventually fall, or at least rise more slowly than before it. For example, in 1929, prices fell by 2.5 percent, in 1930 by 8.8, in 1931 by 10.3, and in 1954 by 0.5. In 1958, 1961, and 1971—all terminal years of recessions—prices did not

fall but their rate of increase dropped considerably.<sup>5</sup>

That prices may rise rather than fall during a recession—as in 1958, 1961, 1971, and 1974—needs explanation. Indeed, these bouts of stagflation seem to contradict basic economic theory. Recessions are characterized by too much production relative to demand, and the textbook response to excess supply is a drop in prices. So, how can prices rise during a recession? The answer to this question seems to lie in people's *expectations* about future prices.

**Expectations.** People learn from experience. If they observe that prices have been rising at a constant rate for a long time they will come to believe that prices will continue to rise at that rate in the future—in other words, people will anticipate the inflation. Let's see how this relates to their economic behavior. Let's suppose that people change their expectations so that they suddenly anticipate higher inflation in the future. For example, suppose people were previously anticipating no inflation but now become convinced that a 10-percent price rise is more likely. They then figure their money will be worth less in the future than it is today. Since it will buy more today than it will tomorrow, they are better off spending their money now. If the economy is near full employment, this attempt to accelerate buying will jack up demand and drive up prices today. Changes in expectations about *future* prices therefore affect *today's* prices. (See Box 1 for a more detailed discussion of the interaction between expected and actual price behavior.)

At the outset of inflation, however, people are unlikely to change their outlook for future price increases very rapidly. The reason is they cannot be sure at first that the price changes are permanent rather than temporary. If inflation persists, however, people will build more and more of it into their expectations, and in time they will com-

<sup>4</sup>This state will not last forever, according to economic theory. Eventually, prices and wages will fall. The falling prices lead to an increase in aggregate demand, and the falling wages lead to an increase in employment. Ultimately, the economy returns to full employment.

<sup>5</sup>In 1971, the drop occurred even before wage-price controls were instituted.



pletely adjust to it. At that point, when people fully anticipate inflation, the rate of inflation tends to level off. (Again, see Box 1.)

**A Theory of Stagflation.** Stagflation gets underway as people revise their expectations about inflation and try to take additional steps to protect themselves from it. One way they can protect themselves is to try to buy today what will cost more tomorrow. But with everybody playing the same game, more buying pressure is put on the economy and today's prices turn out to be higher than they otherwise would be.

Unemployment increases for a slightly different and more complicated reason, however. At first, people are "fooled" by increased inflation and take jobs they wouldn't ordinarily take in a less inflationary economy. But after a while, they catch on to their "errors" and revert to their old behavior.

Let's see how that can happen by taking a simple example of Sam Searcher, diligent job seeker. Sam lives in an environment where prices have been increasing at about 2 percent a year for sometime, so that everyone expects that this rate is likely to continue into the future. The unemployment rate is 4.8 percent (the presumed natural rate), and unfortunately Sam is one of the frictionally unemployed. Suppose that the Government pursues expansionary monetary and fiscal policies to bring unemployment to 3 percent—well below the natural rate. Since there is no "slack" in the economy, the effect of these stimulative policies must be a general rise in prices, say, on the order of 10 percent. Most of the increase in prices will be unanticipated, because people are expecting a 2-percent inflation based on past experience. What effect will this have on unemployment? Let's see what Sam Searcher is doing.

## BOX 1

### EXPECTATIONS AND ECONOMIC ACTIVITY INTERACT

Suppose the economy has been in the happy state of full employment with no inflation for a long time. Suddenly, prices begin to rise by 10 percent a year. At first, people will feel that, because prices have been constant for so long, the current increases are a quirk and soon will stop. However, if the inflation continues at the rate of 10 percent, eventually people will change their minds about the temporary nature of the inflation. They will come to believe that 10 percent inflation is here to stay. As people decide that inflation has become permanent, however, they alter their buying behavior. They reason that if prices go up tomorrow, their money will be worth less than it is today. Therefore, better to spend the money today rather than tomorrow when it will buy less. So in anticipating inflation, people attempt to accelerate their purchases and increase their demand for goods. Unfortunately, because the economy is at full employment, more goods cannot be provided to meet the higher demand. Instead, prices must rise by even more than the 10 percent rate to throttle this extra demand. Consequently, the expectation of inflation, by raising aggregate demand, has increased inflation itself. More inflation heightens expectations, spurring yet another round of inflation, and so on up the spiral.

What stops prices from soaring through the roof? As prices rise faster than expected, the *real* (or price-adjusted) value of that part of people's wealth in assets with fixed dollar values such as cash begins to fall. For example, if someone has a \$100 bill in his wallet and



**BOX 1 (Continued)**

prices suddenly double, the \$100 becomes worth only half as much as before—it can buy only half as many goods. As the value of peoples' wealth falls, they channel less of their income into consumption and more into saving to restore at least part of their lost real wealth. So, the reduced value of wealth reduces consumption, which in turn relieves pressure on prices.

In summary, as inflation proceeds and price expectations rise, people tend to increase their consumption; however, simultaneously, the inflation eats into peoples' real wealth and this tends to reduce consumption. Eventually, these two forces come into balance. Once this happens, inflation stops rising and continues at a constant rate. There are no further forces to change the actual rate at which prices rise.

On April 1, Sam contacts the XYZ Corporation and learns of a vacancy at \$10 an hour. He tells them he is unwilling to work for less than \$11 an hour and goes back to searching. On April 2, inflation begins because of the Government's stimulative policies, and XYZ starts getting higher prices for its products. On April 3, XYZ decides to raise the wage associated with its vacancy to \$11 an hour to attract more workers. They call Sam and tell him they are now willing to pay \$11 an hour. Delighted, Searcher accepts and becomes employed. Multiply this situation across the country, and unemployment falls below its natural rate. Consequently, it seems that lower unemployment has been bought by higher inflation. However, by the time, say, April Fools' Day 1976 has rolled around, Sam Searcher and others like him have learned that inflation has been galloping along at 10 percent and that as a result *all* wages and prices, not just their own, have risen. In fact, they discover that their current wages of \$11 an hour are worth no more now than the \$10-an-hour wage was worth on April 1, 1975. Because they were not willing to work at \$10 an hour at the old prices, they are not willing to work at \$11 an hour now at the new prices; for they recognize that relative wages and prices have not changed. They quit work and once again become unemployed. Unemployment returns to its natural rate. However, inflation continues at the rate of 10 percent.

Stagflation has set in. Inflation has increased from 2 to 10 percent as a result of overly stimulative policies, whereas after a temporary decline, unemployment has risen back to the natural rate. When people perceive that all prices have risen simultaneously and build this into their expectations, their behavior is no longer affected by inflation; so that even though inflation may be higher, unemployment after a period of economic adjustment will end up back at its natural rate. (See Box 2 for a demonstration that anticipated inflation does not affect economic behavior.)

**FROM THEORY TO REALITY**

Economists who subscribe to the natural rate view say that it explains events in the U. S. economy since the middle '60s. In 1964, inflation was proceeding at the low rate of 1.2 percent, and unemployment was 5.2 percent. As the Vietnam War heated up, inflation rose to 6.1 percent in 1969, and unemployment fell below the natural rate to 3.5 percent. Subsequently, however, unemployment began to rise back toward the natural rate but inflation remained high, as the natural rate theory would predict. Unemployment continued to rise (except during 1973, when it fell somewhat following the highly stimulative monetary policy of 1972) above the assumed natural rate until in 1975 it reached the 8–9 percent range.



## BOX 2

## FULLY ANTICIPATED INFLATION DOES NOT AFFECT ECONOMIC BEHAVIOR

Let's look closely at the situation where prices are rising at a constant and fully anticipated rate. How are people behaving? Consumers, expecting higher prices in the future, demand wage contracts that allow for future wage increases to match the anticipated price increases. Employers, expecting to sell their goods for higher prices, are willing to grant such contracts. Everybody is happy, and the inflation affects neither employment nor output.

Interest rates also reflect the expected rate of inflation. Lenders, expecting prices to rise, demand that an inflation premium equal to the expected rate of inflation be tacked onto the interest rate charged for loans. For example, if lenders would charge 5 percent interest, compounded continuously, on loans when there is no inflation, then if they come to expect a rate of inflation of 10 percent, they will up their interest rate to 15 percent. Borrowers, in contrast, are willing to pay the inflation premium because they, expecting a rate of inflation of 10 percent, figure they will be able to earn the extra 10 percent with the borrowed money. Again, everybody is happy, with inflation affecting neither savings nor investment.

Inflation, then, *once fully anticipated*, has no effect on the unemployment rate. The reason for this startling conclusion is that once everyone anticipates inflation fully and adjusts to this anticipation, the inflation will not affect *relative prices*. (The real rate of return on money balances is an exception; it is reduced by an increase in inflation. However, the effects of this change are small for the moderate rates of inflation experienced by the U. S. and can be ignored.)

Economic activity depends not on the absolute levels of wages, prices, and assets, but on their relative values. For example, when the price of, say, butter rises relative to margarine, people reduce their consumption of the former and buy the latter. However, when *all* wages, prices, and asset values rise by the same proportion (and this change is correctly perceived by the public), there are no changes in anyone's economic behavior. Because prices have doubled, people must spend twice as many dollars for every item they buy. But because wages and asset values also have doubled, people have twice as many dollars to spend. Their "real income" and "real assets" are unchanged, and they will continue to buy exactly the same basket of goods as before prices, wages, and asset values doubled. Therefore, if inflation proceeds at a rate of 10 percent and if everybody expects it to proceed at this rate, then all wages, prices, and asset values will rise at a rate of 10 percent. In short, their relative values will not change and economic activity will be unaffected by the inflation.

The following example may be helpful. Mr. Chubby lives for three days—today, tomorrow, and the day after tomorrow. He currently has a job at which he works an hour a day and earns 15 cents an hour. He plans to work today and tomorrow and then retire the day after tomorrow. He only consumes 10-cent candy bars. Chubby, having



**BOX 2 (Continued)**

foresight, plans to spend 10 cents today and 10 cents tomorrow, saving 5 cents each day toward his retirement, when he will spend his savings on one last candy bar. Chubby's life plan is summarized in the following table:

	Today	Tomorrow	Day after Tomorrow
Hours Worked	1	1	0
Earnings	15¢	15¢	0¢
Candy Bars Consumed	1	1	1
Expenditure	10¢	10¢	10¢
Stock of Savings at Start of Day	0¢	5¢	10¢
Addition to Stock of Savings	5¢	5¢	-10¢

Suppose that everything goes according to plan today, so that Chubby earns his 15 cents, buys one candy bar, and saves 5 cents. At the end of the day, his assets total 5 cents. Suppose, however, that at the end of today the Government announces it will double all wages, prices, and asset holdings before tomorrow. Then Chubby can anticipate an increase in the price of candy bars to 20 cents apiece, and an increase in his current asset holdings to 10 cents. As we can see from the following table, Chubby can stick to his plan of working one hour tomorrow, retiring the day after tomorrow, and consuming one candy bar each day:

	Tomorrow	Day after Tomorrow
Hours Worked	1	0
Earnings	30¢	0¢
Candy Bars Consumed	1	1
Expenditure	20¢	20¢
Stock of Savings at Start of Day	10¢	20¢
Addition to Stock of Savings	10¢	-20¢

The doubling of all wages, prices, and asset values has no effect on Chubby's economic behavior.

Why did unemployment rise far beyond the natural rate even though people were beginning to anticipate increased rates of inflation? The answer seems to be that the Government believed that inflation was "too" high and had to be reduced. Consequently, restrictive monetary and fiscal policies were implemented. Total demand fell below the amount that businesses wanted to produce. As unwanted inventories began to pile up, firms cut back production and layoffs began, touching off a period of

sharp contraction of economic activity. With the sharp slackening in demand the pace of inflation has slowed, but because double-digit inflation remains fresh in the minds of the people, inflationary expectations still plague the economy. As a result, prices are still rising at a fast clip by historical standards. But as people revise downward their inflation expectations and curtail further their attempt to "beat inflation," a further easing of price pressures is in the cards, according to the natural rate view.



In short, the process that brought the economy to a high rate of inflation is being reversed. Eventually both the actual and expected rates of inflation will fall to a more acceptable level, and unemployment will return to its natural rate. The economy will end up back in a state of full employment with little or no inflation. (See Box 3 for a graphical

depiction of this whole process.) How rapidly the economy returns to this happy state depends on the policies pursued. The natural rate approach presents policymakers with a Hobson's choice—eliminating inflation *requires* some increase in unemployment. How much unemployment is chosen determines how quickly the inflation is eliminated.

**BOX 3**

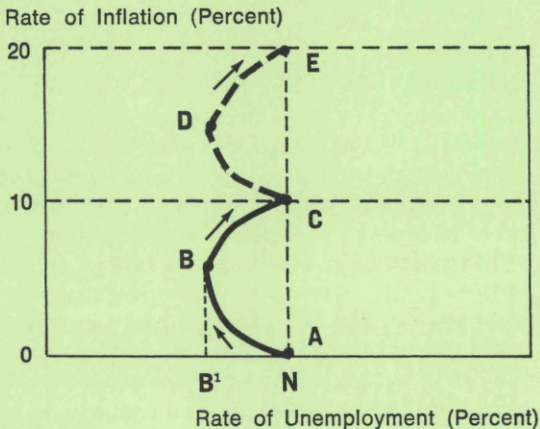
**HOW THE NATURAL RATE PROCESS WORKS**

The economy starts at point A, where inflation is 0 and unemployment is at the natural rate N. As inflation begins to rise, unemployment falls at first because people are fooled into thinking their wages have risen relative to prices and therefore accept employment more readily. Unemployment reaches its low point at B. As people begin to learn of inflation, unemployment begins to rise because people find that their wages in fact have not increased relative to prices by as much as they had thought, and they therefore leave employment more readily. Once everybody fully anticipates the inflation, the economy ends up at C, with inflation proceeding at 10 percent but employment back at its natural rate. If at this point inflation were to rise to 20 percent, the process would be repeated and the economy would move from C to D to E.

How can the economy be moved from C back to A? Suppose the economy is at C in Graph 2, which corresponds to C in Graph 1. The expected rate of inflation equals the

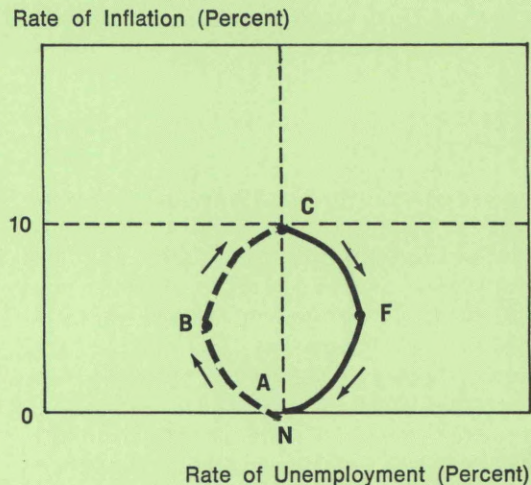
**GRAPH 1**

**HOW INCREASING THE RATE OF INFLATION CAN LOWER THE RATE OF UNEMPLOYMENT TEMPORARILY BUT NOT PERMANENTLY**



**GRAPH 2**

**HOW TO GET BACK TO A ZERO RATE OF INFLATION**

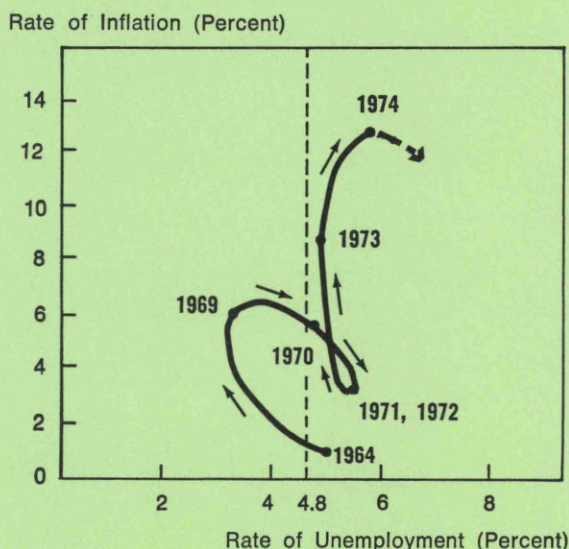




**BOX 3 (Continued)**

actual rate. Suppose Uncle Sam ends the stimulative policies that brought the economy from A to C. Then aggregate demand falls below aggregate supply. This takes pressure off prices and reverses the process that brought the economy from point A to point C. The economy moves from C back to A via F. At point A, both the expected and actual rates of inflation are back down to 0 percent, and unemployment is at its natural rate. The economy is back in a state of full employment with no inflation.

Graph 3 shows the recent path of the U. S. economy.

**GRAPH 3****THE RECENT EXPERIENCE OF THE U.S. ECONOMY****POLICY CHOICES: HOW FAST TO GO AND WHO GETS HURT?**

The natural rate approach suggests that the higher the unemployment rate now, the faster inflation will be eliminated, and the sooner the natural rate of unemployment can be restored. The more restrictive the Government makes its policies, the more demand declines. Hence, the rate of inflation subsides more rapidly, and people quickly revise down their expectations about inflation. However, more restrictive policies also mean more unemployment. Consequently, a clear

tradeoff emerges. The faster the economy is forced to return to price stability and full employment, the higher is the unemployment that must be endured in the meantime. Conversely, the lower the rate of unemployment is kept, the longer the economy will take to return to price stability and full employment.

Why isn't it possible to employ restrictive policies to fight inflation but keep unemployment down by starting a program like the WPA of the 1930s? That's possible, but here the Government must be careful. The purpose of Government-sponsored job pro-



grams is to spread the burden of fighting inflation more equitably across the population. There are two ways to finance a job program—by increasing deficit spending or by increasing taxes. Any simple increase in deficit spending would tend to offset the original restrictive policy that was instituted to fight inflation. The anti-inflationary thrust of the total program would be less. However, if the Government is going to employ deficit spending to finance job programs and still salvage some anti-inflationary benefits from its policies, it must pay the workers something less than their original salaries. The less the Government pays the workers it hires, the more rapidly inflation will be eliminated, but the larger will be the burden of the anti-inflation struggle.

The other possibility is to finance the job programs by taxes instead of by deficit spending. Under this scheme, the job programs themselves would have little, if any, net effect on aggregate demand, no matter what their size. Every dollar given to unemployed Paul simply would be taxed away from employed Peter. This is merely a transfer of income and has no effect on the total amount of income there is to be spent. However, it would spread the burden of the inflation fight in a way many people consider more equitable.

Following this logic, the Government can use WPA-style programs to fight unemployment while it is fighting inflation. However, if total policy is to remain anti-inflationary, *someone still must get hurt temporarily*. Either the people rehired by the jobs program must be paid less than their original salaries, or the people still employed must pay higher taxes to finance the jobs program, or both.<sup>6</sup>

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<sup>6</sup>Why couldn't the Government apply stimulative policies to reduce unemployment and institute wage-price controls to prevent inflation? The debate over controls is complex and beyond the scope of this article. What is pertinent here is that controls do *not* eliminate the cause of inflation—excess demand; they merely force the demand pressures to manifest themselves in

There are, then, two policy tradeoffs. First, there is a speed tradeoff. The faster society wants to reduce the rate of inflation, the greater the unemployment burden it must bear during the process of price reduction—but, the sooner it can return to normal conditions. Second, there is a distribution tradeoff. Whatever speed tradeoff society chooses, it must decide how to distribute the ensuing burden. It can adopt a “hands-off” policy, in which the unemployed bears a disproportionate share of the burden of reducing inflation, or it can attempt to alleviate unemployment through Government assistance, in which case some of the burden of reducing inflation is shifted to others.

#### Rx FOR STAGFLATION?

The natural rate view appears to have some merit in explaining the current predicament of the U. S. economy. The basic idea is that stabilization policy has been used in an attempt to keep unemployment below its natural rate. As unemployment returned to its natural rate, stagflation resulted. In an attempt to combat the resulting inflation, unemployment was permitted to rise to its currently high levels. Relief on the inflation front has finally begun to appear.

Within this framework of analysis, the “old-time religion” offers a cure for our ills. In a nutshell, the cure is to bear a temporary burden of higher unemployment, lower incomes, and/or higher taxes until inflationary expectations are eliminated. Granted, this cure is painful. But, unfortunately, if the natural rate approach is correct, there seems to be no other remedy. What choices there are revolve around how fast the economy should take the inflationary cure and how the burden should be distributed.

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different ways. For example, if prices cannot rise to clear the market, people may have to spend more time waiting in lines to make their purchases, which means that although it costs fewer dollars to buy goods, it costs more time. Controls do not cure the disease of inflation; they only affect the symptoms.



## APPENDIX THE MULTIPLIER EFFECT

Let's look at a very simple example to see the main points involved. Assume that the only factor of production is labor and that producers are all philanthropists who pass on all their profits to workers. Then each worker is paid exactly the value of what he produces. Suppose all workers are alike and earn \$10,000. Suppose all workers always devote four-fifths of their income to consumption and one-fifth to saving.

Imagine that the Federal Government suddenly cuts its purchase of consumption goods by \$10,000. Producers react by cutting production goods by \$10,000 and fire one worker. This fired worker, having lost his income, reduces his consumption. He was earning \$10,000, of which he spent four-fifths, or \$8000. For simplicity, suppose that when he is fired, he stops consuming altogether so that total spending drops by another \$8000 over and above the Government's original reduction of \$10,000. Producers now must cut production by \$8000. They do this by firing four-fifths of a worker, that is, by reducing the number of hours that one worker is employed by four-fifths (for example, if workers normally work an eight-hour day, one of them now would work  $8 - \frac{4}{5} \times 8 = 2.6$  hours) and reducing his pay by \$8000. He must reduce his consumption by  $\frac{4}{5} \times \$8000 = \$5400$ . This causes producers to reduce output again and reduce another worker's pay and so on. The total reduction in pay turns out to be

$$\$10,000 \times \frac{1}{1 - 4/5} = \$50,000.$$

The total number of man-hours eliminated is

$$\frac{8 \frac{\text{hours}}{\text{worker}}}{\$10,000 \frac{\text{output}}{\text{worker}}} \cdot \$10,000 \frac{1}{1 - \frac{4}{5}} = 40,$$


which is equivalent to firing five workers. The fraction

$$\frac{1}{1 - 4/5} = 5$$

is called "the multiplier." There are two important things to notice in this example. (1) Because of the multiplier, the decrease in Government spending caused a contraction in the economy that was larger than the original decrease in spending itself. (2) This contraction did not continue indefinitely so as to wipe out the entire economy but stopped at a point determined by the multiplier.

This simple example overstates the multiplier; there are many "leakages" in the economic system which reduce the multiplier from the pure, theoretical value used above. Adjustments in interest rates, the existence of unemployment compensation, and the automatic reduction in tax receipts that occurs as incomes fall are examples of such leakages. However, for simplicity's sake, these complications are ignored.

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