

Economic Review



FEDERAL RESERVE BANK OF ATLANTA

APRIL 1981

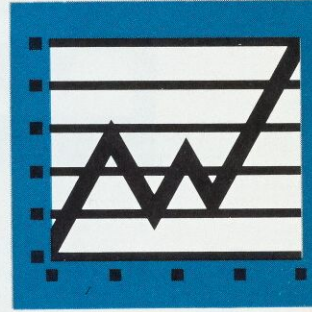
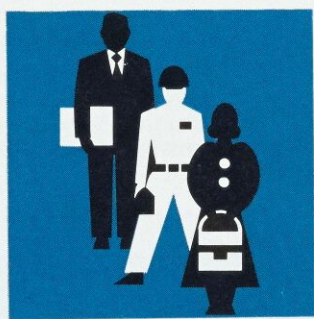
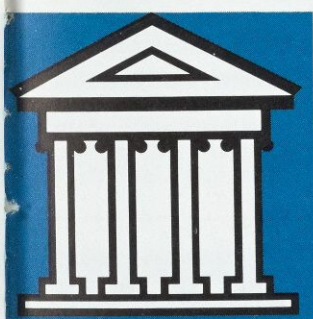
VOLCKER 1981 Money Targets

NEWS S&Ls Start Fast

SUPPLY-SIDE Reviewing the Evidence

MIAMI Behind Foreign Banking Surge

ECKSTEIN The Fed vs. Inflation



Economic Review



FEDERAL RESERVE BANK OF ATLANTA

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The purpose of the *Economic Review* is to inform the public about Federal Reserve policies and the economic environment and, in particular, to narrow the gap between specialists and concerned laymen.



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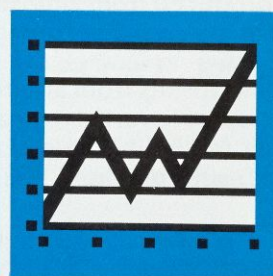
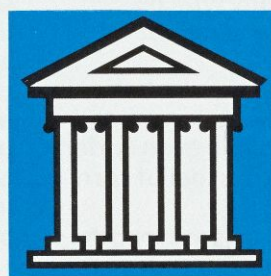
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Renewable Energy Sources from the Farm

Farmers, especially in the Southeast, are intensely interested in alternate fuels generated from farm products. Wide variations in cost make the economic feasibility of alcohol from corn questionable. Gas from wood is an attractive alternative to natural gas.

Energy is a significant cost in all farm operations. Direct use of fuels to power farm machinery may amount to as much as 15 percent of total crop production costs. When costs of materials derived from petroleum and/or natural gas are included (insecticides, herbicides, pesticides, and most nitrogen fertilizers), nearly 50 percent of the costs of producing cotton in the Southeast is directly dependent on energy prices. Farmers are intensely interested in alternate fuel sources that may promise to cut their energy expenditures and especially in those fuels that can be generated directly on the farm. It is technically possible to get energy from renewable farm products, but is it economically feasible?

Alcohol from Farm Products

Farm production of alcohol from locally produced products is one possibility that has been of particular interest to farmers. The alcohol can be mixed with gasoline to stretch fuel supplies, thereby reducing expenditures for commercial fuels. A number of on-farm stills have been erected for the purpose of converting high-starch materials to alcohol. Corn is the most commonly used raw product, although alcohol can be produced from almost any type of vegetable material that contains starch or sugar.

Thus far, results from attempts at alcohol production have varied over a wide range, and economic feasibility is questionable even under the best results obtained.¹ One bushel of corn

produces from 1.0 to 2.5 gallons of ethanol (pure alcohol without water), depending upon the efficiency of the operation. The main by-product is 20 to 30 gallons of "stillage," a liquid made up of distillers' grains, distillers' solubles, and water. The stillage has some value as animal feed, principally because of the protein content of the grain that remains in the solution. It is difficult to utilize the stillage, however, since it cannot be stored for longer than two or three days without spoilage unless it is dried. Its high water content keeps most of even the largest farm animals from consuming enough of the liquid directly to gain sufficient nutrition from it, and the energy requirement for drying the solution is about equivalent to the energy utilized in the original distillation process.

Specific costs of alcohol production vary depending on the price of corn which accounts for 40 to 60 percent of the total. During the past year, the price ranged between \$2.75 and \$3.75 per bushel. The raw product cost of the final product ranges between \$1.10 per gallon in the most efficient operation and \$3.75 per gallon.

Costs of fuel for heat to speed up the conversion process range between 10 cents and 40 cents per gallon, depending on the efficiency of the operations and the type of fuel employed. Other variable costs, including labor and additives, range between 5 cents and 20 cents per gallon. Fixed or overhead costs add another 20 cents to 50 cents. Altogether, alcohol produced from corn may cost as little as \$1.55 per gallon if produced under ideal circumstances, or it could cost as much as \$5.05 per gallon if all items come in at the high range. In most cases, costs have been on the high side of the range.

A further disadvantage is that alcohol produces less energy than gasoline or diesel. A

¹ Based on a presentation by Dr. William Givan, "Economics of Farm Renewable Energy Sources," Georgia Cooperative Extension Service, at the Georgia Chapter of American Society of Farm Managers and Rural Appraisers, January 27, 1981.

gallon of regular gasoline generates 124,000 BTU, number 2 diesel gives 139,000 BTU, while pure alcohol gives 85,000 BTU. Alcohol at 190 proof and 160 proof gives 81,000 and 68,000 BTU, respectively. Some gains in efficiency of combustion are realized from gasoline and alcohol mixtures, but even so, a gallon of alcohol supplies only about two-thirds of the energy obtained from a gallon of regular gasoline. Thus, even at the lowest production cost of \$1.55 per gallon, alcohol is an expensive substitute for the regular gasoline it is intended to replace.

Farmers may get some additional payback from the stillage by-product used as feed, but most farmers are not equipped to handle the product without expensive additional investment and operating costs. A further problem is that the stillage cannot be simply discarded without creating serious problems of environmental pollution.

Tax credits available to alcohol producers are additional contributions toward economic feasibility. An investment tax credit amounting to 20 percent of the investment in equipment is available to producers in the first year of operation. In addition, an income tax credit is available to users amounting to 40 cents per gallon for use of alcohol that is 190 proof or greater and 30 cents per gallon for use of alcohol under 190 proof. To raise alcohol to 190 proof or above approximately doubles the total energy utilized in distillation.

Vegetable Oils from Oilseeds

The vegetable oils obtained from crops such as soybeans, cottonseed, sunflowers, and peanuts have been used successfully in a mixture with number 2 diesel fuel to power diesel engines. Some engines have allegedly been operated on 100 percent vegetable oil. Although some engine problems may result from continuous usage of vegetable oil fuel mixtures, many believe that these problems can be overcome relatively easily.

The major obstacle to widespread usage of vegetable oils as a substitute for diesel fuel is the higher cost of oils. The cost of soybean oil, the cheapest of the alternatives available commercially, ranged between \$1.50 and \$2.30 per gallon during 1980. In mid-January of 1981, farmers paid an average of \$1.06 per gallon for diesel fuel and the spot price of soybean oil was

about \$1.85 per gallon. Clearly, farmers cannot save money by replacing diesel fuel with vegetable oils at current prices. Vegetable oils could serve as a temporary backup fuel supply in the event that petroleum supplies were curtailed or cut off. Over the long run, however, prices of food products such as vegetable oils seem likely to increase also as petroleum prices rise.

Gas from Wood

A hospital at Rome, Georgia, has successfully experimented with a wood gasification process which replaces natural gas and number 2 fuel oil as the primary means of heating.² Wood is harvested and run through a chipper, then hauled to the use site where it is fed green into the gasification unit. Combustion of the wood chips themselves generates heat that drives gases from the wood and through a pipe to a gas burner which provides the heat source for the hospital. Costs of the gas from whole-tree wood chips averaged \$2.04 per million BTU in 1980 as compared with \$3.50 and \$6.20 per million BTU from natural gas and number 2 fuel oil, respectively. The investment in the wood gasification unit itself was not included in the cost of fuel from wood chips, but the investment costs allegedly would be recovered over a four-year period from the savings generated through the use of wood chips.

It is uncertain that wood chips would continue to be available at 1980's prices if use were to expand sharply. The cost increased about 20 percent from 1977 to 1980. Nevertheless, the potential is attractive to farmers because the wood chip system allows them to market all trees grown with no waste resulting from unused portions of the tree. The clean removal of all trees from the harvested area facilitates the replanting and regrowth process and increases the productivity from a given area of forest land.



—Gene D. Sullivan

² Based on a presentation by Ray A. Shirley, Director of the Georgia Forestry Commission, "Wood as an Alternative Energy Source," Georgia Chapter of American Society of Farm Managers and Rural Appraisers, January 27, 1981.

The Fed vs. Inflation

by Otto Eckstein

The economy is likely to enter a new recession in the weeks ahead. A rising prime rate will cause interest-sensitive expenditures to plummet. The substantial declines in housing, other construction, and automobiles will create a small recession for the economy as a whole. However, since business and household expectations never became particularly positive during the brief recovery, and inventories are near equilibrium, the recession is unlikely to be deep. Indeed, there is still a chance that the declines of early 1981 will not constitute a genuine recession, but will be limited to the housing and automotive sectors.

More interesting is the development of product and financial markets once the little recession is over: will the Federal Reserve's tough policy of living within the monetary aggregate targets keep interest rates unstable for another year or two? If so, the economy may be trapped in a stop-go pattern that will make business planning difficult and damage the already low rate of capital formation. Will the economy be kept in recession until the inflation has abated, a process which could take quite a long time? Or are we in a period of... restraint which can set the stage for new policies of economic development through supply-side measures?

The near-term economic outlook is dominated by the Federal Reserve's struggle against inflation; later on, the wisdom and

strength of the new administration's economic policies will become decisive.

Why Has There Been So Much Trouble?

When the Federal Reserve adopted the monetarist approach a year ago, no one expected it to produce such volatile interest rates and two recessions. Why has its introduction proved so troublesome? First, the growth in the money supply has been hard to predict, and indeed even difficult to measure. The redefinitions of money required by the arrival of NOW and ATS accounts introduce new uncertainties into the definition of money and its relationship to economic activity. With the weekly money supply estimates resembling the throw of dice, monetary policy is driven by a partly random variable. Second, the Federal Reserve is still learning the relation between its new policy instrument (the volume of bank reserves) [and] the money supply. In early 1980 the Fed underestimated the effects of reserve retardation in creating a recession and bringing down the money supply; over the summer, it underestimated the effect of reserve expansion and created a money supply explosion. Third, the compliance and reporting lags for bank reserves complicate the Fed's task needlessly, although this flaw is being corrected. Finally, and most fundamentally, a 6½% year-over-year increase in the money supply cannot be reconciled with a very

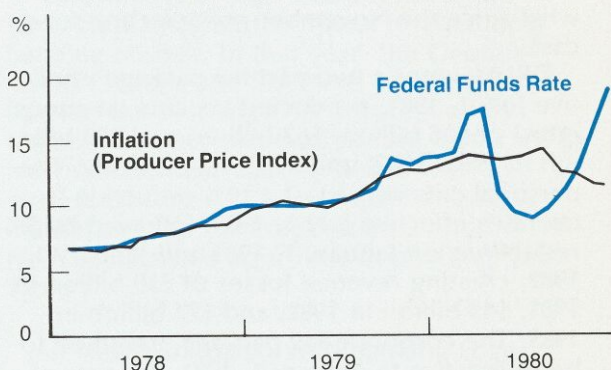
Otto Eckstein is President of Data Resources, Inc., of Lexington, Massachusetts. On a recent visit to Atlanta, he addressed the Board of Directors of the Federal Reserve Bank of Atlanta. The following are excerpts from his remarks.

stubborn core inflation and the oil price shocks. The monetarist approach converts every price shock into an activity shock, and while this approach may ultimately bring down the inflation rate, it will cause much pain along the way.

How severe will be the effects of the current round of monetary policy? As Chart 1 shows, the real interest rate peak is higher than in the earlier rounds, but there are no consumer credit controls this time, and familiarity with 20% rates has made them less disturbing. Consequently, the decline in new home sales and housing activity is likely to be less than in [Spring 1980.] The Fed will not score a knockout victory over inflation this time around. The 1981 prospect is dominated by a 9+% core rate, a 2.1% shock rate created by OPEC and domestic oil price de-control, and a food price increase outlook of 14.9%. Weak demand will lower the inflation rate by one percentage point, the benefit of the monetary policy through lower commodity prices (Chart 2), some wage moderation and business cost absorption.

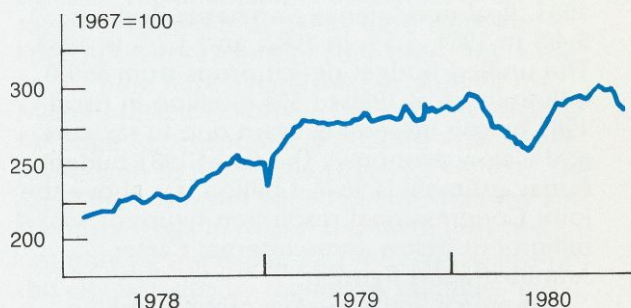
No administration is likely to tolerate such frequent bouts of tight money, with interest rates bouncing from 10% to 20% twice in one year. If inflation performance improves during 1981, the Federal Reserve may be able to achieve its monetary target through a normal increase of velocity. If the inflation record does not improve to make this happy

Chart 1
Federal Funds Rate vs. Inflation Rate*



*As measured by the year-over-year percent change in the Producer Price Index for finished goods.

Chart 2
Sensitive Prices, BLS Tuesday Spot Price Index



outcome possible, the Federal Reserve is likely to become somewhat more flexible about the achievement of its targets.

Assumptions

The first hundred days of the Reagan Administration will see a dramatic effort to halt the growth of real government spending. Although the requisite goals for spending control are understood, the political difficulties of meeting them are emerging. DRI has raised its federal spending forecasts somewhat since the November post-election forecast.

DRI assumes a two-part tax package effective July 1, 1981, producing tax cuts (at annual rates) of \$38 billion, \$62 billion, and \$93 billion in 1981, 1982, and 1983, respectively. The personal cuts consist of a 10% reduction in tax rates effective July 1, 1981, followed by 5% reductions on January 1, 1981 and January 1, 1982, creating revenue losses of \$30 billion in 1981, \$48 billion in 1982, and \$72 billion in 1983. The corporate tax package, assumed to be retroactive to January 1, 1981, consists of accelerated depreciation which reduces corporate tax liabilities by \$8 billion in 1981, \$14 billion in 1982, and \$21 billion in 1983.

The Reagan Administration will increase military outlays and reduce civilian spending. In the DRI forecast, real defense purchases rise 5.7% in 1981, 3.1% in 1982, and 5.3% in 1983. Real nondefense purchases decline 5.4% in 1981, 5.5% in 1982, and 3.2% in 1983. The unified budget deficit drops from \$59.0 billion in fiscal 1980 to \$54.8 billion in fiscal 1981 before increasing again due to tax cuts and a slow economy. The fiscal 1981 budget outlay estimate is \$648.4 billion, far above the joint Congressional resolution figure of \$632.4 billion but below some internal Carter Administration figures.

Fed policy limits reserve growth early in 1981, even as demand-side weakness pushes

interest rates lower. The Reagan fiscal policy stimulus is not accommodated by the Fed during the second half, so that interest rates again move higher. The strong 1982 economy generates too-rapid monetary growth, and Fed policy once again turns restrictive.

The Forecast in Brief

The recession should be over by mid-1981. By July 1, and perhaps even a month or two earlier, the tax cuts should be effective, boosting consumer purchasing power and providing new incentive to business investment. Real growth moves to a 4.6% rate for the four quarters ending in mid-1982, as housing starts move toward 1.6 million units, car sales recover to 10 million units, and investment begins a 6% rate of increase. Inflation improves only slightly over the 1980 record, with the consumer price index up by 11.6% in the four quarters ending next December. The rate of wage increase accelerates a bit, as workers and employers move to maintain real purchasing power.

Interest rates retreat, now that they have done their nasty work, with the prime interest rate bottoming out at an average 14% in the summer. It is assumed that the Federal Reserve will not repeat its mistake of letting real interest rates go substantially negative. The next upswing in interest rates is more gentle, carrying the prime rate to 16% and AA utility bond yields and mortgage yields to 14%. This relatively mild credit cycle begins to curtail the economy's growth by 1983. The best year of the recovery, 1982, shows a 4.1% rate of growth; 1983 shows a retreat to 3.0%. Consumption shows somewhat smoother growth, as purchasing power is maintained by tax cuts. The forecast assumes that the initial personal reduction is 10%, but that the second and third steps are limited to 5% cuts because of the danger of unacceptably large deficits.

ER

Behind Miami's Surge in International Banking

Miami's international banking activity has expanded substantially since 1969. Regulatory changes have made the Edge Act corporation a more viable entity. Florida's legal and tax structure has become more accommodating to international financial development. And banking activity with Latin American individuals and nonfinancial firms has surged.

In the past two decades, Miami has emerged as one of the new international banking centers. The move to Miami by major U. S. and foreign banks has been stimulated by both regulatory changes and economic factors.

International Banking from Miami: The Cast of Participants

International banking from Miami consists of locally based commercial banks, Edge Act corporations set up by out-of-state and foreign banks, and foreign bank agencies and representative offices. Using June 1980 data, transactions with the Caribbean Basin and the rest of Latin America constituted at least half, and regularly 80 to 90 percent, of Miami's commercial bank, Edge, and agency activity with foreigners.

Commercial Banks

Several of Miami's commercial banks have had active international departments for years. In recent years, their number has grown steadily. Currently, more than 20 commercial banks have "active" international departments (see Table 1). This growth has been stimulated by competitive factors, by the increasing numbers of Latin Americans traveling to Miami, and by an international orientation stimulated by foreign acquisition of Florida commercial banks. In fact, nine of the commercial banks with active international departments are foreign-controlled (see Table 2).

Edge Act Corporations

It was not until 1969 that a non-Florida U. S. bank entered the Miami international banking market. In that year, the Georgia-based Citizens and Southern National Bank opened the first Edge Act corporation in Miami. Edge Act corporations are restricted to international transactions. Since 1969, 21 more banks have entered Miami's banking market as Edge Act corporations; another 11 have applications approved or pending (see Table 3).

All New York banks with banking Edges have or have applied for Miami presence. Four of the six California banks and three of the four Chicago banks with banking Edges also have active or pending Miami presence. The future growth of Edge Act corporations in Miami, however, will be through expanding use of Edge Act powers by foreign banks and by U. S. regional banks. Currently, 22 U. S. regional commercial banks have banking Edge Act corporations or Edge branches in the U. S.; nine have established or applied for Miami presence. Foreign banks, now eligible for Edge Act corporation establishment, have just begun to utilize the Edge Act vehicle. The rapid expansion of Edge Act corporations and their branches in Miami has been induced not only by the expanding internationalism of the city but also by regulatory changes making the Edge Act corporation a more viable entity (see box).

TABLE 1

The Miami Bank Participants in International Banking
(as of December 31, 1980)

Commercial Banks

Creditbank
Bank of Miami
Barnett Bank
Capital Bank
Central Bank and Trust
Central National Bank
City National Bank of Miami
Coconut Grove National Bank
Dadeland National Bank
First National Bank of Greater Miami
First State Bank of Miami
Flagship Banks, Inc.
Florida National Bank
International Bank of Miami
Intercontinental Bank
Pan American Bank
Peoples Downtown National Bank
Republic National Bank
Royal Trust Bank of Miami
Southeast First National Bank
Southeast First National Bank
Totalbank

Edge Act Corporations

Algemene Bank Nederland¹
American Security Bank International
Banco de Bogota International
Banco de Santander International
Banco de Venezuela International¹
BankAmerica International
Bank of Boston International of Miami
Bank of New York International²
Bankers Trust International—Miami
Chase Bank International—Miami
Chemical Bank International of Miami
Citizens and Southern International Bank
Citibank International
Continental Bank International
European American Bank International²
First Chicago International¹
First Palm Beach International Bank²
First Union International Bank¹
Irving Trust Company International/Miami
Manufacturers Hanover International
Banking Corporation

Edge Act Corporations (continued)

Marine Midland InterAmerican Bank
Mellon International Company²
Merchants International Bank²
Morgan Guaranty International Bank
New England Merchants Bank International
Northern Trust InterAmerican Bank
Republic International Bank of New York
Riggs International Banking Corporation¹
J. Henry Schroder International Bank
Security Pacific International Bank
Shamut Boston International Banking Corporation¹
United California Bank International
Wells Fargo InterAmerican Bank

Foreign Bank Agencies

Banco de Bilbao
Banco Central¹
Banco de la Nacion Argentina
Banco de la Provincia de Buenos Air
Banco de Santander
Banco de Viscaya
Banco do Brasil
Banco do Estado de Sao Paulo
Banco Exterior de Espana
Banco Industrial de Venezuela¹
Banco Real
Bank Hapoalim
Bank Leumi Le-Israel
Bank of Nova Scotia
Barclays Bank International¹
Credit Suisse¹
Israel Discount Bank
Lloyds Bank International
Royal Bank of Canada
Standard Chartered Bank

Foreign Bank Representative Offices

Banco Internacional de Costa Rica
Bank of Tokyo Ltd.
Credit Suisse¹
Dow Banking Corporation¹

¹ Approved, unopened

² Application pending

Foreign Bank Agencies

In 1977, Florida furthered its international banking development by authorizing foreign bank agencies and representative offices. At first, foreign bank agencies set up under Florida state charters were limited to internationally oriented credits and to nondeposit activities. Since enactment of the U. S. International Banking Act of 1978, which set up mechanisms for establishment of federally chartered agencies, Florida has altered its regulations on foreign bank agencies so as to

be on a par with those federally chartered.¹ Now all foreign bank agencies in Florida may deal fully in domestic and international credits and can accept nonresident (foreign) deposits.

Agencies are limited to credit balances reflecting international transactions. Representative offices are prohibited from undertaking deposit or lending activity and may only represent their parent bank. Through December 1980, 16 foreign banks had set up Florida agencies; three more foreign banks had agency applications either approved or pending. Another four foreign banks have set up or are in the process of opening Miami representative offices.

International Banking from Miami: The Deposit (Liability) Structure

Miami's internationally oriented banks accept over four-fifths of their foreign deposits from individuals and nonfinancial firms (see Table 4). Total U. S. bank liabilities to individuals and nonfinancial firms, in contrast, represented only 15 percent. Nearly two-thirds of the Miami deposits from foreigners are placed in time deposits.

The foreign agencies in Miami, however, depend primarily on their affiliated bank offices abroad for funds. Since Florida foreign bank agencies can now accept foreign deposits, their share of such deposits should expand in the future.

In spite of the large influx of out-of-state and out-of-country banks into Miami's international banking market, Miami's commercial banks still dominate the city's foreign deposit activity (see Table 5).

Edge Act corporations, however, have developed the largest deposit activity with foreign official institutions.

International Lending—What Is the Depth of Miami's International Banking Center?

While Miami-based commercial banks dominate in liability activity with foreigners, the Edge Act corporations do more than half

¹See E. N. Roussakis, "Foreign Banks in Miami's International Banking Community," Miami School of Business and Organizational Sciences, Florida International University, 1980. Professor Roussakis has also recently written two companion manuscripts on Miami's international banking, "Edge Act Corporations in Miami's International Banking Community" and "Local Banks in Miami's International Banking Community."

TABLE 2
Known and Pending Foreign Acquisitions of Florida Commercial Banks
(Through November 5, 1980)

Acquired Bank	New Name of Bank (if changed)	Name of Acquirer	Nationality of Acquirer
American Bank of Orange County	Royal Trust Bank of Orlando	Royal Trust Company	Canada
Bank of Cutler Ridge	Creditbank	J. L. Calonge	Spain
Bank of Miami Beach	Intercontinental Bank	J. Castell Lastortras Family	Spain
Bank of Perrine*	No name change	F. Corea Maya and F. H. Saldarriaga	Colombia
Baymeadows Bank	Royal Trust Bank of Jacksonville	Royal Trust Company	Canada
Biscayne Bank	No name change	M. Espirito and S. Silva	Portugal
Central National Bank of Miami	No name change	Sabrian Properties/ Eagle National Holding Company ¹	Colombia
Dale Mabry State Bank	Royal Trust Bank of Tampa	Royal Trust Company	Canada
Dania Bank	No name change	J. J. Gonzalez Gorron dona, Jr.	Venezuela
Deerfield Beach State Bank*	No name change	MFG Investments/ J. Alvarez Stelling	Venezuela
Fidelity National Bank of South Miami	International Bank of Miami	Banco Internacional de Comercio ²	Spain
First Bank of Gulfport	Royal Trust Bank of St. Petersburg	Royal Trust Company	Canada
First Bank of Pembroke Pines	Royal Trust Bank of Broward County	Royal Trust Company	Canada
First City National Bank of Jacksonville	No name change	Canadian and Dutch Investors	Canada/Netherlands
First National Bank of Hialeah	First National Bank of Greater Miami	J. Alvarez Stelling/ MFG Investments	Venezuela
Flagler Bank	Intercontinental Bank	J. Castell Lastortras Family	Spain
Flagship Bank of Adventura	SafraBank	E. Safra/SafraCorp.	Brazil
Flagship National Bank of Dadeland	Dadeland National Bank	Spanish and South American Investors	Six countries ³
International Bank of Miami	Royal Trust Bank of Miami	Royal Trust Company	Canada
Miami National Bank	No name change	Banco Zaragozano	Spain
Pan American Bank of Coral Gables	Caribank	J. J. Gonzalez Gorron dona, Jr.	Venezuela
Republic National Bank of Miami	No name change	Rebank Corporation/ Isaías Family	Ecuador
Sunshine State Bank	No name change	A. Robles Chiara and J. Andonie Fernandez	Panama/Honduras
Totalbank	No name change	F. E. Blanco	Spain
Worth Avenue National Bank	Royal Trust Bank of Palm Beach	Royal Trust Company	Canada

¹ Owned by H. V. Rojas and J. Michaelson Uribe. ² Plus two other groups of Spanish investors. ³ Colombia, Costa Rica, El Salvador, Guatemala, Panama, and Spain. * Pending. Sources: W. Longbrake, M. Quinn, and J. Walter, *Foreign Ownership of U. S. Banks: Facts and Patterns*, Washington, D. C., Office of the Comptroller of the Currency, 1980, plus Office of the Comptroller of the Currency and Board of Governors of the Federal Reserve System updated information, and Mira Wilkins, "Impact of Non-U.S. Investment on Florida's Resources and Enterprises," Report to the Office of the Secretary of State, Miami, Florida International University, 1980.

of Miami's direct lending abroad. Excluding funds placed with affiliated foreign bank offices, the Edge share jumps to nearly two-thirds.

Lending to nonfinancial firms and individuals abroad constituted a third of Miami's foreign lending at the end of June 1980 (see Table 4). The relatively heavy concentration on such lending reflects, as on the liability side, the importance of foreign personal and nonfinancial entity transactions to Miami.

A quarter of Miami's foreign lending is to unaffiliated foreign banks; much of this is through lines of credit established with correspondent banks abroad. Only a minor portion is lent directly to foreign governments and other official institutions. Significant bank lending to public borrowers is generally done through large-scale syndicated credits which traditionally have been booked in money centers. The capital base of the Edge Act corporations, particularly before the IBA induced

TABLE 3

Banking Edges and Edge Branches in the United States, by Year of Establishment*
(Through December 31, 1980)

	Chicago	Houston	Los Angeles	Miami	New York	San Francisco	Other
New York Banks							
Bank of New York	1980 ²	1980 ²		1980 ²			
Bankers Trust	1974	1974	1973	1974			
Chase Manhattan	1974	1974	1970	1972			
Chemical	1964		1980 ⁴	1979		1973	
Citibank	1972	1972	1970 ⁴	1971		1977 ⁴	1980 [*]
European American			1979	1980 ²			
Irving Trust	1980 ²		1974	1972			
Manufacturers Hanover Trust	1980 ⁵	1980 ⁵	1973 ⁴	1979			1980 ² (Atl / Dallas) ²
Marine Midland		1980 ²	1980 ²	1979			
Morgan Guaranty		1974 ⁴	1980	1977		1972 ⁴	
Republic National Bank of New York			1980	1979			
J. Henry Schroder Bank & Trust				1980			
California Banks							
Bank of America	1972 ⁴	1972 ⁴		1972 ⁴	1950 ⁴		1980 ^{**}
Bank of California					1966		
Crocker	1973				1967		
Security Pacific	1980 ⁴	1980 ⁴		1980 ⁴	1967		
United California	1980 ⁵	1980 ⁵		1980 ⁴	1962		
Wells Fargo				1971	1964		
Chicago Banks							
Continental Illinois		1974 ⁴	1972 ⁴	1979 ⁴	1962 ⁴	1980 ⁴	1980 ^{***}
First National Bank of Chicago		1979	1973 ⁴	1980 ⁵	1962	1974 ⁴	1980 (Boston)
Harris Trust					1971		
Northern Trust				1974	1968		
Regional Banks							
Allied Bank ¹					1968		
American Security (Washington, D.C.)				1980			
Central National Bank of Cleveland					1968		
Citizens and Southern (Georgia)				1969			1972 (New Orleans)
Connecticut Bank & Trust					1972		
Fidelity Bank (Pennsylvania)					1968		
First National Bank in Dallas					1978		
First National Bank of Boston	1980 ⁴		1974	1972	1959		1980 (Dallas) ⁵
First National Bank of St. Louis				1980 ⁵			
First Wisconsin Bank of Milwaukee					1972		
First National Bank of Palm Beach (Fla.)				1980 ²			
Girard Bank (Pennsylvania)					1969		
Mellon Bank (Pennsylvania)				1980 ²	1963		
Merchants National Bank & Trust (Ind.)				1980 ²			
New England Merchant Bank (Mass.)				1980 ⁴			
North Carolina National Bank					1973		
Philadelphia National Bank					1967		
Pittsburgh National Bank					1980 ⁴		
Rainier National Bank (Washington)			1963		1969		
Riggs National Bank (Washington, D.C.)				1980 ⁵			
Shamut Bank of Boston				1980 ⁵			
State Street Bank & Trust Company (Mass.)					1965		
Wachovia Bank & Trust (N. C.)					1973		
Foreign Banks							
Algemene Bank Nederland	1980	1980 ⁴		1980 ⁵			
Banco Consolidado del Centro ³					1980		
Banco de Bogota (Colombia)				1980			
Banco de Santander (Spain)				1980			
Banco de Venezuela				1980 ⁵			
Banco Real	1980 ⁵	1980 ⁵					
Banque de Paris (France)		1979					
Skandinaisske Enskilda Banker					1980 ⁵		
Standard Chartered (England)		1980 ⁵					
Total	14	16	14	33	28	5	25

Includes only Banking Edges located outside the Banks headquarter city. This list also includes Edges approved in 1980, but unopened as well as Edges with applications pending.

* A jointly owned Edge by a number of U. S. regional banks. ² Application pending. ³ With First National Bank of Greater Miami. ⁴ Now an Edge Act corporation branch. The date refers to the bank's first Edge Act corporation presence in the city; not necessarily the date of restructuring of an existing Edge Act corporation into a branch of another Edge. ⁵ Approved, unopened Edge Act corporation or Edge branch.

¹ (Atlanta, Beverly Hills, Cleveland, Dallas, Minneapolis, St. Louis, Seattle)

² (Atlanta, Boston, Cleveland, Dallas, Minneapolis, St. Louis, Seattle)

³ (Cleveland, Dallas, Minneapolis, Philadelphia, Seattle)

TABLE 4

Miami International Banking—Distribution of Activity with Foreigners
(Percent of Total, June 1980)

	Com- mercial Banks	Edge Act Corpo- rations	Foreign Bank Agencies	Total
Reporting Entity's Own Claims On:				
Foreign public borrowers	5.1	5.0	19.0	6.2
Unaffiliated foreign banks	78.5	25.7	23.0	25.4
Own foreign offices		23.1	25.9	34.9
All other foreigners	16.4	46.2	32.1	33.5
Total	100.0	100.0	100.0	100.0

Reporting Entity's Own Liabilities To:

Foreign official instit.	0.5	6.6	—	3.2
Unaffiliated foreign banks	5.5	8.3	2.9	7.7
Own foreign offices	—	1.6	90.7	6.9
All other foreigners	94.0	83.5	6.4	82.2
Total	100.0	100.0	100.0	100.0

Source: U. S. Department of the Treasury.

TABLE 5

Miami International Banking—Market Share of Activity with Foreign Entities
(Percent of Total, June 1980)

	Com- mercial Banks	Edge Act Corpo- rations	Foreign Bank Agencies	Total
Reporting Entity's Own Claims On:				
Foreign public borrowers	31.7	42.8	25.5	100.0
Unaffiliated foreign banks	38.7	53.7	7.6	100.0
Own foreign offices	58.7	35.1	6.2	100.0
All other foreigners	18.9	73.1	8.0	100.0
Total	38.6	53.0	8.4	100.0

Reporting Entity's Own Liabilities To:

Foreign official instit.	11.4	88.6	—	100.0
Unaffiliated foreign banks	51.4	46.0	2.6	100.0
Own foreign offices	—	10.1	89.9	100.0
All other foreigners	65.2	34.4	0.4	100.0
Total	59.2	35.2	5.6	100.0

Source: U. S. Department of the Treasury.

capital consolidation, limited the size of Edge-organized syndicated credits.

The lack of a significant interbank market in credit participations or in acceptances keeps Miami from being a full money center. Many Miami Edges and foreign agencies sell participations of large loans to their parent and affiliate banks rather than to competitor banks. Bankers acceptances traded by Miami Edges are also typically sold to an Edge's parent bank rather than in the marketplace—this in part is due to a lower rating given in money markets for bankers acceptances issued by an Edge compared to the parent bank. Because Miami is in the same time zone as New York, and because of the speed of fund transfers, the development of a full money center in Miami is viewed by some participants as unrealistic.

Nevertheless, a limited interbank market is likely to develop. As of June 1980, Miami banking entities placed a third of their international claims with their own affiliated foreign offices abroad. These funds are placed into interbank Euromarkets and largely represent excess funds. Miami, for years, has

generated more funds from abroad than it has been able to place directly abroad.

Miami has tax advantages over New York. The Florida legislature has exempted international transactions from intangible and documentary taxes. It is considering legislation to fully exempt the proposed international banking facilities (IBFs) from all state and local taxes; New York has already done so. The establishment of IBFs in Florida could add another dimension to Miami's international financial development and encourage additional Miami Edge Act corporations, particularly from banks without New York offices.

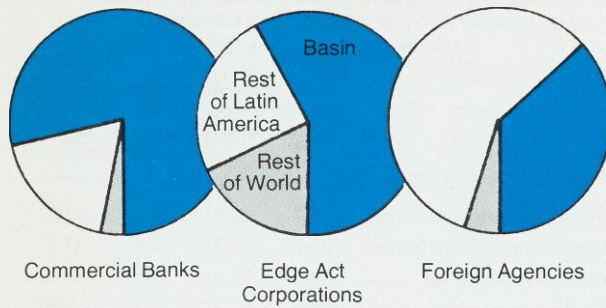
International Banking From Miami— A Perspective

In slightly more than a decade, Miami's international banking has expanded from a relatively small number of Miami-based commercial banks into a banking center with a diversified cast of participants which include major banks in the U. S. and the world.

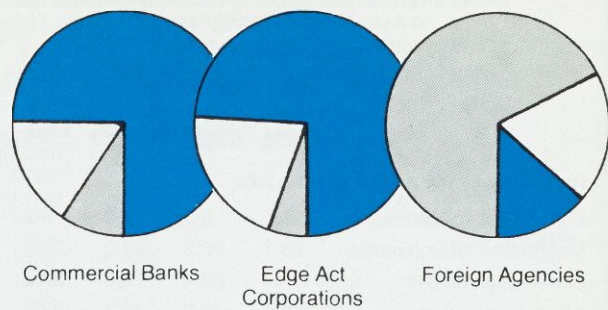
Geographic Distribution of Miami Banking Activity with Foreigners

(June 1980)

Claims On:



Liabilities to:



Still, it is important to maintain a perspective. Miami's emergence into a Caribbean and Latin American banking center is still in a development phase. The city's forte, so far, has been the development of activity with Caribbean and Latin American individuals and nonfinancial firms. Miami accounts for a sixth of U. S. bank demand and time deposits from these sources. However, less than 5 percent of U. S. parent bank lending to individuals and nonfinancial firms in the Caribbean and Latin America is out of Miami. Miami accounts for a similarly small proportion of U. S. bank claim and liability activity with Caribbean and Latin American governments,

and unaffiliated foreign banks. So Miami has ample room to grow. As interbank transactions increase, as bank clearings become more efficient, as the cast of participants expands, and as International Banking Facilities become incorporated, Miami will emerge more and more as a Caribbean and Latin American banking center. The continued expansion of Miami's international commerce, transportation, and tourism will complement this growth.

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—Donald E. Baer

The Edge Act Corporation--A Regulatory Perspective

Edge Act corporation formation was set out in the 1919 amendment sponsored by New Jersey's Senator Walter Edge. The amendment, which permits establishment of internationally oriented banking subsidiaries beyond a bank's own state, was years before its time. It was not until 1950 that a bank actually set up a "banking" Edge. The 1960s saw formation of another 20 "banking" Edge Act corporations; nearly all of these Edge Act corpo-

rations were set up in New York by California, Chicago, and regional banks.

The 1970s witnessed a quite different Edge Act era. Not only did the number of banking Edge Act corporations triple (from 24 in 1970 to 70 in 1979), but Edges also dispersed geographically, mainly to Chicago, Houston, Los Angeles, Miami, New York, and San Francisco. The Edge Act expansion is far from over. In 1980 alone, 65 new banking Edge Act corporations and their branches have applications approved or pending (more than in the first 58 years of the amendment's existence).

What has motivated this surge in Edge Act corporation formation? The answer is complex. The increasing importance of international trade and international banking to the U. S. economy explains, in part, this surge. The liberalization of Edge Act corporation regulation is also inducing renewed interest in the Edge Act corporations. These changes in Edge Act regula-

tion stem from the 1978 International Banking Act (IBA) and accompanying alterations to the Federal Reserve System's Regulation K.² Some of the most important regulatory changes on Edge Act corporations are detailed in the ensuing sections.

Edge Act Corporation Orientation

Edge Act corporations have always been limited to dealing with the international transactions of U. S. firms and with persons and entities abroad. In turn, each Edge Act corporation is required to explicitly publicize its international orientation through the requirement that its name include "international," "foreign," "overseas," or some similar word.

¹ Banking Edges, upon which this article concentrates, are regulatorily defined as those Edges regularly accepting deposits in the U. S. from nonaffiliated persons. The other class of Edge Act corporations, commonly referred to as the "investment" Edge, is often established in the same city as the parent bank and generally has confined its activities to its bank's investments abroad.

² Copies of Regulation K can be obtained by writing to the Service Department of the Federal Reserve Bank of Atlanta, P. O. Box 1731, Atlanta, Georgia 30301.

With U. S. entities, Edges have been generally confined to trade finance-oriented activity. The IBA has extended permissible Edge Act activity to include the financing of the costs of production of goods and services exported.³ The Board of Governors of the Federal Reserve System is reviewing the effects of possible extension of Edge Act corporation activity to include "full-service" banking to qualified internationally oriented business entities (e.g., a firm which conducts two-thirds or other such determined proportion of its sales abroad).

Edge Act Corporation Branching in the U. S.

Until the IBA-induced changes, each Edge Act corporation had to be separately incorporated. Formation of an Edge Act corporation required a minimum \$2-million capitalization. Edge Act corporations, as with national banks, were subject to the provision that no loan could be made to any single borrower which was greater than 10 percent of that Edge's capital and surplus. This provision, therefore, both induced larger-than-minimum capitalization and, at the same time, limited large-scale loans being booked by the Edges. Larger loans required complex accounting practices as the Edge participated portions of the loan to their parent bank or other affiliated entities.

The June 14, 1979, revised Regulation K has affected Edge capitalization and, therefore, intrinsically the size of loans that can be booked by any single Edge Act office. The revised Regulation K also permits an Edge Act corporation to establish branches in the U. S., subject to Federal Reserve approval. This revision, therefore, permits establishment of Edge branches without requiring a separate capitalization of each office. A bank with several Edge Act corporations can consolidate its capital into a single Edge Act corporation and have the separate Edge offices operate as branches. This branching provision should reduce the costs of entering and operating at new locations. Ultimately, exporters and importers should encounter larger and more competitive international banking entities.

The consolidation of individual Edge Act corporations into a single corporation with multiple branches also expands the lending limit of any single Edge office. Lending to a single borrower now constitutes the entire Edge Act corporation lending to that entity compared to the

consolidated Edge Act corporation's capital and surplus.⁴ To assure sufficient capitalization, the Board established that risk assets of Edge Act corporations shall not exceed 7 percent of the Edge's capital and surplus. This replaces the previous requirement which stated that aggregate outstanding liabilities on accounts of acceptances, monthly average deposits, borrowings, guarantees, endorsements, debentures, bonds, notes, and other such obligations could not exceed 10 times the Edge's capital and surplus.

Reserve Requirements and Deposit Liabilities

Edge Act corporations were subject to a minimum 10-percent reserve requirement on deposit liabilities. This resulted in higher required reserves on certain Edge deposits than those imposed on Federal Reserve System member banks. The 1979 revised Regulation K eliminated such separate treatment and now subjects Edge Act corporation deposits to the same reserve requirements (and interest rate ceilings) as member banks. Edge Act corporations may now accept savings deposits and issue negotiable certificates of deposit; previously, Edge Act corporations were limited to demand and certain time deposits. All Edge Act deposits must have an international orientation, either involving an entity residing or operating abroad or with U. S. entities where the deposit involves an international transaction.


The Edge as an Optional Form for Foreign Bank Establishment

Until the IBA, foreign banks were prohibited from establishing Edge Act corporations. The IBA eliminated this restriction and, in effect, gave foreign banks "national treatment" in regard to Edge Act corporation establishment.⁵ The Edge Act corporation has several distinct advantages and disadvantages as compared to a foreign bank's other options (e.g., an agency, branch, or subsidiary bank acquisition).

First, Edge Act corporations may be set up in any U. S. state and are not limited to those states accepting foreign bank agencies or branches.⁶ Second, Edge Act corporation establishment does not require reciprocity from the applying bank's home country. Several U. S. states require such reciprocity for agency and/or branch charter.⁷ The reciprocity issue is significant to many Basin economies which have placed restrictions on foreign bank operations in their own countries.

Edge Act corporations, as seen, are subsidiaries and not fully integrated components of their parent bank, as an agency or branch may be. This separation, an advantage to foreign banks where consolidation would subject the foreign office to more restrictive parent bank reserve requirements, obligatory investments, etc., may be particularly important to Latin American banks operating in highly bank-regulated economies.

Edge Act corporations may accept internationally related demand, time, and savings deposits from U. S. clients as well as from entities and persons abroad. Agencies are limited to more restrictive "credit balances" with domestic clients. Although U. S. Comptroller of the Currency interpretations permit federally chartered agencies to accept deposits from foreigners,⁸ many state-chartered agencies cannot. Florida altered its state-chartered agency treatment in early 1980 to place their state-chartered agencies on a par with Federal agencies, thereby permitting agencies to accept offshore deposits.

Edge Act corporations operate with some disadvantages compared to foreign agencies or branches. First, by definition, Edge Act corporations are restricted to international activities. Foreign bank agencies and branches, on the other hand, may lend to finance purely domestic activities. Edge Act corporations require separate incorporation and a \$2-million minimum capitalization. Lending, as seen, is compared to this capitalization. Agency lending is not so restricted. No separate capitalization is required for agency establishment, although a capital equivalency deposit is required.⁹ 

⁴ Extensions of credit to one person by a member bank and by its Edge corporation and foreign direct and indirect subsidiaries may not exceed the member bank's lending limit.

⁵ Edge Act corporation ownership, as set out by the IBA, shall at all times be held by citizens of the U. S., corporations, firms or companies majority owned by U. S. citizens, or held by one or more foreign banks or by banks in the U. S. controlled by foreign banks. Banks in the U. S. owned by foreign individuals, however, may not be majority owners of Edge Act corporations. The Board of Governors has recommended to Congress that the Board be given authority to permit majority ownership of Edge corporations by a U. S. bank controlled by foreign individuals.

⁶ The Banque de Paris Edge Act corporation in Houston is an example of a foreign bank operation in a state (Texas) which does not permit foreign bank agencies or branches.

⁷ It should be recognized that federally chartered agencies and branches do not require such reciprocity.

⁸ Federal Register, Vol. 44, No. 220, November 13, 1979.

⁹ Five percent of an agency's liabilities are to be maintained in deposits in other qualified banks or in eligible securities as a "capital equivalency deposit."

³ The provision requires that either an export order be obtained or that the items produced are identifiable as for export.

Supply-Side Tax Policy: Reviewing the Evidence

"Supply-side economics" has come to mean different things to different people. A variety of proposals now are identified with the "supply-side" label. More importantly, there is a good deal of disagreement about the evidence relating to supply-side tax policies.

What Are Supply-Side Tax Cuts?

Supply-side tax policies constitute more than a mere recognition that tax changes affect the supply of goods and services. What distinguishes supply-side policies from other policies is the manner in which tax changes affect factors of production (labor and capital, for example) and, hence, aggregate supply. Tax changes which are especially relevant to aggregate supply are changes in *tax rates*—more specifically, changes in *marginal tax rates* (the rate at which the additional increment of activity is taxed). It is tax rates at the margin (not average tax levels) which affect behavior and incentives. Proponents of supply-side tax cuts indicate that there is an important distinction between tax rates and tax revenues. They emphasize that changes in such tax rates are changes in relative prices and thus affect choice, allocation of resources, and, hence, real economic activity. Thus, tax rate changes should be thought of as *relative price* changes and not as revenue or income changes; it is the change in relative prices and not the change in income or spending that matters for aggregate supply. Proponents of supply-side economics, therefore, do *not* see tax cuts as injections of purchasing power or spending.

A Brief Review of Some Empirical Evidence

Tax Cuts and the Supply of Labor: Several empirical studies have examined the effects of tax cuts on the supply of labor. The bulk of the evidence indicates that income tax reductions

have only a limited effect on the overall supply of labor (usually measured by hours of work). Workers do not markedly increase or decrease hours of work, in other words, in response to changes in after-tax wage rates. (The elasticity of aggregate labor with respect to wages is low.) A 10-percent income tax reduction, for example, might increase hours of work for various groups of workers by anywhere from about 1 to as much as 10 percent, depending on the relevant group considered.¹

These responses are especially low for prime age male workers. A 10-percent income tax reduction, for example, might increase labor supplied by such workers by about 1 percent.² This evidence, then, indicates that tax cuts would have little effect on hours worked by prime age males. Secondary workers (mostly married women) together with younger and older workers make up about one-half of the total work force. Those groups have been found to be much more responsive to changes in after-tax wage rates.³

Tax Cuts and Savings: Although few studies have carefully examined this issue, most studies have found that saving is not responsive to changes in interest rates. The conventional view holds that tax cuts which would increase the after-tax rate of return to saving would have little or no effect on increasing the supply of saving. Because of this, some large econometric models do not include mechanisms representing the effect of taxes on personal savings.

¹ See, for example, Harvey Rosen, "What Is Labor Supply and Do Taxes Affect It?", *American Economic Review*, May 1980; Don Fullerton, "On the Possibility of an Inverse Relationship Between Tax Rates and Government Revenues," Working Paper Series, National Bureau of Economic Research, No. 467; and Jerry Hausman, "Income and Payroll Tax Policy and Labor Supply," paper prepared for a conference on "The Supply-Side Effects of Economic Policy," Washington University and the Federal Reserve Bank of St. Louis, October 24-26, 1980. The labor studies referred to here are cross-section studies and, hence, are not associated with a time dimension. Consequently, they provide no information as to the timing of the response.

² See, for example, Hausman, *op. cit.*, p. 25.

³ See Rosen, *op. cit.*, p. 171. (Elasticities for married women workers, for example, have been estimated to be as high as 1.0.)

Supply-side tax policies are policies which change the marginal tax rate, not average tax levels. Empirical and historical evidence suggests that conventional macroeconomic models may be unable to detect supply-side effects of changes in marginal tax rates.

Recently, however, some evidence has been provided which contradicts this accepted doctrine. Michael Boskin, employing more relevant measurements of interest rates, found a substantial interest elasticity of saving (about 0.4). While this is not an enormous elasticity by conventional standards, it is substantially larger than virtually all previous estimates and the conventional wisdom.⁴ Results indicating a substantial interest elasticity of saving have also been recently found by Evans, Ture, and especially King, Summers, and Boskin and Lau.⁵ This recent evidence tends to indicate that the interest elasticity of saving is larger than conventionally believed. (Some of these recent estimates have been as high as 2.0 or 2.5!)⁶ The implication is that tax cuts which increase the real after-tax return to saving would work to induce an important increase in saving.

Tax Cuts and Investment: Whereas the conventional doctrine holds that tax cuts have relatively small effects on the supply of saving and labor, it accepts the idea that tax changes can importantly affect investment. This view suggests that tax cuts directed at investment may be the most potent area to stimulate aggregate supply via their effect in increasing the capital stock. Otto Eckstein, for example, suggests that tax cuts for investment are the best

way to boost real GNP. The effect on investment and the capital stock, of course, depends on the size and type of the tax cut. A study by Eckstein indicates that the elasticities of investment with respect to taxes (over the 1982-85 period) for various tax policies are the following:⁷

corporate income tax rate	-0.3
depreciation allowances	-1.1
investment tax credit	-0.9

As an illustration of the potency of depreciation allowances, Eckstein studied the so-called 10-5-3 proposal and concluded that if this proposal had been enacted in 1980, real business fixed investment would have been \$20.9 billion higher in 1984. (Moreover, during the phase-in period before 1984, additional investment would have averaged \$10 billion a year.)⁸ Several authors have contended that if judiciously chosen, tax cuts in the investment area could lead to a substantial increase in investment without any large revenue loss to the government. They have indicated that it is possible for certain of these business tax cuts to be self-financing.⁹

Tax Cuts and Aggregate Supply: What does all this mean for aggregate supply? The conventional view holds that tax cuts do—to some extent—increase the supply of labor, saving, investment, and, hence, aggregate supply. But the conventional view holds that these effects will not be very large.

Eckstein, for example, simulated Kemp-Roth type income tax cuts on the DRI model.¹⁰ He concluded that if Kemp-Roth had been introduced in 1980, by 1985, real GNP would have

⁴ Michael J. Boskin, "Taxation, Saving, and the Rate of Interest," *Journal of Political Economy*, Vol. 86, No. 2, Part 2, April 1978, p. 54. Boskin's study employs annual time series data. His results, then, imply that a 10-percent increase in the after-tax rate of return would increase saving by 4 percent per year. The other studies mentioned can be interpreted similarly.

⁵ Michael K. Evans, "An Econometric Model Incorporating the Supply-Side Effects of Economic Policy," paper prepared for a conference on "The Supply-Side Effects of Economic Policy," October 24-25, 1980; Norman Ture, testimony before the Joint Economic Committee, *Forecasting the Supply Side of the Economy*, Ninety-Sixth Congress, Second Session, May 21, 1980; M. King, "Savings and Taxation," G. A. Hughes and G. M. Heal, eds., *Essays in Public Policy* (London, 1980); L. H. Summers, "Tax Policy in a Life Cycle Model," National Bureau of Economic Research Working Paper No. 302, 1978; and Michael Boskin and L. J. Lau, *Taxation, Social Security and Aggregate Factor Supply in the United States*, Washington, 1978.

⁶ See, for example, Summers, *op. cit.*, King, *op. cit.*, and Lawrence H. Summers, "Tax Policy and Corporate Investment," paper presented at the St. Louis Conference on "Supply-Side Effects of Economic Policy," October 24, 1980, p. 32.

⁷ Otto Eckstein, "A Time for Supply Economics," testimony submitted to the Joint Economic Committee, 96 Cong., 2 Sess., May 21, 1980.

⁸ Otto Eckstein, "Tax Policy and Core Inflation," a study prepared for the use of the Joint Economic Committee, 96 Cong., 2 Sess., April 10, 1980.

⁹ See, for example, Lawrence H. Summers, "Tax Policy and Corporate Investment," paper presented at the St. Louis conference on "Supply-Side Effects of Economic Policy," October 24, 1980.

¹⁰ See Eckstein, "A Time for Supply Economics," *op. cit.*

increased by 2.6 percent and potential GNP would have increased by 1.9 percent. (The elasticity of potential output with respect to personal income taxes is small, i.e., -0.05 .) Thus, according to Eckstein, personal income tax cuts have little effect on aggregate supply. He indicates that the 50-percent increase in the personal income tax rate over the last 15 years has reduced potential GNP by only $2\frac{1}{2}$ percent. Of course, this consensus view of the effect of Kemp-Roth type tax cuts is premised on little or no response of either labor or capital to a reduction in personal income tax rates. Most large econometric models, it should be remembered, are essentially demand-oriented, income-expenditure models with little or no supply-side constructs built into them.

Supply-side models, on the other hand, have been built by Laffer-Ranson, Evans, Ture, and others. The Evans model includes larger responses of savings and labor to a cut in taxes. As a consequence, Evans indicates that you get important supply-side effects in three to five years with a Kemp-Roth type tax cut. Unemployment will be reduced by 2.4 percent by 1985 if the tax cuts are not offset by government spending decreases and by 1.8 percent if they are offset. (Inflation is slightly worsened—up by 1.8 percent in 1985—with these tax cuts if they are not offset by government spending cuts, but it is substantially improved—down by 5 percent—if these tax cuts are accompanied by spending limits.)¹¹

Tax Cuts and Tax Revenues: There is little empirical evidence relating to the so-called Laffer curve (according to which higher tax rates eventually lead to lower tax revenues). Conventional opinion often tends to equate tax rate cuts with tax revenue cuts so that both tax rates and tax revenue are often presumed to fall in the same proportion. However, since the conventional view concedes that Kemp-Roth type tax cuts induce some small increases in aggregate supply, it is forced to concede that feedback effects do exist and, consequently, tax

revenues will proportionally fall by less than will tax rates. Hausman, for example, estimates that a 10-percent cut in tax rates will result in a fall of tax revenues by 6.1 percent.¹² However, this conventional view emphasizes that Kemp-Roth type tax cuts are not self-financing (especially in the short run).

Some evidence exists which indicates that tax cuts aimed at specific sectors (i.e., investment), specific groups (i.e., high income groups), or specific localities may be self-financing. In other words, the Laffer effect (of self-financing tax cuts) is more likely to exist for narrowly based taxes than for broadly based taxes. The only empirical study of the Laffer curve (for labor) at the macro level—by Fullarton—indicates that the U. S. could conceivably be operating in the area where tax rate cuts lead to tax revenue increases. For this to be the case, however, labor supply elasticity would have to be higher than most estimates now suggest.¹³

The supply-side models of both Evans and Laffer-Ranson indicate that Kemp-Roth tax cuts are self-financing in a longer run time frame. The Evans' model, for example, indicates that such tax cuts would bring about a surplus of \$78 billion by 1985, even if government spending continued to grow at a 10-percent rate. The Laffer-Ranson model indicates that, by the fifth year after passage, Kemp-Roth would increase total aggregate tax revenue above what it would have been in the absence of a tax cut.¹⁴

Some Criticisms of the Evidence

Why hasn't the supply-side theory received more empirical support? Is the theory wrong? Are the appropriate data not available? Is the theory difficult to test? There are various

¹² See Hausman, *op. cit.* This study is based on cross-section data. See footnote 1.

¹³ Fullarton's research, for example, indicates that high elasticities of labor supply with respect to tax rates—elasticities at least as high as 1.0 (together with a tax rate of at least 30 percent)—would make the Laffer effect plausible. It should be remembered that Fullarton's paper applies only to labor, whereas the Laffer curve applies to all factors of production.

¹⁴ See Evans, *op. cit.*, and Arthur Laffer and David Ranson, "The 'Prototype Wedge Model': A Tool for Supply-Side Economics" (H. C. Wainwright & Co., Economics, September 14, 1979).

¹¹ See Evans, *op. cit.*

reasons to believe that a good deal of the conventional evidence may be misleading.

Measurement Problems: One problem with much of the evidence relates to measurement. The critical tax variable for supply-side economists is the marginal tax rate. Marginal tax rates differ across individuals and sectors of the economy. Moreover, because of inflation and economic growth, they change over time. Hence, there are many conceptual difficulties associated with measuring an aggregate marginal tax rate. Consequently, average tax rates and even levels of tax revenue are often employed as proxies for marginal tax rates in various empirical studies. These variables can obscure the effects that rising marginal tax rates may have on economic activity. In short, many of the studies purporting to test supply-side propositions have employed the wrong tax variable.

Much of the labor supply evidence uses hours worked as a proxy for labor supply. Because of the institution of a 40-hour workweek, this variable would not be expected to be responsive to tax changes for some of the labor force. However, other variables relating to the supply of labor may still respond to tax incentives. Variables, such as motivation, entrepreneurship, work intensity, the quality of work, innovation, managerial skills, and ambition, although difficult to measure, may respond to tax incentives and be very important for the supply of labor. Tax cuts may also result in less absenteeism, later retirement, and shorter periods of unemployment. They may encourage people to assume more responsibility and accumulate more human capital. These effects are not measured in the conventional empirical work. If they were included, the response of the labor supply with respect to tax changes would undoubtedly be greater than is normally believed to be the case.

Finally, these studies do not recognize the effect of the so-called under-ground economy. The supply of labor to the market might be found to be more responsive to tax changes if this could be measured. Virtually all economists recognize that the Laffer curve works better for

narrowly based taxes than for broadly based taxes. The existence of the under-ground economy (plus various tax loop-holes) implies that personal income tax is much more narrowly based (and is becoming more so) than is commonly believed. Laffer effects, then, may be more likely to occur than is conventionally believed.

Some Criticisms of the Large Econometric Models: There are several reasons to believe that the large macroeconomic models often used to simulate tax policies such as Kemp-Roth will not detect supply-side effects of tax cuts. In general, these models are demand-oriented, income-expenditure models with underdeveloped supply-side constructs. Being income-expenditure models, they emphasize spending flows rather than relative prices. Consequently, they are unlikely to detect supply-side effects of changes in marginal tax rates. As a result, they exaggerate revenue losses.

Secondly, taxation is often assumed to have no independent effect on saving in most models. As Evans has indicated, changes in saving do not translate into changes in investment in many of these models. Instead, saving retards demand whereas investment increases it.

Thirdly, many *general* effects of tax rate reductions are not captured in many of these studies. For example, the common notion implicit in many studies of Kemp-Roth that taxes on individuals only affect labor income is simply not correct. The individual income tax affects small businesses as well as income from interest, dividends, and capital gains. Personal income taxation, then, is hardly irrelevant to capital formation.¹⁵ A reduction in income tax rates, in fact, affects at least four relative prices at the same time:

1. The price of leisure *vis-a-vis* work. Leisure becomes more expensive in terms of foregone income. (At the margin, then,

¹⁵ Alan Reynolds, "Individuals and the Tax Question," *Wall Street Journal*, October 24, 1980; see also *World Report*, First Chicago Corporation, July-August 1980.

such a tax rate reduction lessens the attractiveness of tax-free unemployment and welfare benefits relative to work.)

2. The price of current consumption *vis-a-vis* future consumption, i.e., saving and investment. Current consumption becomes more expensive in terms of future income foregone by not saving or investing.
3. The return to work in the market economy *vis-a-vis* work in the nonmarket (underground) economy.
4. The return on investment in the taxable sector *vis-a-vis* the return on investment in tax shelters.

Consequently, at the margin, resources will shift from leisure to work, from consumption to saving and investing, from the underground economy to the market economy, and from investments in tax shelters to more productive taxable investment.

None of the studies of Kemp-Roth or econometric models contain all of these relative price changes and capture all of these resource shifts into saving and investment as well as into market labor. If they did, the response of aggregate supply to reduction in tax rates would undoubtedly be larger than is commonly supposed.

Time Frames: Finally, supply-side economics relates to the long run. Many of the studies, as well as the large macroeconomic models, focus on a relatively short-term time frame. Alice Rivlin, in her testimony before the Joint Economic Committee on supply-side economics, for example, pointed out the inadequacies of macroeconomic models in dealing with issues relating to long-run economic growth.¹⁶ These large macroeconomic models were essentially built to analyze short-term stabilization policies, not policies relating to long-run growth. All economists recognize that elasticities become larger the longer the time frame under consideration. Hence, supply-side economics becomes more relevant the longer the time frame.

¹⁶ Alice Rivlin, *Forecasting the Supply Side of the Economy*, op. cit., pp. 6, 7.

Supply-side economics, then, has nothing to do with stabilization policy; it pertains to long-run economic growth.

Some Broader Historical Evidence

Because much of the econometric evidence may be inadequate, we should consider other sources of information about supply-side tax policy. A great deal of "casual evidence" shows that in various historical episodes, tax rate cuts were associated with tax revenue increases—particularly for narrowly based taxes (such as tariffs).¹⁷ During the Gladstone era in England, for example, various tax rates were reduced and economic growth and tax revenues increased.¹⁸ Historical examples of cuts in income taxes are not as numerous. The U. S., for example, has had very little historical experience with significant reductions in federal income tax rates. The Mellon tax cuts in the 1920s and the Kennedy tax cuts in the early 1960s provide probably the only good examples. Although no extensive empirical work has been done on the Mellon tax cut episode, the casual evidence seems to support the supply-side position. Specifically, the tax cuts—which lowered *marginal* rates of taxation—were associated with both rapid economic growth and increases in tax revenues.¹⁹

Marginal income tax rates were also reduced in the early 1960s. Although there are always important differences between various historical periods, the Kennedy tax cuts provide a useful example of the type of impact that a Kemp-Roth tax cut might have. Specifically, in 1964, marginal tax rates were cut across the board from 91 percent to 70 percent at the top and from 20 percent to 14 percent at the bottom.

¹⁷ See, for example, Robert E. Keleher and William P. Orzechowski, "Supply-Side Effects of Fiscal Policy: Some Historical Perspectives," Working Paper Series, Federal Reserve Bank of Atlanta, August 1980.

¹⁸ *Ibid.*

¹⁹ See, for example, *ibid.*; Andrew W. Mellon, *Taxation: The People's Business* (MacMillan & Company, 1924); Jude Wanniski, *The Way the World Works* (Basic Books, 1978); and Jack Kemp, "Kemp on Stein: Are We All Supply-Siders Now?", letter to *Wall Street Journal*, April 4, 1980.

Evidence indicates that the Kennedy tax cuts worked, but not for reasons the Keynesians who designed them have stated. Specifically, Denison's estimate of the gap between actual and potential GNP for 1962 and 1963 indicates that this gap may have been too small for demand-side policies to have created the growth in real GNP that actually ensued.²⁰ Something else had to have caused aggregate supply to increase. What happened appears to be fully consistent with an increase in aggregate supply in response to the various tax incentives which were created. This assertion is fully supported by two recent empirical studies by Canto, Joines, and Webb (1979 and 1980).²¹

The evidence with respect to tax revenues also seems to support the supply-side view. Specifically, the work by Canto, Joines, and Webb indicates that the Kennedy tax cuts caused only a small loss of revenues from the individual income tax by 1966—a loss which was largely offset by gains in corporate and other tax receipts from the increased real economic growth.

Conclusions

- A supply-side cut in income and business taxes will probably result in some increase in the supply of labor, saving, investment, and, hence, in aggregate supply.

- Because of this additional real growth, the tax base will increase and, hence, revenues will not fall in proportion to tax rates. In short, the deficit will not be as large as many have predicted because of these feedback effects. Moreover, with increased real economic growth, some government spending (such as transfers) may decline, further minimizing the deficit.

- Despite the increase in aggregate supply, the tax cuts will produce an increase in the deficit, at least in the short run. However, to the extent that the tax cuts create an increase in saving, the deficit may be, in part, financed without increasing the money supply.

- In the long run, the supply-side effects should be more potent and the deficit should be less worrisome. Supply-side economics pertains to long-run economic growth policy rather than short-run stabilization policy. If lower tax rates increase deficits for two to three years but result in a stronger economy after that, in the long run, future taxpayers may inherit both a stronger economy and a smaller debt burden.

In assessing the effects of such tax cuts, several other factors should also be mentioned. First, there is a large amount of evidence which indicates that tax rates for individuals, as well as for businesses, have increased substantially in recent years. As classical economists repeatedly and forcefully indicated, when people spend a significant amount of time and resources in order to circumvent or avoid taxes, tax rates probably are too high. (The underground economy may be telling us something.) In addition to being too high, tax rates on labor, saving, and investment are increasing every day due to inflation. In addition to increases due to inflation, Social Security tax increases, as well as increases in windfall oil profits taxes, are already scheduled. In short, tax rates are not only too high but are increasing every day and scheduled to increase even further in the future. Thus, to some extent, a Kemp-Roth type tax cut will simply be offsetting these past, present, and future increases in tax rates.

In addition, although a few supply-side proponents still contend that tax cuts can be made without regard to government spending, many supply-side economists assert that government spending restraints should accompany the tax cuts wherever possible. If such restraints do accompany tax cuts, the deficit will be smaller and less worrisome.

—Robert E. Keleher



²⁰ See Paul Craig Roberts, "The Economic Case for Kemp-Roth," *The Economics of the Tax Revolt*, Arthur B. Laffer and Jan P. Seymour, eds. (Harcourt Brace Jovanovich, 1979), p. 61; Denison's estimates are published in E. F. Denison, *Accounting For Slower Economic Growth* (Brookings Institute, 1979).

²¹ Victor A. Canto, Douglas H. Joines, and Robert I. Webb, "Empirical Evidence on the Effects of Tax Rates on Economic Activity," unpublished manuscript, University of Southern California, September 1979, and Victor A. Canto, Douglas H. Joines, and Robert I. Webb, "The Revenue Effects of the Kennedy Tax Cuts," unpublished manuscript, University of Southern California, November 1980.



The 1981 Monetary Targets

Excerpts from testimony before the House Banking Committee,
February 25, 1981

Paul A. Volcker

Chairman, Board of Governors of the Federal Reserve System

Fed Study Upholds 1979's Reserve Targeting Technique

As you well know, 1980 was a tumultuous year for the economy and financial markets. While most measures of the monetary and credit aggregates grew at or very close to our target ranges for the year as a whole, there was considerable volatility from month to month or quarter to quarter.

Moreover, interest rates moved through a sharp cycle, and had considerable instability over shorter time spans.

In the light of these developments, I initiated in September a detailed study by Federal Reserve staff of the operating techniques adopted by the Federal Open Market Committee in October, 1979, looking, among other things, to the question of whether the particular techniques we employed contributed importantly to the observed volatility. Those techniques, as described in our Report, place emphasis in the short run on following a path of non-borrowed reserves.

1. The work confirms that the week-to-week money supply figures are subject to a considerable amount of statistical "noise"—unpredictable short-run variations related to the inherent difficulty of computing reliable weekly seasonal

adjustment factors and other random disturbances. One analysis suggests the random element in the weekly M1 data, as first published, is about \$3 billion, plus or minus. While those variations average out over time, they could amount to \$1½ billion on a monthly average basis, equivalent to a change of 4½% at an annual rate.

2. No clear evidence was found that, in the present institutional setting, alternative approaches to reserve (or monetary base) targeting would increase the precision of monetary control.

3. Pursuing the closest possible short-run control of the money supply by any technique entails a willingness to tolerate large changes over short periods of time in short-term interest rates—greater than were experienced in 1980.

4. Interest rate instability associated with the new techniques per se is extremely difficult to distinguish from other sources of interest rate fluctuation. However, the major swings in interest rates during the year—historic peaks in early 1980, the sharp drop in the spring, and the return to historic highs—can be traced to disturbances in the economy itself, to the imposition and removal of credit controls, to the

budgetary situation, and to shifting inflationary expectations. Indeed, while much compressed in time, the broad interest rate fluctuations were, in relative magnitude, not out of keeping with earlier cyclical experience.

5. Money supply fluctuations last year over periods of a quarter or so were probably larger than might have been expected on the basis of econometric analysis of reserve control techniques. The inference from the study is that the credit control program and other external "shocks" could have been responsible. At the same time, the evidence is that the quarterly deviations in money growth from the trend for the year did not have an important influence on economic activity. If money growth had somehow been held constant, short-run interest rate variability would have been still larger.

As a personal observation, I would emphasize that swings in the money and credit aggregates over a month, a quarter, or even longer should not be disturbing (and indeed may in some situations be desirable), provided there is understanding and confidence in our intentions over more significant periods of time.

1981 Targets Aim to Further Reduce Money Growth

The 1981 targets were set with the intention of achieving further reduction in the growth of money and credit, returning such growth over time to amounts consistent with the capacity of the economy to grow at stable prices. Against the background of the strong inflationary momentum in the economy, the targets are frankly designed to be restrictive. They do imply restraint on the potential growth of the

nominal GNP. If inflation continues unabated or rises, real activity is likely to be squeezed. As inflation begins noticeably to abate, the stage will be set for stronger real growth. Monetary policy is, of course, designed to encourage that disinflationary process. But the success of the policy, and the extent to which it can be achieved without great pressure on interest rates and stress on financial markets that have already been heavily strained, will also depend upon other public policies and private attitudes and behavior.

Planned and Actual Growth of Monetary and Credit Aggregates (percent changes, fourth quarter to fourth quarter)

M-1 targets and growth before and after shifts into ATS/NOW accounts

	After adjustments		Before adjustments	
	M-1A	M-1B	M-1A	M-1B
Planned for 1980	3½ to 6	4 to 6	2¼ to 4¾(b)	4½ to 7(b)
Actual 1980	6½(a)	6¾(a)	5	7¼
Planned for 1981	3 to 5½	3½ to 6	-4½ to -2(c)	6 to 8½(c)

M-2, M-3 and bank credit targets and growth

	M-2	M-3	Bank Credit
Planned for 1980	6 to 9	6½ to 9½	6 to 9
Actual 1980	9.8	9.9	7.9
Planned for 1981	6 to 9	6½ to 9½	6 to 9

- (a) Reflects current estimates of the impacts on M-1A and M-1B of shifting from demand deposits and other assets into new ATS and NOW accounts not taken into account in 1980 targets. Growth of M-1A is about 1¼ percentage points larger than actual recorded data after adding back in shifts out of demand deposits; growth of M-1B is reduced by about ½ percentage point after taking out shifts into M-1B from savings accounts and other assets.
- (b) Target adjusted to reflect NOW/ATS account shifts referred to in note above.
- (c) Reflects tentative assumptions regarding impacts of shifts into new ATS and NOW accounts in 1981. Growth of M-1A is assumed to be reduced by roughly 7½ percentage points by transfer from demand balances to NOW/ATS accounts; growth of M-1B is assumed to be increased by 2½ percentage points by transfer from sources outside of M-1A. These assumptions will be reviewed from time to time.

NOW Accounts Distort Figures

I must emphasize that both M1 series, as actually reported, are currently distorted by the shift into interest-bearing transaction accounts. Those shifts were particularly large in January, when for the first time depository institutions in all

parts of the country were permitted to offer such accounts. As the year progresses, we anticipate the distortion will diminish, as has already been the case in February. However, any estimate of the shifts into NOW-type accounts for 1981 as a whole, and the source of those funds, must be tentative.

Monetary Policy Alone Cannot Deal with Inflation

I know that the case is sometimes made that monetary policy can alone deal with the inflation side of the equation. But not in the real world—not if other policies pull in other directions, feeding inflationary expectations, propelling the cost and wage structure upwards, and placing enormous burdens on financial markets with large budgetary deficits into the indefinite future.

That is why it seems to me so critical—if monetary policy is to do its job without unduly straining the financial fabric—that the Federal budget be brought into balance at the earliest practical time. That objective cannot be achieved in a sluggish economy. Moreover, tax reduction—emphasizing incentives—is important to help lay the base for renewed growth and productivity. For those reasons, the linchpin of any effective economic program today seems to me early, and by past standards massive, progress in cutting back the upward surge of expenditures, on and off budget. 

New Competition for Consumer Financial Business

An article in the February *Economic Review* compared the size and structure of southeastern financial institutions as they enter a new phase of competition. This article extends that discussion and focuses in more detail on the probable shape of the new competition.

The Depository Institutions Deregulation and Monetary Control Act (MCA) affects four types of financial institutions: commercial banks, savings and loan associations, mutual savings banks, and credit unions. They already had definite family resemblances; now they may become identical quadruplets—at least in consumers' eyes. The MCA gave all commercial banks, mutual savings banks and savings and loan associations powers to offer NOW accounts to individuals. It allowed federally insured credit unions to offer share drafts. These powers complement each institution's existing powers to offer time and savings deposits. Thus, consumer deposit

powers will become closely parallel for all institutions. On the lending side, S&Ls received new powers to offer second mortgages, credit cards, and consumer installment credit. They were also allowed to offer trust services and operate remote automated teller machines. Insured credit unions had already received authority to offer long-term residential mortgages. Thus, as of December 31, 1980, the four types of institutions had parallel powers in consumer lending and consumer deposits.

The new powers could rapidly increase the number of financial institutions offering full consumer services. Previously, commercial

banks had an exclusive hold on this distinction. Since many consumers prefer dealing with a single banking institution for all services, banks drew a significant competitive edge from the situation. If the thrift institutions use their new powers, however, banks stand to lose that edge.

Three crucial questions arise from this expansion of powers: What are the characteristics of these institutions with new powers? How many will use the new powers to become full-service competitors of banks? What do those answers imply for the future? Although these questions are answered here in terms of the Sixth District states, the answers apply generally to the nation. Florida and Mississippi are near opposite ends of a national continuum of relative number and size of thrift institutions; the region's other states are in-between.

First, **what are the important characteristics of the institutions?** The region has 2,135 commercial banks. When multibank holding company subsidiaries are lumped into single organizations, that number is reduced to 1,720 (of the nation's 12,700). These banking organizations (banks for short) operate 6,940 offices. There are 564 savings and loans and 2,673 credit unions (and no mutual savings banks) in the region. On January 1, 1981, then, the total number of institutions able to offer full consumer services jumped from 1,720 to nearly 5,000. These institutions operate more than 12,000 offices. (Comparable national figures are 40,000 institutions and 96,000 offices.)

S&Ls and credit unions generally trail commercial banks in aggregate deposits in the region. Only in Florida are they larger overall than banks. Their aggregate share is smallest (22 percent) in Mississippi. Credit union contribution to this aggregate is modest indeed, accounting for but 3 percent in the region.

However, S&Ls and credit unions already hold substantial proportions of certain types of consumer business. Their share of transactions accounts is still low, but they hold around 18 percent of consumer installment loans. They hold more than half of consumer time and savings deposits in Florida, Georgia, and Louisiana and around 90 percent of single-family mortgage loans in all states but Mississippi and Tennessee. Omission of busi-

ness done by consumer finance companies and mortgage companies owned by banks and bank holding companies inflates the nonbank institutions' share of consumer and mortgage loans to some extent. The fact remains, however, that the nonbank institutions have already made substantial inroads in consumer financial business. They have plenty of opportunity to cross-sell their new services if they desire.

In addition to having substantial market penetration in some types of consumer business, individual S&Ls are considerably larger than individual banks in some areas. This pattern is most evident in Florida and Georgia, where deposits of the median S&L are seven times and three times, respectively, those of the median bank. The median S&L is also larger in Alabama and Tennessee. Banks are typically larger in Louisiana and Mississippi. S&Ls rank among the 10 largest depository financial intermediaries headquartered in each of the region's states except Louisiana. Credit unions are typically quite small. The region's median union has only about \$600,000 in shares.

Finally, under present rules, S&Ls have fewer expansion restrictions. They are allowed by the Federal Home Loan Bank Board statewide branching both by *de novo* branch and by merger. They are no longer required to show that opening new branches will have no ill effects on the branching institution. In the region, statewide branching is unavailable to banks in any state. Statewide bank holding companies may operate in Alabama, Florida, Georgia, and Tennessee, but Tennessee severely restricts and Georgia prohibits acquisition of *de novo* banks. Since branching is a less expensive method of expansion, S&Ls have a distinct advantage over banks in all of the region's states.

How many of the institutions potentially offering the same full line of consumer financial services will actually offer these services? For a start, we can ignore most credit unions as full-service competitors. Most are quite small. Unless they multiply their size several times, they will be unable to capture scale economies available in consumer lending and deposit operations. The common bond requirement makes expansion difficult for most. They may, however, compete effectively in some lines of business, in some

places—particularly when a subsidy assures that they cover their costs despite their small size.

Savings and loans are different. They are generally at least as large as banks and have substantial existing consumer deposit and mortgage business. Many will be aggressive. The New England NOW experience indicates that the thrifts have embraced interest-paying transactions accounts just as the public has. A recent survey done by this Bank found that more than 90 percent of the District's savings and loans began offering NOW accounts from the beginning of 1981. If most consumers still prefer one-stop "banking," S&Ls will likely be drawn into the other new services—consumer loans, second mortgages, credit cards, and trust services. This will make them full-service competitors of banks. Savings and loan-oriented publications have been full of "how to" articles; consultants are still doing a land office business. Larger associations have been aggressively advertising full-service plans.

Larger credit unions and most S&Ls could well account for a 40-percent increase in the number of full-service consumer financial institutions in the Sixth District states and about the same percentage gain in the nation. The increase will not be distributed equally. Florida and Georgia, where S&Ls and credit unions are larger and more active already, will feel it more than Mississippi and Tennessee.

What are the implications of such an increase? Most obviously, S&Ls and some credit unions will begin to be more like commercial banks—in financial statements and in management problems.

In addition, a large jump in the number of competitors in any line of business with some scale economies generally leads to lower profit margins, less tolerance for mistakes by the market, and, consequently, more incentive for institutions to exit the market. Failure and liquidation are generally frowned on as methods of exit for insured financial institutions in this country. Thus, this added incentive to exit will probably accelerate the consolidation of financial institutions.


Consolidation implies loss of some competitors, growth by others. Who will disappear and who will grow? Larger, well-managed S&Ls offering a full line of

services and with more liberal branching powers are likely to be particularly threatening to rural and suburban banks and S&Ls, especially the smaller, consumer-oriented institutions. The large S&Ls will be able to enter the smaller institutions' markets inexpensively with branches and offer consumers all the services that banks can. In addition, for up to six years, they may retain their regulatory interest differential on some types of time and savings deposits. Some smaller institutions are likely to disappear. Larger S&Ls will gain, but they may not now merge with or acquire banks. Small banks will have to look to larger banking organizations for relief.

If this consolidation proceeds rapidly, pressures to do away with geographic and interinstitutional barriers to consolidation will rise. These pressures would be particularly strong in cases of weakness among smaller institutions in states like Mississippi with few large banks, S&Ls, or credit unions. A bill allowing interstate holding company acquisitions of large failing banks has received strong Federal Reserve support, but it has not passed. Pressure for this and more extensive legislation will no doubt continue.

There will also be pressure for credit unions to consolidate in order to achieve scale economies. That would center attention on the common bond requirement which limits mergers and on merger procedures for these institutions. We can expect political activity on these fronts as well.

Conclusions

The new consumer powers will increase the number of full-service financial institutions. Many of the new institutions are neither runts nor johnnys-come-lately to consumer financial services. Consolidation will result from the increase in competitors, and the large S&Ls and banks may benefit most. Political and regulatory action for interstate and interinstitutional mergers and for credit union mergers will probably follow. The era which opened officially on January 1, 1981, offers new opportunities to consumers. It also offers problems for bankers, thrift institution managers, and regulators alike. 

—B. Frank King

NOW Competition: S&Ls Start Fast, Banks More Conservative

Preliminary data indicate that S&Ls in the Southeast are more aggressive in their pricing strategy than commercial banks. Banks which are "defensive" tend to be those with a high percentage of household demand balances in their total demand accounts.

Almost all savings and loan associations and commercial banks in the Southeast are offering NOW accounts (interest-paying checking accounts), but there are wide variations in pricing.

The S&Ls show more aggressiveness in their pricing strategies. A December survey by the Federal Reserve Bank of Atlanta predicted that S&Ls would price lower than banks, and recent reports from the institutions to the Federal Reserve confirm the survey's indications.

Seventy-seven percent of S&Ls surveyed are requiring

minimum charge-free balances of only \$500 or less. Ninety-one percent of banks, on the other hand, have set minimum balances at or above \$1,000.

Banks and S&Ls have other differences on service charges and balance requirements.

--54 percent of the banks assess charges on both a monthly and per-check basis, compared to only 19 percent of the S&Ls. Seventy-nine percent of the S&Ls make a monthly charge only.

--Only 16 percent of the banks include balances in other accounts (such as regular passbook savings accounts) as

part of the required minimum. The figure is higher (27 percent) for S&Ls.

Commercial bank marketing strategy tends to be defensive, although a significant minority (32 percent) of banks describe their strategy as aggressive. "Defensive" banks tend to be those with a high percentage of household demand balances (HDBs) in their total demand balance (TDB). The higher the household share of TDB, the higher generally is the minimum balance for charge-free NOW accounts. The "aggressive" banks tend to have a lower percentage of HDBs and generally offer NOWs with no

service charges and with minimum balances lower than "defensive" banks.

These "aggressive" banks also tend to split evenly between a per month service charge and per month plus per check service charge if the balance falls below the required minimum. The "defensive" banks tend to structure service charges on a per month plus per check basis.

The average service charge for below-minimum balance is \$7.55 for the greater-than-50 percent HDB banks and \$6.95 for the less-than-50 percent HDB group.


Banks also show a willingness to accommodate customer preferences by offering variety in their product. Some banks are allowing customers to pick a bundle of bank services from several choices. Banks with a

"defensive" marketing strategy are willing to offer charge-free NOWs if a minimum balance is maintained in another time account.

S&Ls are more aggressive in pricing, but banks are slightly more likely to offer NOWs. Ninety percent of S&Ls and 97 percent of commercial banks began offering NOW accounts as soon as they became legal on December 31, 1980. In addition, 19 of 26 credit unions surveyed were already offering share draft accounts (similar to NOW accounts).

Thrift institutions in the Sixth District are reacting to the new accounts with considerably more enthusiasm than thrifts in New England did when NOWs were first offered there. Two years after NOWs began in New England, only one-half to three-fourths of thrifts were

offering NOWs. The Southeast surpassed that total at the outset.

In Mississippi and Louisiana, however, where bank-thrift competition is less intense, only two-thirds and three-fourths, respectively, of the S&Ls offered NOWs immediately—compared to 100 percent in Alabama, Florida, Georgia and the District portion of Tennessee. Larger institutions (with deposits over \$100 million) in the District are somewhat more likely to offer NOWs than smaller ones, by a margin of 95 to 85 percent. Similarly, more larger credit unions (deposits over \$25 million) are offering share draft accounts than smaller ones (in the \$5- to \$25-million range). No significant differences have emerged between urban and rural institutions. 

—William N. Cox III

The following tables present the results of surveys conducted by the Federal Reserve Bank of Atlanta in December 1980. The surveys included 26 credit unions, 60 savings and loan associations, and 127 commercial banks in the Sixth District.

TABLE 1

CREDIT UNIONS: Share Draft Survey, Sixth Federal Reserve Districts (sample of 26 institutions, December 1980)						
State/Size*	Offering Share Drafts?			Service Charge If Offered?		
	\$5-25m.	Over \$25m.	All	\$5-25m.	Over \$25m.	All
Alabama	1 Out of 3	2 out of 2	3 out of 5	0 out of 1	2 out of 2	2 out of 3
Florida	3/4	3/3	6/7	0/3	2/3	2/6
Georgia	2/3	1/2	3/5	2/2	1/1	3/3
Louisiana**	2/2	0/0	2/2	0/2	0/0	0/2
Mississippi**	0/2	1/1	1/3	0/0	0/1	0/1
Tennessee**	1/2	2/2	3/4	0/1	1/2***	1/3
Sixth Federal Reserve District	9/16	9/10	18/26	2/9	6/9	8/18

*Deposit Size in Millions.
 **Sixth District Portion.
 ***Below \$300 minimum, \$3 per month.

TABLE 2

**SAVINGS AND LOAN ASSOCIATIONS: NOW Account Pricing in the Sixth Federal Reserve District
(sample of 60 institutions, December 1980)**

	Percentage of Institutions Offering NOWs			Minimum Balance for Charge-Free Checking**					Service Charges for Below Minimum Checking**			Charge-Free Checking with Minimum Balance in Another Time Account**	
	Right Away	Later in 1981	Not Sure	Less than \$500	\$500	\$500-1,000	\$1,000	Over \$1,000	Per Month Only	Per Item Only	Both	Yes	No
Sixth Federal Reserve District	91%	5%	4%	26%	51%	4%	11%	8%	79%	2%	19%	27%	73%
Alabama	100	0	0	22	56	11	11	0	100	0	0	22	78
Florida	100	0	0	42	33	0	8	17	89	0	11	36	64
Georgia	100	0	0	33	42	8	17	0	45	0	55	33	67
Louisiana*	78	11	11	0	57	0	14	29	86	14	0	33	67
Mississippi*	62	25	13	0	83	0	17	0	83	0	17	0	100
Tennessee*	100	0	0	43	57	0	0	0	86	0	14	29	71
Large Institutions (over \$100 million)	96	4	0	32	53	0	11	4	82	4	14	33	67
Smaller Institutions (under \$100 million)	86	7	7	20	48	8	12	12	76	0	24	20	80

*Sixth District Portion Only.

**Includes S&Ls which did not respond, unsure or not offering NOW Accounts.

TABLE 3

COMMERCIAL BANKS: NOW Account Pricing in the Sixth Federal Reserve District (survey of 127 institutions, December 1980)

	Percentage of Institutions Offering NOWs			Minimum Balance for Charge-Free Checking**					Service Charges for Below Minimum Checking**			Charge-Free Checking with Minimum Balance in Another Time Account**	
	Right Away	Later in 1981	Not Sure	Less than \$500	\$500	\$500-1,000	\$1,000	Over \$1,000	Per Month Only	Per Item Only	Both	Yes	No
Sixth Federal Reserve District	97%	1%	2%	0%	3%	4%	37%	54%	39%	0%	54%	16%	84%
Alabama	100	0	0	0	0	0	42	58	78	0	22	5	95
Florida	92	4	4	0	9	0	36	55	32	0	68	32	68
Georgia	100	0	0	0	0	9	58	33	0	0	100	21	79
Louisiana*	96	0	4	0	4	9	35	52	39	0	61	0	100
Mississippi*	94	0	6	0	0	6	12	82	76	0	24	6	94
Tennessee*	100	0	0	0	6	0	44	50	72	0	28	33	67
Large Institutions (over \$100 million)	100	0	0	0	4	6	32	58	51	0	49	18	82
Smaller Institutions (under \$100 million)	95	1	4	0	3	2	30	40	42	0	58	15	85

*Sixth District Portion Only.

**Includes S&Ls which did not respond, unsure or not offering NOW Accounts.

TABLE 4

Commercial Banks: Now Account Pricing Based on Household Accounts

Commercial Banks: Now Account Pricing Based on Household Accounts															
"Estimated percent of total demand balances in household demand balances"	Percent of responding banks in each category	Offering NOWs			Minimum Balance for Charge-Free Checking					Weighted average	Service Charges for Below Minimum Checking			Charge-Free Checking with Minimum Balance in Another Time Account	
											Per Month Only	Per Item Only	Both	Yes	No
		Immediately	Later in 1981	Not Sure	Less than \$500	\$500	1,000	\$1,000	Over \$1,000						
		20- 30%	39%	96%	2	2	0	5	5		39	51	\$1,278	44	0
30- 40%	27	100	0	0	0	0	7	31	62	1,341	50	0	50	10	90
40- 50%	23	100	0	0	0	4	8	52	36	1,156	52	4	44	20	80
50- 60%	7	88	0	12	0	0	0	29	71	1,386	14	0	86	14	86
60- 70%	4	100	0	0	0	0	0	0	100	1,375	25	0	75	0	100
70-100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*87% (110/127) of commercial banks surveyed responded to the "Estimated percent of total demand balances in retail household accounts:" question, with slightly less for other questions.

TABLE 5

Commercial Banks: Marketing Strategy Based on Household Accounts

Estimated percent of total demand balances in household demand balances	Aggressive	Defensive	Other
20-30%	44%	42%	14%
30-40%	17%	63%	20%
40-50%	28%	52%	20%
50-60%	43%	29%	28%
60-70%	0%	75%	25%
70-100%	0%	0%	0%

TABLE 6

Commercial Banks: Breakdown of Marketing Strategy

"Our NOW marketing strategy is:"	Offering NOWs			Minimum Balance for Charge-Free Checking					Service Charges for Below Minimum Checking			Charge-Free Checking with Minimum Balance in Another Time Account	
	Immediately	Later in 1981	Not Sure	Less than \$500	\$500	\$500-1,000	\$1,000	Over \$1,000	Per Month Only	Per Item Only	Both	Yes	No
Aggressive	100%	0	0	0	6	11	58	25	44	0	66	17	83
Defensive	98	2	0	0	0	2	31	67	40	2	58	85	15
Other	95	0	5	0	5	5	16	74	56	0	44	16	84

*87% (111/127) of commercial banks surveyed responded to the "Our NOW marketing strategy is:" question, with slightly less for other questions.

Inflation Experiences in Seven Major Countries: An Overview

An analysis of seven major economies reveals some interesting patterns in world inflation experiences. The author focuses on money growth, wage pressures, government deficits, and oil prices.

Worldwide inflation became entrenched during the 1960s and 1970s. Virtually no country was unscathed by the effects of rapidly rising prices, either at home or in international transactions. Some countries, however, have been much more successful than others in slowing the long-term trend toward ever higher rates of inflation.

While cultural and institutional differences make it difficult to compare data from country to country, we can discern some general patterns in the inflation history of some major western economies. From these general patterns, perhaps we can draw some policy implications.

Seven countries in particular lend themselves to analysis because of close trade relationships, completeness of available data, and their major roles in international commerce.¹ They are: Canada, France, Germany, Italy, Japan, the U. S., and the United Kingdom.

Let's look at inflation (measured by the Consumer Price Index) for the seven countries. The U. S., Canada, and Germany shared relatively low inflation rates from 1954-66 (the first three periods in Table 1). The U. S. had the lowest rate of inflation of any of the countries during the 13-year span. The United Kingdom had much higher inflation in the 1954-58 and 1961-66 periods than the U.S., Germany, or Canada but did have an abrupt slowing in 1959-60. France's inflation was uniformly high throughout the 13 years, running two to three times faster than other western economies. Italy and Japan had relatively mild inflation until 1961-66 when their rates jumped several-fold.

¹ The table covers six time periods, starting with the post-Korean War period, 1954-58. The second period, 1959-60, was chosen because, in five out of the seven nations, there was a marked slowing in inflation from the moderate pace of 1954-58. Two six-year periods, 1961-66 and 1967-72, were chosen because of fairly consistent rates within the two periods. The three-year period, 1973-75, was taken as a sub-period due to the tremendous supply shocks which occurred, making that period's inflation substantially different from other periods. The final period is 1976-79, or up to date as of this writing.

TABLE 1
Consumer Price Inflation in Seven Countries
(percent change per year)

	<u>Canada</u>	<u>United Kingdom</u>	<u>West Germany</u>	<u>France</u>	<u>Italy</u>	<u>Japan</u>	<u>United States</u>
1954-58	1.66	3.66	1.86	4.77	2.43	1.12	1.62
1959-60	1.35	0.95	1.50	4.71	1.35	1.83	1.21
1961-66	1.94	3.60	2.90	3.41	4.48	5.96	1.60
1967-72	3.95	5.80	3.41	5.28	4.19	5.64	4.81
1973-75	10.02	16.72	6.26	10.61	13.64	15.22	9.53
1976-79	8.03	12.75	3.68	9.69	15.14	5.86	8.76

Source: Rapidata—Citibank Database.

Starting in 1967-72, every country in the study showed either continued high rates or a substantial increase to higher rates of inflation. During 1973-75, every nation suffered sharp increases in inflation, some doubling and others tripling. The United Kingdom, for instance, leaped 11 percent, while Japan's rate rose about 9 percent. In the U. S., the rate doubled from 4.8 to 9.5 percent. Of the seven, Germany had much the better experience, with inflation averaging 6.3 percent during 1973-75, up from 3.4 percent in 1967-72.

Finally, the 1976-79 period included a wide range of experiences. Canada, France, and the U. S. showed modest slowing, while the United Kingdom and Germany had declines in rates. Japan's rate was cut by nearly two-thirds to 5.9 percent per year. In contrast, Italy's inflation rate actually increased, averaging 15.1 percent, compared to 13.6 percent in 1973-75. Although the United Kingdom had a decline, its rate of inflation was still very high at 12.7 percent. In each country, with the exception of Japan and Germany, inflation rates were higher, in some cases, much higher than in the 1961-72 period. Even in Germany and Japan, consumer price inflation is significantly faster now than during the 1950s.

What are the important factors behind the nearly universal acceleration in inflation since

the mid-sixties? Let's examine four patterns: (1) the growth in money supply, (2) wage pressures due to organized labor, (3) the size, absolute and relative, of government deficits, and (4) the price of imported oil.²

1. **Money Supply Growth.** For international comparison, the only money supply definition which is worth using and for which historical data are available is M-2. Table 2 contains data for the late 1960s and 1970s as well as the average annual rate of growth for 1960-68 for the seven countries.

Table 2 shows tremendous acceleration in world money growth from the late 1960s to the early 1970s. Almost as if orchestrated, money growth rates were 30 to 100 percent faster in 1971 than in 1970 after rising relative to long-term trends in 1970. Faster money growth (relative to the 1960s' trend rate) continued in all countries through 1974. By 1974, the U. S., Japan, and Germany had succeeded in bringing money growth back to or below a rate customary during the 1960s. In 1974, all the countries except France and Canada showed a slowing, in several cases, a

² This discussion excludes a long list of contributing inflationary factors which create a vicious circle effect but are in themselves not primary causes. These include low savings rates and small shares of investment in GNP, tax structures that create nonneutral results during inflationary periods, cost-increasing governmental regulations, slow productivity growth, external payments problems from imperfect exchange markets, and not least, indexing of contracts and welfare benefits. However, most of these factors are in many respects products of inflation rather than primary causes of inflation.

TABLE 2
Money Supply (M-2) Percent Growth per Year

	<u>Canada</u>	<u>France</u>	<u>Japan</u>	<u>Italy</u>	<u>West Germany</u>	<u>United Kingdom</u>	<u>United States</u>
1960-68	8.6	12.5	16.6	12.5	10.4	--	7.0
1969	5.6	4.6	18.6	11.4	7.8	3.2	2.6
1970	9.8	15.9	16.9	13.6	9.1	9.5	8.3
1971	18.3	18.1	24.3	17.1	13.4	13.4	11.1
1972	14.7	18.6	24.6	18.2	14.4	28.1	11.0
1973	16.5	14.9	16.9	23.2	10.1	27.0	8.8
1974	21.2	20.6	11.5	15.5	8.5	12.6	7.1
1975	8.3	16.4	14.5	23.5	8.6	7.6	11.5
1976	19.8	12.8	13.5	22.3	8.4	11.2	14.1
1977	13.4	13.9	11.1	20.3	11.2	9.8	10.8
1978	17.2	12.2	13.1	23.0	11.0	14.9	8.3
1979	18.0	14.4	9.1	19.7	5.8	12.3	8.8

Source: "International Economic Indicators and Competitive Trends," 1976 and 1980, U. S. Department of Commerce.

marked slowing. From 1975 to 1979, the average rate of money growth was faster in most countries than in the 1960s. Canada's and Italy's rates were nearly double those of the 1960s. In the U. S., the rate averaged about 30 percent faster; in France, 15 percent faster. Germany's growth was virtually identical with the 1960s, and Japan's actually dropped 25 percent.

The correlations of money growth rates with the inflation performances are quite high, although the degrees of sensitivity are very different (another way of saying that changes in velocity of money vary widely across countries). In the U. S., the 30-percent faster money growth in the late 1970s accompanied a rate of inflation three times that of the 1960s. For Japan, money growth is 25 percent slower than the 1960s, but the inflation rate is about the same. A 20-percent faster money growth coincided with doubled inflation in France. A doubling in the Canadian and Italian money growth rates accompanied nearly quadrupled inflation. The United Kingdom experience is hard to judge because of

limited pre-1967 data, but it would appear that a doubled money growth rate occurred simultaneously with a tripled inflation rate. Germany's inflation for the 1975-79 period and its money growth rate are almost identical to the 1960s' experience.

That money growth and inflation are strongly related is not a disputable point. That has been known for years, however, and still money growth continues very strong in many countries. Central banks must be aware of the role of money in inflation, yet they do not restrict its rapid growth. Why? The answer must be either there are economic and political costs to restraining money growth, or the banks do not know how to restrain it.

2. Wage Pressures. Working days lost due to strikes relative to total labor force is an indicator of pressures brought by organized labor to raise wages and to persuade policymakers to follow pro-employment, expansionist, and inflationary policies wherein money growth and government spending are excessive. Table 3 contains the ratio of working days lost

TABLE 3
Industrial Disputes—Number of Working Days Lost as Share of Labor Force
(percent)

	Canada	France	Japan	Italy	West Germany	United Kingdom	United States
1965	.34	.05	--	.37	.0	.12	.33
1966	.72	.13	--	.78	.0	.09	.35
1967	.54	.21	.04	.45	.02	.11	.57
1968	.67	--	.06	.49	.0	.19	.65
1969	1.00	.11	.07	2.05	.01	.28	.55
1970	.83	.09	.08	1.13	.0	.45	.84
1971	.35	.21	.12	.80	.17	.56	.60
1972	.94	.18	.10	1.07	.0	1.00	.33
1973	.67	.19	.09	1.28	.02	.30	.33
1974	1.02	.16	.18	1.04	.04	.60	.56
1975	1.18	.19	.15	1.44	.0	.24	.37
1976	1.22	.24	.06	1.34	.02	.13	.43
1977	.34	.18	.03	.83	.0	.41	.40
1978	.74	.11	.03	.51	.17	.38	--

Union Membership (percent labor force unionized), International Directory of the Trade Union Movement

1979	27.0	23.0	34.7	40.0	38.0	40.0	23.7
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Source: **Year of Labor Statistics**, 1975 and 1979, International Labor Office.

to labor force for the seven countries from 1965 to 1978. The table also shows percent unionization in 1979.

In the days-lost-to-strikes-ratio, Italy is once again the clear winner overall, although Canada has closed the gap in recent years. Far behind these two are the U. S., and the United Kingdom, with the U. S. getting a slight edge for third place. Fairly far back in fifth is France, with Japan sixth and Germany a distant last. Except for France, all the countries show some connection between wage pressures and inflation, especially in the 1970s. France's case is ambiguous. The inflation rate and days lost index do not match the pattern set by the first four, but that does not necessarily mean that French unions have a more powerful voice than the days lost index indicates they would. While wage

pressures seem to contribute to inflation, they are not necessary for inflation to occur.

3. Government Deficits. Table 4 depicts by country the government's deficits as a percent of GNP for the years 1964 to 1979. There are a few general conclusions which can be drawn immediately from these data. Deficit spending has been and remains highest in Italy. That country's deficit at 15.4 percent of GNP in 1978 dwarfs any other country's highest number. Virtually all countries set a new record by wide margins during 1975. After 1975, every government except France has utilized deficits to a much greater extent than during the pre-1974 era. In the 1975-79 period, the Japanese allowed their deficit to grow rapidly, and as a share of GNP, it is much larger than the late 1960s or early 1970s.

TABLE 4
Government Deficits as a Share of GNP
(percent)

	<u>Canada</u>	<u>France</u>	<u>Japan</u>	<u>Italy</u>	<u>West Germany</u>	<u>United Kingdom</u>	<u>United States</u>
1964	0.3	0.3	1.1	2.4	0.3	1.3	0.9
1965	.0	.0	1.6	4.2	0.5	1.7	0.2
1966	1.1	0.4	2.2	4.6	0.5	1.4	0.5
1967	2.0	1.1	1.6	2.8	1.7	2.9	1.1
1968	1.1	1.5	1.3	4.3	0.7	1.7	1.7
1969	0.3+	0.5	1.0	3.2	0.3+	1.9+	0.6+
1970	1.2	0.5+	0.4	5.5	.0	1.3+	1.2
1971	2.0	0.4	0.2	6.9	0.2	1.1	2.3
1972	1.6	0.6+	1.6	7.8	0.4	2.5	1.5
1973	1.4	0.7+	1.6	8.9	0.3	3.2	0.6
1974	1.1	0.3+	1.3	8.1	1.0	4.2	0.8
1975	3.8	3.0	4.7	13.2	3.3	8.0	4.9
1976	2.6	0.8	2.0	9.4	2.7	5.4	3.3
1977	4.3	0.8	6.1.	11.8	1.9	3.1	2.7
1978	4.6	0.8	6.5	15.4	2.0	5.1	2.1
1979	4.0	--	5.3	11.2	1.9	5.5	1.2

+ = surplus

Source: "International Financial Statistics Yearbook 1980," International Monetary Fund.

Italy has the highest deficit relative to GNP. It is far ahead of Japan, the second ranking country. After Japan come the United Kingdom, Canada, the U. S., Germany, and well back, France. France's experience is quite extraordinary. Since 1964, it had four surplus years and, since 1975, the lowest relative deficits of the seven.

In four cases, the relative size of the deficit is positively correlated with inflation: the United Kingdom, Italy, Canada, and, to a lesser degree, the U. S. In Germany, France, and Japan, on the other hand, either the correlation is reversed or no correlation exists. The French and Japanese experiences are especially surprising. Of course, this is only a quick look at broad relationships. Nonetheless, it is obvious that large

government deficits do not inevitably mean high inflation rates.

4. The Price of Imported Oil. Many governments, including past U. S. administrations, have argued that their inability to control inflation was linked to rising oil prices. There is little doubt that the quadrupling of oil prices by the OPEC actions of 1973 and 1974 had an effect on the inflation rates of all our sample countries. In addition to the oil price run-up, there had already been a jump in world commodity prices in 1973. The oil price surge was a continuation of that explosion in 1974. It is easy to see that the rise in oil prices was accompanied by higher inflation rates in 1973-75. Table 5 shows the cost of oil imports as a proportion of GNP in our sample economies. For each country, the outlays for

TABLE 5
Oil Imports as a Share of GNP
(percent)

	<u>Canada</u>	<u>France</u>	<u>Japan</u>	<u>Switzerland</u>	<u>Italy</u>	<u>West Germany</u>	<u>United Kingdom</u>	<u>United States</u>
1964	0.64	1.00	1.47	1.36	1.44	1.16	1.78	0.29
1965	0.60	1.10	1.50	1.30	1.59	1.08	1.74	0.30
1966	0.48	1.03	1.42	1.30	1.65	0.94	1.65	0.28
1967	0.54	1.13	1.47	1.39	1.90	1.30	1.83	0.45
1968	0.51	1.12	1.44	1.48	1.90	1.44	2.10	0.27
1969	0.50	1.06	1.34	1.37	1.87	1.33	1.88	0.27
1970	0.48	1.18	1.36	1.41	1.90	1.26	1.79	0.28
1971	0.57	1.36	1.57	1.64	2.06	1.48	2.05	0.31
1972	0.65	1.38	1.46	1.34	1.90	1.29	1.83	0.37
1973	0.76	1.41	1.61	1.84	2.21	1.63	2.27	0.58
1974	1.80	3.69	4.57	3.17	5.68	3.26	5.40	1.85
1975	1.99	2.86	4.19	2.27	4.29	2.80	3.96	1.74
1976	1.71	3.29	4.13	2.52	4.78	3.13	4.38	2.00
1977	1.56	3.10	3.71	2.49	4.54	2.87	3.53	2.32
1978	1.50	2.54	2.64	1.98	4.11	2.50	2.72	1.96
1979	1.70	--	3.75	3.29	4.53	3.49	2.72	2.47

Source: "International Financial Statistics Yearbook 1980," International Monetary Fund.

oil rose sharply in absolute terms and relative to GNP. All of the rise was due to price since quantities were flat or down. In Japan, the ratio climbed from 1.6 percent in 1973 to 4.6 percent in 1974, nearly a tripling. In West Germany, the increase was a doubling, from 1.6 percent to 3.2 percent. Similar changes occurred in all the nations in the aftermath of the OPEC price hike.

From 1974 through 1978, most countries managed to reduce oil imports as a share of GNP. Then, with the near doubling of prices, the shares rose again—but not by the magnitude they did in 1974. The United Kingdom, which developed its own supply, was able to hold down imports, as was Canada. Japan, Germany, and the U. S. were hard hit, with oil imports rising as a share of GNP. Japan's import ratio did not reach the

1974 level, while Germany and the U. S. attained new highs.

The inflation experience in these countries since 1975 is revealing. While importing virtually all their petroleum, Germany and Japan managed to cut their inflation rates by 50 and 60 percent, respectively.³ The U. S., Canada, France, the United Kingdom, and Italy achieved only slight or no improvement in their inflation. So, while oil was most likely an important contributor to inflation in 1974-75, it certainly cannot take exclusive blame for what has happened since 1975. High and rising oil prices do not guarantee that accelerating inflation will occur.

³ The relative strength of the Japanese and German currencies limited the effect of oil price increases. It is also likely that these two economies may have newer, more energy-efficient equipment than other Western countries.

Conclusions

Comparative inflation rates of the late sixties and early seventies were within such a narrow range for the seven nations (3.4 to 5.8 percent) that it is difficult to say very much about inflation's causes except that the worldwide acceleration was accompanied by worldwide money acceleration and almost universal movement toward expansionist fiscal policies in the late sixties. Japan, if anything, moved toward a tighter policy in the 1967-72 period. A rise in the number of labor disputes also occurred concurrently with more expansionist monetary and fiscal policies in the U. S., the United Kingdom, Italy, and Canada.

The secular movement toward faster money growth, greater use of deficits, and labor disputes has been maintained since the early seventies, with the specific exceptions previously mentioned. In the early seventies, no clear identification of causality across countries could be made, other than money growth. Simultaneous movements of the other factors in virtually all countries and the attendant acceleration of inflation confound empirical research efforts trying to test various theories. Then, in the 1973-75 period, the oil price shocks, following tremendous commodity inflation in 1972-73, further obscured the already difficult task of discerning patterns in the evidence.

Since 1975, the various factors and inflation rates have diverged enough to permit some conclusions.

1. Money growth rates are correlated positively with inflation rates.
2. With the exception of France, the degree of wage pressure is correlated positively with inflation.
3. With the exception of France and Japan and, to a lesser degree, Germany, inflation is positively correlated with the size of deficits relative to GNP. Deficits do not necessarily cause inflation or make it worse.
4. The relative importance of oil imports in an economy is not always a good indication of inflation.

We can make some observations about these general conclusions. Germany and Japan controlled money growth since 1975 despite greater-than-traditional use of deficits. Their success is undoubtedly related to their high personal savings rates which provide large quantities of funds to the capital markets. As a result, monetization of government debt is not necessary. In addition, the wage restraint and general cooperativeness of labor in improving productivity in Japan and Germany means that higher levels of employment (lower levels of unemployment) are possible with the same degree of monetary and fiscal stimulus without engendering wage-push inflation during slack periods. In the anomalous case of France, the money growth and inflation are obviously rooted in institutional differences that labor pressures and fiscal policy measures do not capture.

What can governments do? They can reduce their role in increasing wage rigidities and upward biases in wages. They can promote supply-side incentives, such as tax cuts to encourage productive efforts. They can enforce belt-tightening fiscal policies which reduce the need to monetize debt. Central banks' resolve to act responsibly in controlling money growth would still be needed, but the job would be infinitely easier if the other changes were forthcoming.

As the title of this analysis indicates, this is an overview. We have deliberately not considered exchange rates and balance of payments data because of the difficulties in assessing all the changes in exchange rate regimes, etc. We have also not looked at institutional or structural changes--such as changes in the industrial makeup of national output. Factors such as the underground economy, which are of great importance in some European economies, were also not examined.

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