WILLIAM E SIMON GRADUATE SCHOOL OF BUSINESS ADMINISTRATION

SHADOW OPEN MARKET COMMITTEE

Policy Statement and
Position Papers

March 13-14, 1988

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Contents

SHADOW OPEN MARKET COMMITTEE

The Committee met from 2:00 p.m. to 7:00 p.m. on Sunday, March 13, 1988.

Members of the SOMC:

PROFESSOR KARL BRUNNER, Director of the Bradley Policy Research Center, William E. Simon Graduate School of Business Administration, University of Rochester, Rochester, New York.

PROFESSOR ALLAN H. MELTZER, Graduate School of Industrial Administration, Carnegie-Mellon University, Pittsburgh, Pennsylvania.

MR. H. ERICH HEINEMANN, Chief Economist, Ladenburg, Thalmann & Co., Inc., New York, New York.

DR. JERRY L. JORDAN, Senior Vice President and Economist, First Interstate Bancorp, Los Angeles, California.

DR. MICKEY D. LEVY, Chief Economist, First Fidelity Bancorporation, Philadelphia, Pennsylvania.

PROFESSOR WILLIAM POOLE, Department of Economics, Brown University, Providence, Rhode Island.

PROFESSOR ROBERT H. RASCHE, Department of Economics, Michigan State University, East Lansing, Michigan.

DR. ANNA J. SCHWARTZ, National Bureau of Economic Research, New York, New York.

Chapter 1

Policy Statement

Shadow Open Market Committee
March 14, 1988

At its meeting yesterday, the Shadow Open Market Committee adopted a multi-part program designed to improve the performance of the economy. The Committee called on the Federal Reserve to focus attention on the growth rate of the monetary base, which is the most reliable indicator of the thrust of monetary policy. The SOMC rejected recent proposals by the Fed for new monetary policy indicators. During 1988, the Federal Reserve should increase the monetary base by 6 percent. In addition, the Federal Reserve should ignore fluctuations in foreign exchange rates. The SOMC called on the newly-formed National Commission on Economic Policy to develop a medium-term strategy for fiscal policy. President Reagan should veto any protectionist trade legislation.

1.1. Monetary Indicators

According to recent press reports, the Federal Reserve has changed its indicators of monetary policy. Under the new procedure, policy makers will pay less attention to monetary growth. They will pay more attention to commodity prices, exchange rates and the term structure of interest rates. Assuming these accounts are correct, the emphasis given to these measures will prove to be a mistake. So will the lowered emphasis accorded money growth.

A major problem for monetary policy is to distinguish between real and nominal changes. Real changes not only reflect shifts in productivity,

saving and investment, but also in taxes and the share of government in the economy. Nominal changes ultimately affect only prices. A principal task for the monetary authorities is to distinguish between these two types of changes. The proposed measures do not do that.

Suppose there were another increase in oil prices. The U.S. would be less dependent on imported oil than Japan, so the rise in oil prices would cause the dollar to appreciate relative to the yen. Output would fall but price indexes would rise. This would represent a one-time change. The term structure of interest rates would respond; short-term interest rates would increase relative to long-term rates. Commodity prices would rise, particularly if oil prices are included in the price index.

A similar pattern could occur if monetary growth were restricted in an expanding economy. In this case, the rise in short- relative to long-term rates and the appreciation of the dollar would signal a shift to a disinflationary policy. The rise in commodity prices would reflect the momentum of inflation and rising output.

We believe that exchange rates are a particularly inappropriate indicator of monetary policy. No one has a reliable basis for deciding where exchange rates should settle. No one knows when, whether or how much the dollar must go up or down relative to other currencies to balance the U.S. capital and current accounts. Moreover, it is mainly changes in real exchange rates that have important, lasting effects on trade and capital movements. Such changes cannot be achieved by monetary policy.

The SOMC believes that the proper approach for the Federal Reserve is to let the dollar respond to market forces. Policy makers should neither adjust monetary policy to the exchange rate nor try to adjust exchange rates by monetary policy.

The Federal Reserve may be in transition — seeking reliable indicators to replace *ad hoc* policy determination. However, the Federal Reserve's "new" indicators reflect the expectations of market participants about future monetary policy. Therefore, these indicators cannot simultaneously serve as indicators for the Federal Reserve. Market participants are in effect informing the Fed what they believe it has done in the past and what they expect it will do in the future.

Sustained changes in money growth relative to the growth of output continue to be a reliable indicator of future inflation. Central banks that are most successful in controlling inflation — Germany, Japan and Switzerland

— use the growth of money relative to output as a principal, often the principal, indicator of the inflationary force of monetary policy. The Federal Reserve will make a major mistake, and reopen the possibility of repeating its past mistakes, if it disregards money growth.

Short-term changes in money relative to output have large random components. Skepticism about the importance of money growth in this country is widespread. In part, the skepticism is the result of using measures of money growth whose composition has changed in recent years. The Shadow Committee has long advocated the use of the monetary base — a measure of the size of the Federal Reserve System's balance sheet which the public uses in the form of bank reserves and currency — as a reliable indicator of money growth.

Chart 1 shows that the growth rate of base velocity (defined as the ratio of personal income to monetary base) has remained close to monthly projections during the 1980s. The relationship between base growth and nominal income in the 1980s is comparable, indeed virtually identical, to that observed in the 1950s, 1960s and 1970s. The only difference between the 1980s and the previous quarter-century is a one-time shift in the difference between the *average growth rate* of the monetary base and the *average growth rate* of nominal income.

This change occurred abruptly more than six years ago. It can no longer be used to obfuscate, ignore, or downplay the implications of longer-run monetary growth for economic activity. The data in chart 1 should not be misinterpreted. The data in the chart are *NOT* a foundation for short-term adjustments in the growth of the monetary base. The important and correct conclusion from the chart is that there will be very little deviation from the average growth rate of base velocity over longer time periods. Setting a target for monetary base growth continues to be a useful strategy for a monetary policy that seeks to achieve stable prices.

1.2. The National Commission on Economic Policy

The appointment of a National Commission on Economic Policy presents an opportunity to re-orient the discussion of fiscal policy and its future performance. The Commission can take a narrow or a broad interpretation of its mandate.

A narrow interpretation would focus only on the federal deficit. In this

case, the objective would be simply to find a means of reducing the difference between Treasury receipts and expenditures. By contrast, a broad interpretation would look at the proper roles of spending and tax policies in the economy.

Under such a broadly-defined approach, which we advocate, the Commission would seek to improve the procedures by which Congress and the Administration determine fiscal policy. Focusing only on the deficit would continue the mistaken emphasis that now dominates public discussion. This emphasis obscures the most important issues facing government — how much should be spent by the public sector and how the spending should be allocated.

We urge the Commission to focus on broad questions: For example, how should we determine the share of GNP to spend, on average, for defense of our interests and commitments around the world? How do we decide what to spend on income redistribution, health, education and other non-defense programs? How should these expenditures be financed? What effect do these decisions about taxing and spending have on long-term growth of standards of living?

The critical issue about fiscal policy is not — repeat not — the size of the budget deficit. Far more important are decisions about the allocation of society's resources resulting from decisions about spending and financing. We recommend that the Commission direct its attention to mechanisms that encourage Congress and the Administration to resolve these basic issues. Many countries have adopted, and successfully implemented, medium-term strategies for fiscal policy. The urgent need for the U.S. is to adopt a strategy of this kind.

To reduce the budget deficit, we recommend that the growth of nominal government spending be set equal to the rate of inflation. If nominal GNP grows at 7 percent and government spending grows at the current rate of inflation for the next five years, the budget will be close to balance — and may even have a small surplus — by the end of the next presidential term in 1992.

We emphasize that our proposal is not a panacea. It requires choices, hard choices of the kind that only elected officials can make. The budget deficit is not a crisis about to happen. It is a problem requiring a medium-term strategy for spending and financing.

1.3. Trade and Protection

Legislation to restrict imports is again moving through Congress. Although some of the worst anti-consumer sections have been removed from the current version, the trade bill retains its protectionist approach. Protection against imports lowers welfare and living standards by raising prices and misallocating resources.

A small group in the protected industry benefits for a time at the expense of consumers and society as a whole. U.S. consumers buy imports, and foreigners buy U.S. goods and services, when they get better quality or lower prices. Protection dulls the incentive to compete.

Further, protection of intermediate products like steel and micro chips lowers living standards and harms the competitive position of U.S. producers by raising their costs of production. Instead of importing steel and micro chips to lower the cost of producing autos, tractors, machine tools and electronic equipment, we give a competitive advantage to foreign producers of finished goods.

Protectionists portray the U.S. as a crippled giant unable to compete in world markets. The facts do not support this view. U.S. exports, whether measured in current dollars or in dollars adjusted for price changes, have been increasing rapidly for two years. The real trade deficit — the balance in constant prices — reached its low point in third quarter 1986 and has since declined by $25-billion. Chart 2 shows these changes.

Charts 3 and 4 show what has happened in Japan and Germany. The Japanese trade balance, in constant Japanese prices, has been cut in half. Imports have risen enough to more than offset the effect of falling import prices; imports in current prices have been rising for a year.

In Germany, imports have been rising since 1985. By 1987, the rise in imports was strong enough to offset the lower prices that Germans pay for dollar–denominated imports. The German trade surplus has been eliminated in constant German prices.

The charts show that trade balances are adjusting. Adjustment will continue if U.S. prices and costs of production remain competitive with prices and costs in other countries. The main reasons for the change in competitive positions are the devaluation of the dollar, rising productivity in domestic manufacturing and a low rate of increase in U.S. costs of production relative to productivity and costs in major foreign countries.

	Consumer Spending	Output (Real GNP)
Average – 1983-1986	4.2%	3.5%
1986	4.1%	2.2%
1987	0.6%	3.8%

Table 1.1: Growth Rates in Percent

The composition of U.S. spending shows evidence of the changing roles of exports and consumer spending. During the years of a rising trade deficit, U.S. consumption rose by more than U.S. output. Imports made up the difference. Adjustment of the trade balance requires slower growth of spending relative to the growth of output. In 1987, consumer spending rose much less than output, and exports rose by more than 15 percent.

The table on page 6 shows these data. All data are in constant 1982 dollars and are computed from fourth quarter to fourth quarter:

Protectionists treat the world economy as a fixed pie. Each country is limited to the gain it makes at the expense of others. Trade expands the size of the pie. Protectionist legislation shrinks the pie. The President should veto any protectionist trade legislation Congress makes.

1.4. Policy for 1988

In 1988, monetary policy should initiate a policy of gradual disinflation. The policy should continue until price stability is achieved. At our September 1987 meeting, we praised the Federal Reserve for reducing the growth rate of the monetary base from the very high rates of 1986. We recommended a growth rate of 6 percent for 1988. This rate of money growth is consistent with administration and Federal Reserve forecasts of real growth and inflation. We repeat the recommendation today.

The Federal Reserve should ignore the dollar exchange rate. Monetary policy should not be based on a view of the proper level of the dollar in the foreign exchange markets. It is not the nominal exchange rate that affects U.S. trade and the balance of payments. It is the real exchange rate that has those effects. Monetary policy can have only a short-term effect on the real exchange rate.

Chart 1

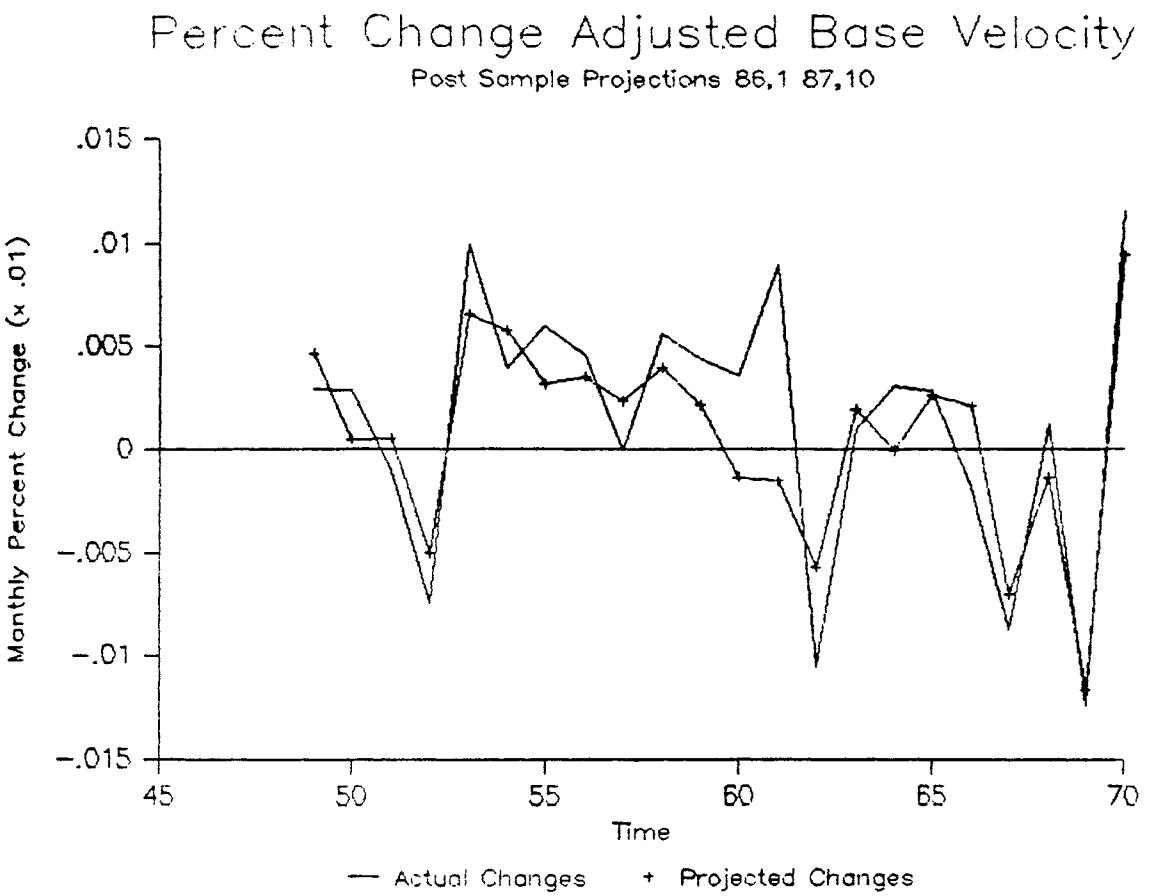
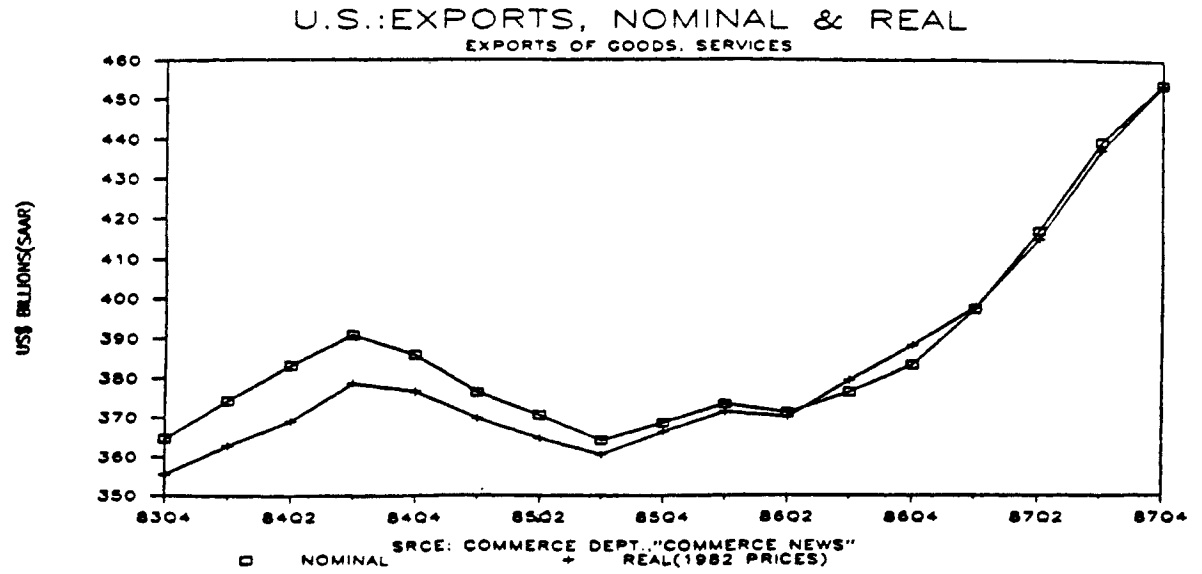
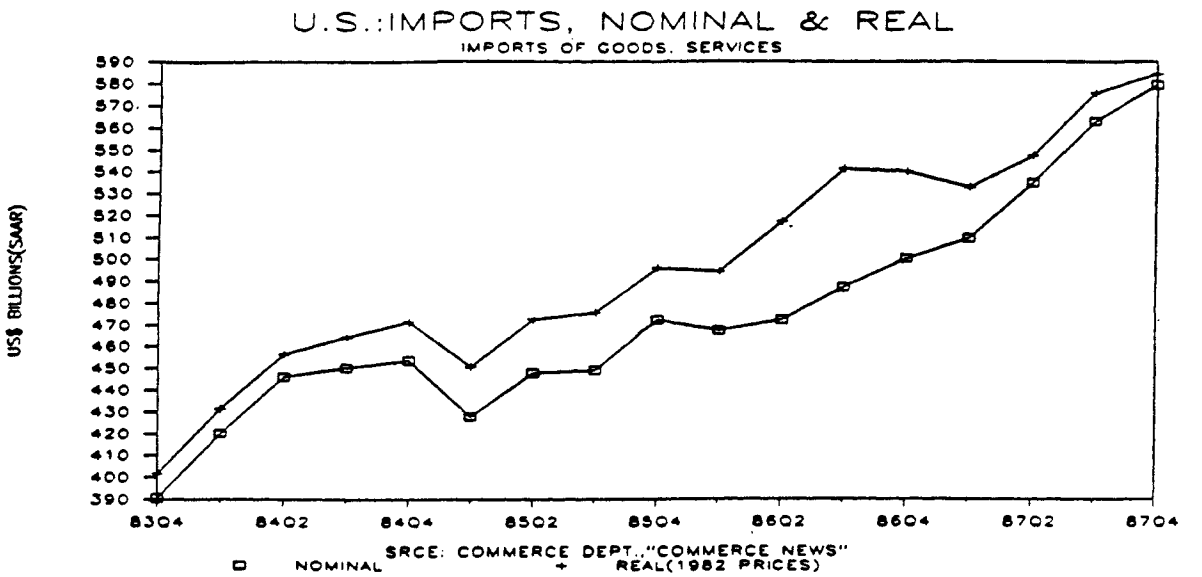


Chart 2





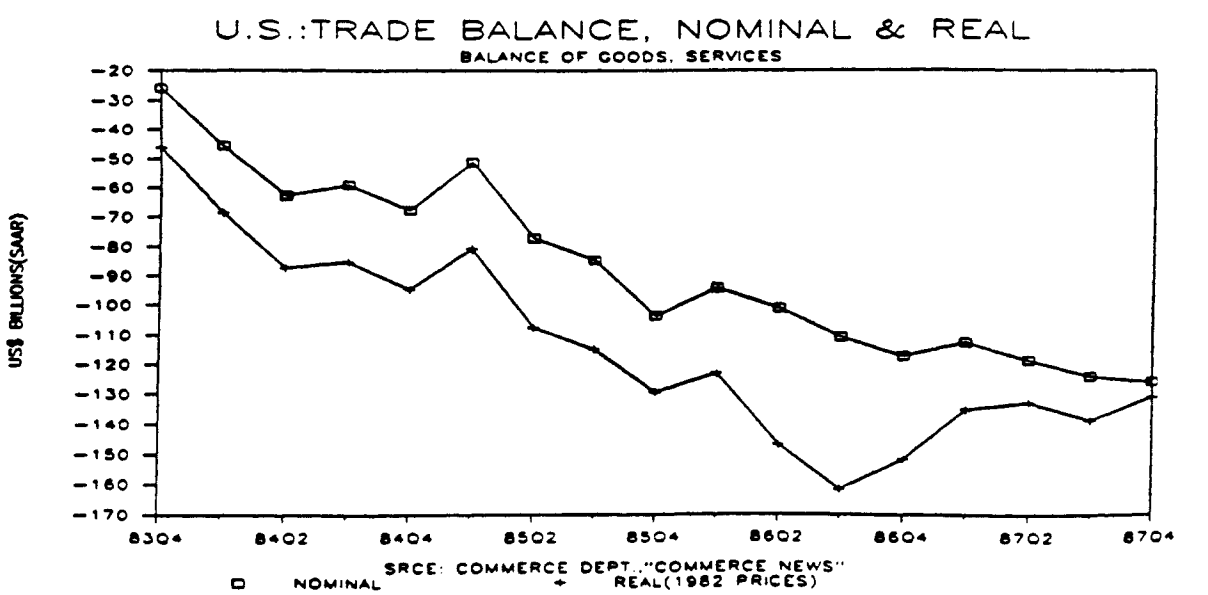
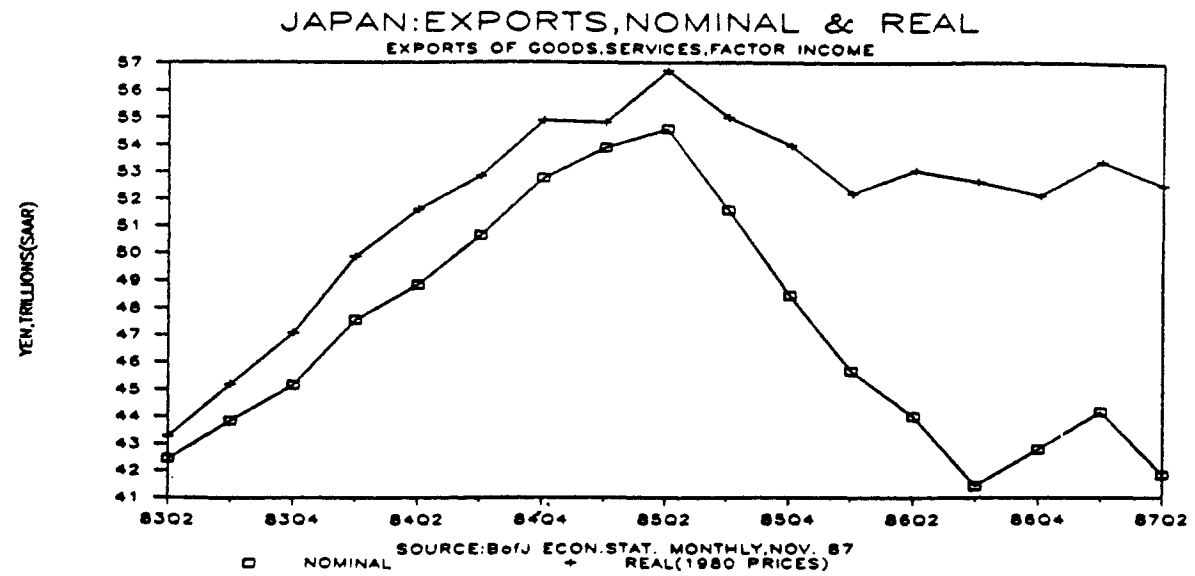
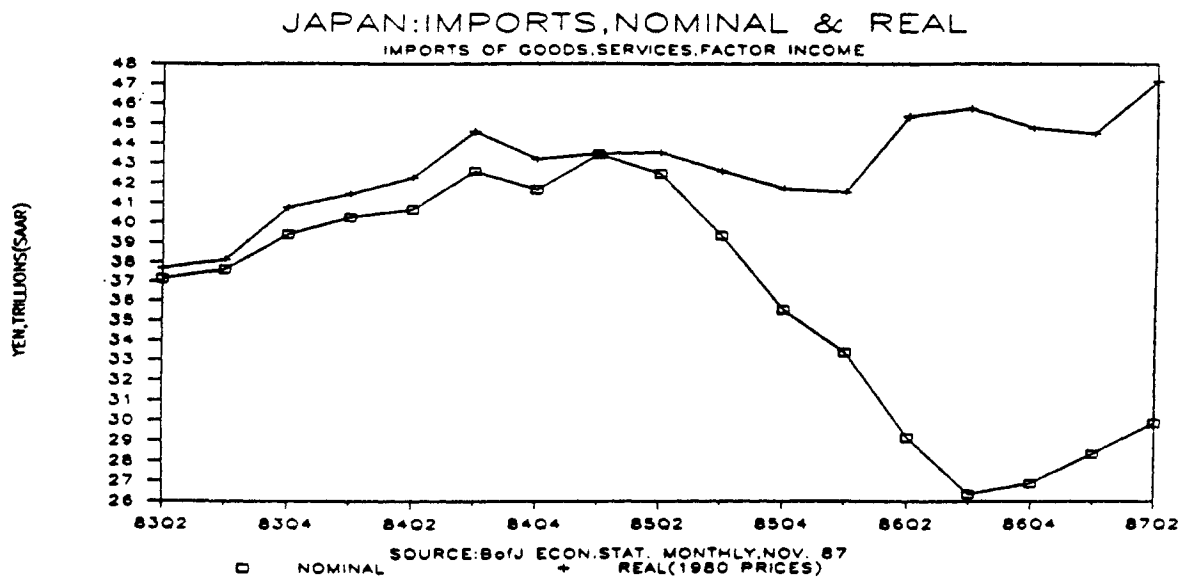


Chart 3





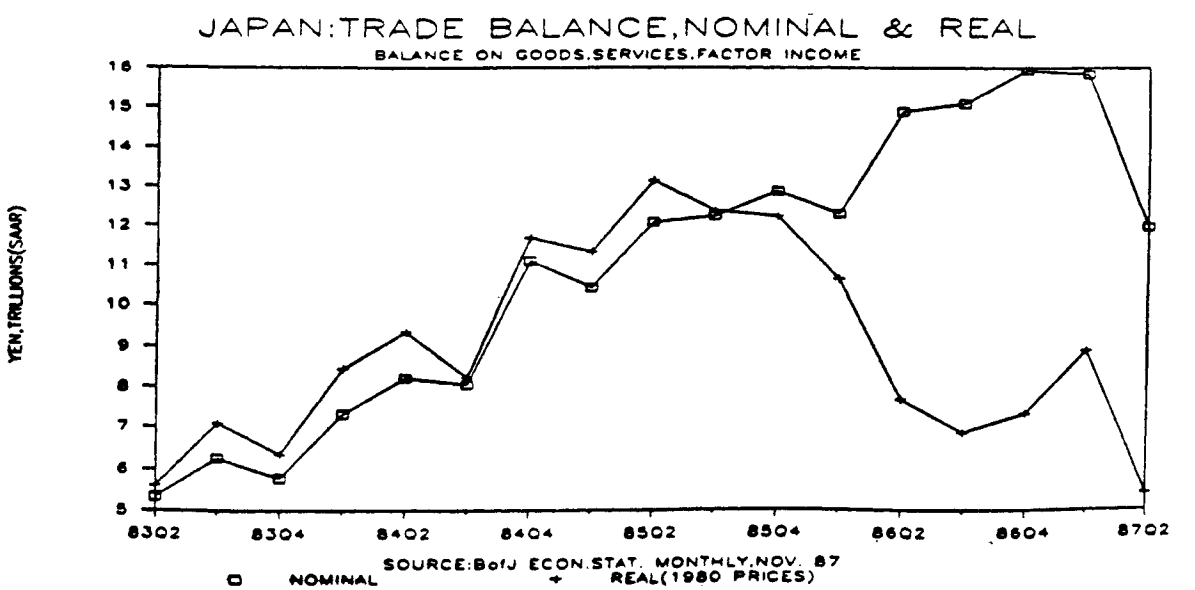
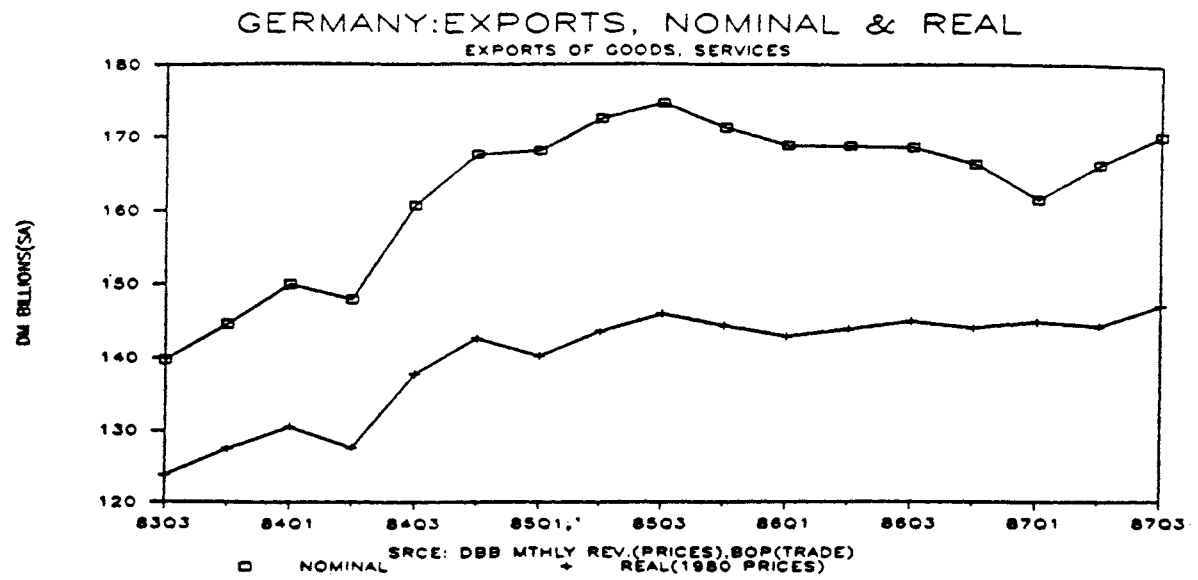
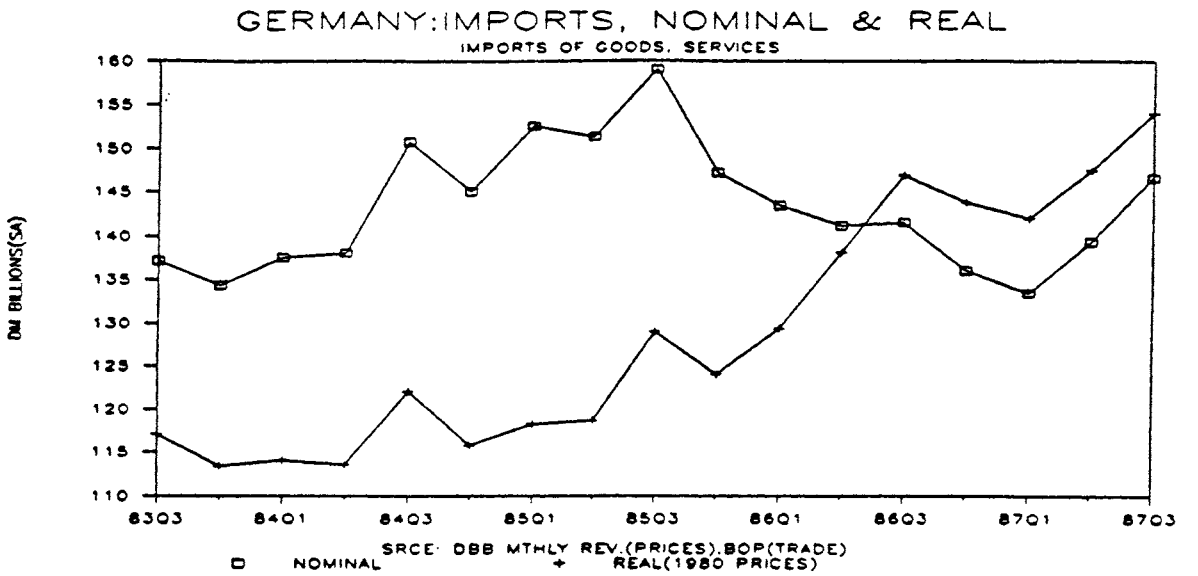
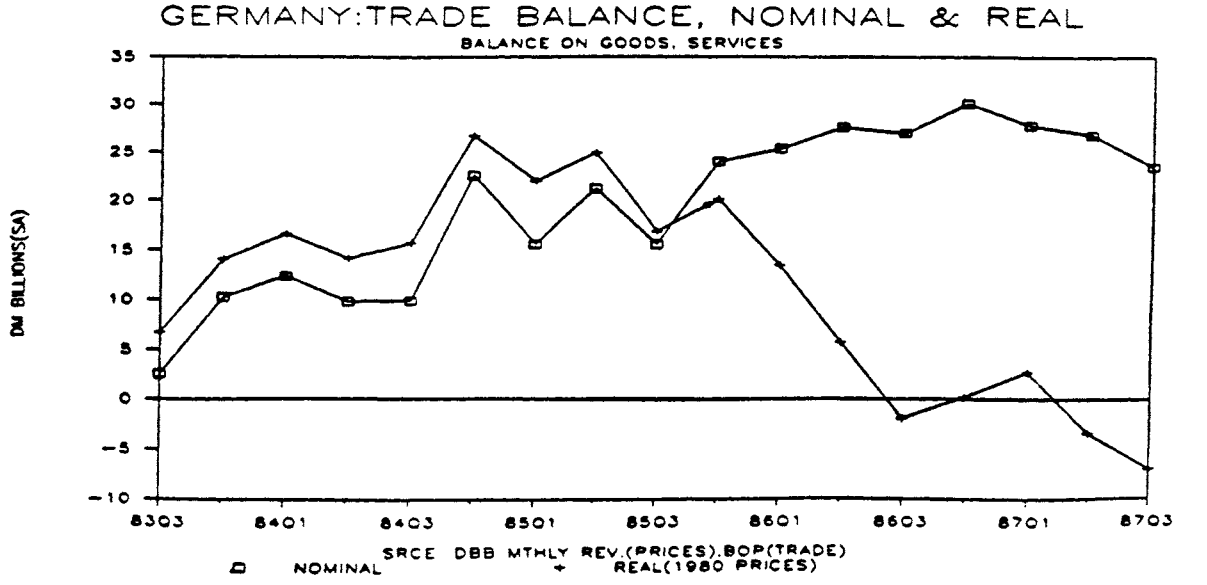


Chart 4







Chapter 2

Economic Outlook

Jerry L. Jordan
First Interstate Bancorp

2.1. SUMMARY

The risk of recession in 1988 has diminished significantly since the end of last year. Since the SOMC meeting last September, two developments posed a possible risk to continued economic expansion in 1988:

First, the stock market crash of October 19 was thought by some observers to have severely damaged consumer and business confidence, with repercussions on spending and investment. Consumer spending did drop in the final quarter of 1987, but was more than offset by increases in other components of national income, so that GNP increased at an annual rate of 4.5 percent.

Second, the Federal Reserve sharply curtailed the growth of bank reserves in its efforts to defend the dollar in 1987. Had monetary growth remained very low or negative in 1988, a recession most likely would have occurred. Since the beginning of 1988, however, reserves have begun to expand at a more rapid pace. The monetary base is expected to rise at about a 9 percent rate in the first quarter.

2.2. U.S. Economy

Consequently, our forecast remains that the economy will not experience a recession in 1988. The Federal Reserve is assumed to supply more rapid

growth of reserves during the current year.

A reduction of excess inventories will hold down economic growth in the first part of 1988, with faster growth in the second half.

Real GNP is expected to increase 2.9 percent in 1988, compared with last year's gain of 3.9 percent. Consumer prices are projected to rise 5.0 percent this year, up from 4.4 percent in 1987.

The Federal Reserve is likely to tighten significantly in late 1988 or early 1989 in response to higher inflation. In reaction, a recession would begin in 1989.

Interest rates are expected to hold relatively steady into the second quarter of 1988. Increases of one-half to three-quarters percentage points are expected in the second half of this year.

Sharper interest rate increases are projected in the first part of 1989 in response to a shift toward monetary restraint.

2.3. International

The U.S. trade deficit is forecast to decline by about $23 billion in 1988, although the reduction in the total current-account deficit, including services, will be considerably less. Some further decline of the dollar is expected in the second half of 1988.

2.4. Industries

Growth is shifting from the consumer to the manufacturing/producer sectors. Industries serving the export and business equipment markets should do well in 1988, while certain parts of the retail and service sectors may experience earnings pressure.

Auto sales are forecast at 10 million units this year, down from 10.3 million in 1987. Housing starts are projected at 1.54 million units, compared with 1.62 million last year.

2.5. THE U.S. ECONOMY

2.5.1. Changes Since Last September

Since we last met, three major events have occurred that could potentially affect the course of the economy.

(1) The stock market crash of October 19, 1987 provoked widespread concerns of a collapse in consumer spending and cancellation of investment plans by business. The primary risks to the economy from the market's decline stemmed from the effect on wealth and the impact on general confidence. It had been our view that, just as consumers had not adjusted sharply upward their spending to the stock market peaks of August, they would not cut outlays drastically in response to the market's downturn. In terms of the impact on wealth, with some recovery after October, the overall stock market ended 1987 at a level close to that at the beginning of the year. Consumer confidence has also improved from its lows of October. As a result, retailers experienced at least a moderately good Christmas season, and few firms made major changes in capital spending budgets for 1988.

(2) After the stock market crash, Congress and the President reached a compromise on the federal budget for fiscal years 1988 and 1989. A sizable component of the deficit reduction, however, represents more of an accounting artifice than an attack on the underlying fiscal problem. Total federal spending is still likely to be up by about 6 percent in fiscal 1988 compared to the prior year. More actual deficit reduction without tax increases would have been achieved by allowing the automatic spending cuts of Gramm-Rudman-Hollings to have been implemented. On balance, although the deficits for the next two years are likely to be less than we previously expected, the fiscal problem is far from solved.

(3) A major risk, which increased after we issued our *Forecast*, came from monetary policy. Efforts to subdue inflationary expectations in 1987 and to support the dollar through intervention in foreign-exchange markets and higher interest-rate targets sharply curtailed the growth of bank reserves and the money supply. In October, reserves were injected liberally in response to the stock market plunge, but that easing was reversed in November and December. At year-end, we were concerned that the Federal Reserve would remain too tight for too long.

2.5.2. Policy Assumptions

It is our present assumption that the Federal Reserve will allow a sufficient expansion of the money supply to support economic growth in 1988. A faster growth of reserves could be accomplished through a pickup in the demand for reserves at recent interest-rate levels or through selection of a lower interest-rate target. Strengthening of the dollar's value on foreign-exchange markets would permit a lower interest-rate target. Alternatively, even if the dollar again came under downward pressure, overriding concerns about the domestic economy might cause the Federal Reserve to reduce its target range for the federal funds rate. Evidence in January showed a strong pickup in reserve and money growth, apparently mainly from an increase in the demand for bank reserves. We assume monetary-base growth this year of 7.4 percent (fourth quarter to fourth quarter), which should be adequate to support economic growth in 1988. Our forecast that the increase in inflation will prompt a significant tightening in monetary policy by the end of this year or early in 1989 remains unchanged.

No significant initiatives with respect to the fiscal budget are expected in the face of a presidential election. The Reagan Administration will attempt to hold Congress to the terms of the budget compromise agreed to last year. We expect the deficit for fiscal 1988 to be about $160 billion, higher than the $150 billion of fiscal 1987. For fiscal 1989, slower economic growth could push the deficit up to about $180 billion, in contrast to the $136 billion targeted by the Administration.

2.5.3. Escaping a 1988 Recession

Economic expansion continued for a fifth year in 1987, with real GNP up a strong 3.9 percent (fourth-quarter-to-fourth-quarter). Assuming sufficient support by the Federal Reserve, we are maintaining our forecast of moderate growth, with real GNP up about 3 percent in 1988. In reaction to the inventory buildup at the end of 1987 and slower monetary growth last year, the economy will grow at a slower pace in the first half of this year than the second.

Major changes in the sources of strength and weakness in the U.S. economy will continue in 1988. For the second year in a row, U.S. production, as measured by real GNP, will grow faster than spending by U.S. consumers, business firms, and government agencies.

Consumer spending and construction were the lead forces in the earlier stages of the expansion, but they are now weakening. Little real growth is projected for federal defense and non-defense spending in the current year, while the increase in state and local government outlays is likely to be moderate.

Our current view is that auto sales will total about 10 million units this year, down from 10.3 million in 1987. Housing starts are expected to decline to about 1.54 million units, compared with 1.62 million in 1987. High vacancy rates and loss of tax advantages will again place most of the reduction in the multi-family sector.

The primary engines of growth in 1988 will be exports, investment in equipment by business, and the ability of domestic producers to win a larger share of the U.S. market. Export business is booming for a wide range of American companies, and many may step up capital outlays to modernize or expand facilities. The higher cost of imports is also driving U.S. buyers to domestic suppliers.

The U.S. economy should support the creation of another 2.7 million jobs in 1988, following last year's addition of 2.9 million. This increase would bring the total number of jobs created since the expansion began in 1982 to 17.3 million. The unemployment rate is also expected to bottom out at about 5.5 percent during the second half of 1988. We continue to forecast a recession beginning in 1989 as a result of a significant tightening in monetary policy. Such a downturn would probably be of mild to moderate intensity, lasting for about a year.

2.5.4. Inflation — Direction Still Up

Inflation, in terms of the fourth-quarter-to-fourth-quarter increase in consumer prices, moved back up to 4.4 percent in 1987 after the plunge in energy prices depressed the rate to only 1.3 percent in 1986. Although last year's tightening in monetary policy may have slowed the increase in inflation, we still expect to see an uptrend over the course of 1988. Our current forecast is for consumer prices at the end of this year to be about 5.0 percent above the year-end level of 1987. This is down from the 5.5 percent inflation rate we had projected in October.

The rise in inflation will reflect principally the interaction of three economic forces: continued increases in government debt and its monetization;

rapid money growth in 1985 and 1986; and the decline of the dollar on foreign exchange markets. So long as excess capacity existed in production facilities in the United States and abroad, while labor conditions placed little pressure on wages, inflation remained relatively low. It should be noted, however, that even under these conditions inflation during the past few years has held at about 4 percent, except for 1986 with the sharp break in energy costs.

U.S. industries entered 1988 operating at about 82 percent of capacity, a level close to that which typically results in more rapid price increases. Although foreign producers have absorbed significant amounts of the dollar's depreciation through lower profit margins, import prices are likely to rise about 10 percent in 1988. *Full employment* in the United States, defined as that level of unemployment at which more significant pressure on wages begins, is now probably about 5.3 percent. Our forecast is for the unemployment rate to approach this level as it falls to 5.5 percent. An ending of the recent trend of employee "give-backs" with the upswing in the manufacturing sector will also contribute to upward wage pressure. With respect to oil prices, our assumption of October remains that the price of the West Texas Intermediate benchmark will average between $16.50 and $18.50 per barrel in the 1988–89 period. For at least 1988, the lower end of that range now seems the more likely.

It currently appears that the Federal Reserve's "threshold" for tolerating inflation is somewhere between 5 percent and 6 percent. As monthly consumer-price increases begin to move in that range late in 1988, the conditions can be expected to be present for Federal Reserve tightening.

2.5.5. Interest Rates — Flat or Lower, Then Up

The federal funds rate is likely to hold in the 6.5 to 6.75 percent range in the first half of 1988, as opposed to over 7 percent last fall. Indications of slower economic growth in the first part of the year have caused a reduction in all short-term interest rates from their levels of the latter part of 1987.

Short-term interest rates are likely to remain relatively flat through the second quarter of 1988. Unless massive selling of dollars on foreign-exchange markets were to resume, moderate economic growth and inflation will place little pressure on interest rates.

In the second half of 1988, higher economic growth, more inflation, and

rising credit demands are expected to push market interest rates moderately upward. In the pre-election period, the Federal Reserve will probably want to maintain a "low profile" by resisting either upward or downward pressure on interest rates. Attempts to hold interest rates below market levels will produce more rapid growth of the monetary aggregates.

Our expectation is that short-term interest rates will rise about three-fourths of a percentage point between the first and fourth quarters of 1988. Then, a shift in Federal Reserve policy late this year will push up short-term interest rates between 150 and 175 basis points before the peak is reached in the spring of 1989. Short-term interest rates then would fall sharply in the second half of next year.

The yield curve steepened significantly in 1987, representing uncertainty over the future rate of inflation and interest rates in view of questions about the federal budget deficit, the value of the dollar, and the ability of the United States to attract foreign capital. If foreign investors became convinced that the dollar had bottomed out, the inflow of foreign funds could drive long-term rates down significantly. With uncertainty remaining, the yield on 30-year government bonds is expected to average about 8.6 percent in the first quarter of 1988. Some increase in inflation as the year proceeds is expected to cause a rise of about one-half of a percentage point to 9.15 percent by year-end. These long-term rates would then climb to about 9.75 percent in the spring of 1989, along with the upswing in short-term rates.

Interest rates on 30-year, fixed-rate mortgages are also expected to rise moderately from their low point of the first quarter of 1988. Our current forecast is for an average of 10.7 percent in the fourth quarter of 1988, compared with an estimated 10.1 percent in the first quarter. We expect mortgage rates to peak at about 11.5 percent in the spring of 1989 before a decline resumes in the second half of the year.

MAJOR ECONOMIC INDICATORS

	QUARTERLY												4th QUARTER					
	1987				1988				1989					% Change		% Change		% Change
	I	II	III	IV	I	II	III	IV	I	II	III	IV	1987	'87/'86	1988	'88/'87	1989	'89/'88
		Actual							Forecast				Actual			Forecast		
GROSS NATIONAL PRODUCT (Billions of $, annual rate)	4377.7	4445.1	4524.0	4604.0	4663.5	4744.4	4840.6	4942.4	5021.4	5092.7	5124.6	5167.5	4604.0	7.4	4942.4	7.3	5167.5	4.6
% Change, annual rate	8.6	6.3	7.3	7.3	5.3	7.1	8.4	8.7	6.6	5.8	2.5	3.4						
REAL GNP (Billions of 1982 $, a.r.)	3772.2	3795.3	3835.9	3877.9	3892.4	3919.3	3955.1	3989.2	3999.2	3999.2	3968.8	3948.9	3877.9	3.9	3989.2	2.9	3948.9	-1.0
% Change, annual rate	4.4	2.5	4.3	4.5	1.5	2.8	3.7	3.5	1.0	0.0	-3.0	-2.0						
REAL FINAL DOMESTIC SALES (Billions of 1982 $, a.r.)	3859.7	3888.9	3949.8	3957.6	3982.4	4006.1	4028.1	4046.0	4043.4	4043.6	4022.6	3991.9	3957.6	1.5	4046.0	2.2	3991.9	-1.3
% Change, annual rate	-3.8	3.1	6.4	0.8	2.5	2.4	2.2	1.8	-0.3	0.0	-2.1	-3.0						
REAL CHANGE IN INVENTORIES (Billions of 1982 $, a.r.)	47.8	39.0	24.6	56.7	10.0	6.0	9.0	16.0	20.0	12.0	-7.0	-2.0	56.7	N/A	16.0	N/A	-2.0	N/A
GNP DEFLATOR (1982=100)	116.1	117.1	117.9	118.7	119.8	121.1	122.4	123.9	125.8	127.3	129.1	130.9	118.7	3.3	123.9	4.4	130.9	5.6
% Change, annual rate	4.2	3.5	2.8	2.7	3.8	4.2	4.5	5.0	5.5	5.8	5.7	5.5						
CONSUMER PRICE INDEX (1967=100)	335.0	339.0	342.3	345.3	348.8	353.0	357.5	362.4	367.7	373.4	379.1	384.6	345.3	4.4	362.4	5.0	384.6	6.1
% Change, annual rate	5.3	4.9	3.9	3.6	4.1	4.9	5.2	5.6	6.0	6.3	6.2	6.0						
AUTO SALES (Millions, annual rate)	9.5	10.0	11.5	10.0	9.8	10.0	10.3	10.0	9.6	9.3	8.7	8.5	10.3*	-10.2	10.0*	-2.5	9.0*	-10.0
HOUSING STARTS (Millions, annual rate)	1.80	1.61	1.62	1.52	1.53	1.56	1.56	1.50	1.38	1.35	1.37	1.50	1.62*	-10.4	1.54*	-4.9	1.40*	-8.9
INDUSTRIAL PRODUCTION (1977=100)	126.9	128.2	130.9	133.0	133.8	134.7	136.2	137.7	138.0	137.5	135.4	133.8	133.0	5.8	137.7	3.6	133.8	-2.9
% Change, annual rate	3.1	4.3	8.7	6.4	2.3	2.7	4.6	4.7	0.7	-1.4	-5.9	-4.8						
NONFARM EMPLOYMENT (Millions)	101.1	101.7	102.3	103.3	103.9	104.6	105.3	106.0	106.5	106.8	106.8	106.6	103.3	2.9	106.0	2.6	106.6	0.6
UNEMPLOYMENT RATE, ALL WORKERS (Percent)	6.5	6.1	5.9	5.8	5.8	5.7	5.6	5.5	5.7	6.0	6.5	6.9	5.8	N/A	5.5	N/A	6.9	N/A
MONETARY BASE (Billions of $, a.r.)	243.7	247.8	250.7	255.7	261.3	265.1	269.6	274.6	277.9	279.3	282.7	287.6	255.7	7.9	274.6	7.4	287.6	4.7
% Change, annual rate	11.8	7.0	4.7	8.2	9.0	6.0	7.0	7.5	5.0	2.0	5.0	7.0						

NOTE: All quarterly series are seasonally adjusted; % change, annual rate calculated from prior quarter; calculations based on unrounded data; a.r. = annual rate

*Annual total; N/A = Not applicable.

Chapter 3

The Economy and Fiscal Policy

Jerry L. Jordan[1]
First Interstate Bancorp

Mr. Chairman and members of the Committee, I am pleased to have this opportunity to appear before you today and present my views on the outlook for the U.S. economy and the implications for the fiscal 1989 budget. My comments will focus on the following issues: (1) the economic outlook for the next two years; (2) the effects of the stock market crash; (3) the concerns regarding the dollar on foreign-exchange markets; (4) the proposed balanced budget amendment; and (5) a proposal for normalizing the economic assumptions so that budget priorities can be set independently of the financing requirements. The Full Employment and Balanced Growth Act of 1978, known as the "Humphrey-Hawkins" legislation, set forth useful long-term goals that are still achievable.

3.1. The Economy in 1988–89

The probability of a recession occurring in 1988 is very small. However, we believe that the likelihood of a recession occurring in 1989 is considerably greater. Even then, the likelihood of a short and mild recession beginning in the middle of 1989 is crucially dependent on two assumptions. One assumption is that monetary policy remains overly expansive during 1988, causing total spending growth in the economy to accelerate, with the result

[1]This paper was presented to the U.S. House of Representatives, Committee on the Budget, March 2, 1988

that inflation rises into the 5 percent to 6 percent range later this year. The second assumption is that, once inflation reaches this range, a more restrictive anti-inflationary monetary policy will be adopted and that this monetary restraint will sharply slow total spending growth by mid-1989, causing a decline in domestic output and a temporary decline of employment.

A recession even in 1989 may still be avoidable or mitigated if monetary growth can be constrained to a slow, steady, and predictable pace during this calendar year. If so, then it will not become necessary to adopt more restrictive measures next year to reduce inflationary excesses.

The drop in equity market prices last October did not automatically trigger the onset of recession. While consumer spending did decline in the final months of last year, it is recovering now in early 1988 and there is sufficient strength in business fixed investment and in export demand to provide for some growth in domestic output.

A slower growth of real consumer spending in the 1988–89 period is a desirable development in view of the necessity of raising the national saving rate in order to solve the "twin deficits problem." Earlier in the current expansion, consumer spending rose to a historic peak share of GNP, while the federal budget and international-trade accounts went into massive deficits. The resulting net debtor status of the United States has become a great concern to international investors. Reducing the government's dissaving and increasing the private-sector's saving rate both would contribute to reversing the trends of the early 1980s. As the consumer spending share of GNP falls back toward its longer-term historic average, the private saving rate, and therefore private sector investment, will increase and the trade deficit will fall.

Our forecast for all of 1988 (on a fourth-quarter to fourth-quarter basis) is for GNP growth of almost 3 percent, accompanied by a 5 percent increase in the consumer price index and modestly higher interest rates by year-end. In 1989, we expect interest rates to rise more rapidly during the first half of the year as a part of a more restrictive monetary policy to combat rising inflationary pressures, and we also expect GNP growth to turn negative by the second half of next year.

ECONOMIC FORECASTS

	1988			1989		
	First Interstate Economics	OMB	CBO	First Interstate Economics	OMB	CBO
4th QTR. to 4th QTR PERCENT CHANGE						
Nominal GNP	7.4%	6.4%	5.7%	4.6%	7.3%	6.9%
Real GNP	2.9	2.4	1.8	-1.0	3.5	2.6
GNP Deflator	4.4	3.9	3.9	5.6	3.7	4.2
Consumer Price Index (CPI-W)	5.0	4.3	4.9	6.1	3.9	4.8
CALENDAR-YEAR AVERAGE						
91-Day Treasury Bill Rate	6.1%	5.3%	6.2%	7.7%	5.2%	6.7%
10-Year Treasury Note Yield	8.7	8.0	9.3	9.3	7.4	9.5
Unemployment Rate, including military	5.6	5.8	6.1	6.3	5.6	6.0

It should be emphasized that such forecasts of national economic activity should not play a major role in setting federal budget priorities. We believe that planned federal outlays should not depend on the performance of the economy or on any associated deficits. I will turn to a specific proposal in this regard in a few minutes.

3.2. Stock Market Crash and Monetary Policy

At the time of the stock market crash last October, the Federal Reserve appropriately eased monetary policy significantly to cushion the impact on the financial system and the real economy. These actions by the central bank lasted about two weeks until the crisis atmosphere abated. Subsequently, as the dollar began to decline more rapidly on foreign-exchange markets, the Federal Reserve intervened as part of an international currency-stabilization program. Also, the Fed appeared to resist the tendency of short-term market interest rates to fall as a result of the preference for liquidity and quality on the part of private investors. The combination of these foreign and domestic actions produced a contraction in bank reserves and a very sharp reduction in the growth of money and bank credit in the final two months of last year.

However, since the beginning of 1988, the dollar has begun to recover on foreign-exchange markets, creating the opportunity for the Federal Reserve to unwind the effects of previous intervention and also to inject reserves in the domestic money market, with further declines of short-term interest rates.

We believe the acceleration of reserve and money growth during the past two months will be sustained for most of this year. If so, the period of greatest concern about the stock-market crash and recession has now passed. Both short- and long-term interest rates are now about two percentage points lower than just prior to the stock-market crash. Consequently, the most interest-sensitive sectors of the economy, such as housing construction and automobiles, are likely to be somewhat stronger than would have been the case had interest rates remained at the levels reached late last summer.

3.3. The Dollar and Foreign-Exchange Markets

For the near term, we believe that the dollar is more likely to rise rather than continue to fall on foreign-exchange markets. Late in 1987, the dollar was dropping rapidly because of growing foreign-investor concerns that U.S. policies would remain excessively expansionary in an effort to inflate out of our fiscal dilemma. As the year ended, a combination of upward revisions of forecasts and perceptions about foreign economies and downward revisions in forecasts about U.S. inflation and real growth produced a more positive short-run outlook for the dollar. Because we expect these conditions to prevail for the next few months, the dollar could rise into the range of 135 to 140 yen and 1.70 to 1.75 deutsche marks.

During the second half of 1988, our forecast of higher real growth plus somewhat higher inflation should cause the dollar to begin to depreciate again in spite of the somewhat higher interest rates that we also forecast later this year. Although the U.S. trade deficit will drop by some $20 to $25 billion in 1988, it will still be very large in absolute terms. Nevertheless, we do not believe that the dollar must fall substantially further in order to begin making concrete progress in reducing the trade deficit, nor do we believe that the existence of a trade deficit means the dollar must continuously decline. However, U.S. fiscal policies have produced an environment that has been associated with higher monetary growth and higher inflation in the U.S. than in most of the other major industralized countries, which has contributed to the sustained decline in the dollar. Since we believe that the United States will continue to have higher inflation than most of the other large industralized economies through 1989, the dollar is likely to gradually decline further from current levels.

As long as the U.S. sustains a significant deficit in the federal budget — and also, as the world's international reserve-currency country, enjoys the privilege of financing its external debt by issuing securities denominated in its own currency — the U.S. may be tempted to tolerate a higher rate of inflation than historically has been the case. Our foreign creditors are very well aware of this temptation since the alternative is to make the hard choices necessary to reduce the deficits. Consequently, they are monitoring developments in this country for signs of fiscal and monetary discipline. The sustained current-account deficits and recent net-debtor status of the United States have created a dependency on foreign saving flows that can-

not be ignored in considering fiscal and monetary alternatives.

3.4. Balance of the Federal Budget

The objective of moving towards balance in the federal budget is highly desirable, and the Gramm-Rudman-Hollings (GRH) target date of 1993 is achievable and worth maintaining. Congress should not be influenced by the view that a smaller deficit necessarily implies less fiscal stimulus to the economy. Not all actions to curtail deficits are restrictive.

In the jargon of economists, there is considerable disagreement about both the sign and size of fiscal-impact "multipliers." Changes in government spending do not have the same effect on the economy as do changes in taxation and different types of spending and different types of taxation have different effects on private economic activity.

My own view is that a program of dependable progress towards smaller deficits would reduce some of both the uncertainty and the inflation premiums embodied in current levels of market interest rates. Institutional investors in the U.S. and abroad fear that, as long as the deficits persist, the U.S. will be tempted to monetize the debts and repay the obligations with cheaper dollars. The resulting uncertainty and inflation premiums have helped cause interest expense on the national debt to be the fastest growing major component of the federal budget in recent years. Sustained progress toward lower deficits, together with a downward trend of inflation, would produce a budgetary dividend of falling interest expense as a share of the budget and as a share of national income.

While GRH emphasizes *deficit* reduction targets, the more basic issue is government spending itself. Last year, the economy produced $4.5 trillion of goods and services. Nearly one-third of available resources were channeled through government sectors last year. By contrast, in the early 1960s, government spending at all levels was only 27 percent of the nation's total spending.

Although efforts to reduce the deficit as stressed by GRH are useful, it is much more important that the initial spending decision itself be well thought out and justified. A wasteful government expenditure would make the country worse off even if the budget were balanced. Similarly, a couple of billion dollars spent to prevent the spread of a serious communicable disease might easily have broad public support and therefore ought to go

forward regardless of the size of the deficit.

There is a danger that focusing on annual deficts may cause fiscal actions to take on a greater pro-cyclic bias, rather than move countercyclically. For example, if it appears that the next year will be weaker than previously thought, focusing on deficits implies that less spending or higher taxes would be called for in order to hit a deficit target. Conversely, if the next year appears to be stronger than previously thought, more spending or lower taxes would seem to be justified.

Furthermore, focusing on the deficit leads to statements that suggest that it is deficits, rather than government spending, that caused our reliance on foreign financing or "crowded out" private investment. This is mistaken, for lowering the deficit by raising current taxes could also entail foreign borrowing (to meet current tax obligations) or lower private saving and capital formation. In real terms, it is government's claim on current production that "crowds out" private claims.

Given a decison to make an expenditure, government imposes taxes, implicitly or explicitly, directly or indirectly. Taxes may be collected against current output or against future output, but we need to recall that the incidence and burden of a tax are not one and the same. The extent of inter-generational tax shifting is neither easily determined nor directly under government's control.

In spite of my reservations about targeting annual deficits, the goal of GRH — phased reductions in the deficit each year through 1993 — is important and reachable. The economy will be better off if Congress accepts this fiscal discipline, while awaiting the recommendations of the National Commission on Economic Policy for fundamental reforms of the budget process.

3.5. Balanced Budget Amendment

I cannot give a blanket endorsement of a constitutional amendment requiring balance in the federal budget without knowing something about the implementing legislation to achieve it. As desirable as it may be to achieve and maintain balance between federal expenditures and receipts, the actions taken to move toward balance will have effects on private-sector economic activity. In addition, since the performance of the economy has a pronounced effect on both receipts and outlays, actual balance cannot be

expected in any given year. In view of the recent legacy of deficits and the wide range of forecasts about the likely performance of the economy over the next few years, spending targets should be set with the objective of limiting the relative size of the federal government over time.

Early in his administration, former President Carter set forth a goal of reducing to 21 percent the share of GNP accounted for by federal government spending.[2] The actual average during the Carter presidency was government spending equal to 21.2 percent of GNP. A few years later, President Reagan set forth a goal of achieving a balanced budget with federal spending equal to 19 percent of GNP.[3] However, the actual average has been 23.4 percent during the Reagan presidency.

The 1978 Humphrey-Hawkins legislation set an ultimate goal of reducing total federal spending to 20 percent of GNP, with an interim goal of 21 percent.[4] Since this ultimate goal falls between the Carter and Reagan goals, it seems that a bipartisan consensus has emerged. However, over the past 10 years government spending has averaged 22.8 percent of GNP. Over the past 20 and 25 year time periods, government spending has averaged 21.6 percent and 21.0 percent of GNP, respectively.

Whether the socially and politically acceptable ratio of federal spending to GNP is 20 percent, 21 percent or 22 percent, it is imperative to decide on and live with a fixed federal government share of the nation's income and output. Once having set a national objective in terms of total federal spending as a percent of national income, agreement also must be reached regarding the priorities within this budget total.

Since any possibility of implementing a balanced budget amendment to the Constitution is several years into the future, I would like to take a few minutes to summarize a proposal for changing the role of economic assumptions in the budgetary process, and focus attention on the national priorities within the budget, rather than on the deficit.

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[2] *Economic Report of the President*, January, 1978; p. 9.

[3] *A Program for Economic Recovery*, February, 1981; pp. 11-12.

[4] *The Full Employment and Balanced Growth Act of 1978*, Section 1022a.

3.6. Proposed Approach for Setting Economic Assumptions for the Budget

Economists have long found it useful to employ a concept known as permanent income, sometimes referred to as standard income, in analyzing consumer spending and saving behavior. The basic idea is that income from one period to the next can often be highly variable, but individuals adapt spending patterns according to the average income they expect to realize over time. I suggest that much of the perennial problem of setting economic assumptions is counterproductive to the setting of budgetary priorities and deflects attention away from the important issues of the composition of the budget. Therefore, I think it would be highly desirable for both houses of the Congress and the Administration to agree on a concept of *standard national income* for the purpose of setting budget ceilings for the five-year planning horizon.

For this purpose, the *standardized GNP* assumption used in the budget-setting process would be derived from the average actual growth of real output over a lengthy prior period — such as 20 or 25 years — plus the rate of inflation agreed upon by Congress and the Administration as a desirable long-run objective. For this purpose, the 3 percent interim target rate of inflation mandated by the Full Employment and Balanced Growth Act of 1978[5] would be desirable. The target 3 percent inflation goal plus the 3 percent actual average real GNP growth over the past 25 years would yield a growth rate of 6 percent for *standard national income.* Based on this *standard national income* assumption, Congress and the Administration should then achieve a bipartisan consensus regarding the portion of the nation's resources that will flow through the government sector.

In fiscal 1987, federal spending, including interest on the national debt less offsetting receipts, was 22.8 percent of GNP. Outlays for defense, non-defense discretionary, and entitlements and other mandatory spend-ing amounted to 20.9 percent of actual GNP in fiscal 1987 — a $1\frac{1}{2}$ percentage point larger share of GNP than total tax revenue.

If the Humphrey-Hawkins interim goal of reducing total federal outlays to 21 percent was set for three years and the 20 percent goal was to be reached in five years, the deficit could be cut to under 1 percent of GNP

[5] *The Full Employment and Balanced Growth of 1978*, Section 1022a.

by 1993. However, if interest expense and offsetting receipts remain at approximately the current share of *standard national income*, the total of defense, non-defense discretionary, and payments to individuals will have to be reduced by about 1.5 percentage points as a share of GNP from the level that otherwise would be reached in the target year.

Starting with the defense budget, at the end of the Carter presidency, defense spending was equal to 5 percent of GNP and the average during the Carter presidency was 4.9 percent of GNP. During the 1980 campaign and early in his Administration, President Reagan set a goal of increasing defense spending as a percent of GNP from 5 percent to 7 percent, arguing that the nation could and should devote two percentage points more of national income to defense. That goal was never reached. Defense spending reached a peak of 6.5 percent of GNP in 1986, and is projected to decline in 1988 and 1989. The average for the Reagan presidency will be close to 6.1 percent for the eight years of the current Administration. For the past 10, 20 and 25 year periods, defense spending has averaged 5.8 percent, 6.3 percent, 6.7 percent of GNP, respectively.

The national goal regarding the share of the nation's resources to devote to defense spending is, of course, a political decision and must be arrived at through a political process. However, it seems quite clear that the 5 percent level at the end of the Carter presidency is at the low end of what is acceptable in this country and the 7 percent goal set by the Reagan Administration, but never achieved, is higher than the politically acceptable rate. It would appear that somewhere between the 5 percent to 6.5 percent actual range of the past decade reflects the consensus of the American public at present. This is an issue that presidential candidates and candidates for Congress can address in order to find out what the voters of this country are willing to support.

Turning to non-defense discretionary spending, its actual share of GNP in fiscal 1987 was 3.7 percent and estimates by the Congressional Budget Office suggest that the share will be the same in fiscal 1988. Non-defense discretionary spending is now at its lowest share of GNP in the last 25 years, and CBO projections of the "current-services" budget indicate a slight decline in this share of GNP over the next five years. Again, a consensus should be achieved regarding the proportion of the *standard national income* that is to be devoted to non-defense discretionary outlays, prior to discussions about the composition of such spending.

Turning to the large "payments-to-individuals" share of the federal budget, the actual experience has been for this spending to average 10.8 percent, 9.6 percent and 8.7 percent of GNP over the past 10, 20 and 25 year intervals. In fiscal 1987, such spending amounted to 10.8 percent of GNP and the CBO currently estimates that, in fiscal 1988, entitlements and other mandatory spending will amount to approximately 10.6 percent of forecast GNP.

Over-correction for inflation during the past fifteen years contributed to a significant increase in real benefits to recipients, even though the intent of indexation was to prevent an erosion of real benefits due to higher costs of living. Some of the sources of this over-indexation, such as the inclusion of home prices and mortgage rates in the consumer price index, have been corrected, but some still are present. Limiting COLAs for indexed programs to the 3 percent Humphrey-Hawkins interim inflation goal, or the actual CPI minus 2 percentage points, which ever is smaller, would help considerably in the effort to reduce the deficit over a period of several years. Because of the difficulties of measuring productivity and the quality of services, which account for one-half of the consumer price index, there is an upward bias in the CPI as a measure of cost of living. Consequently, full CPI indexation *raises* real payments. Tightening up on eligibility rules and subjecting more recipients to means testing would also significantly reduce this source of the national budget problem, while channeling resources more effectively to the intended receivers.

Achieving a goal of federal spending equal to 20 percent of *standard national income* within the next five years is possible, while still allowing for some increases in major spending categories. Excluding net interest and offsetting receipts, it would imply holding the sum of the three major categories of federal spending — defense, non-defense discretionary outlays and entitlements and other mandatory payments — to an average growth of about 3 percent per year. If any one category of spending were allowed to grow by more than 3 percent per year, slower growth or cuts would have to occur in other categories.

The decision to increase or decrease either the total federal budget as a percent of *standard national income*, or to change the composition among the broad categories, is a political decision that should be derived without complications caused by disagreements about economic assumptions. Also, decisions regarding the total amount of federal spending as a share of *stan-*

dard national income and the relative shares of major components should precede decisions regarding how much of such spending will be financed by explicit current taxation and how much will be financed through the issuance of interest-bearing obligations of the government.

3.7. Implications for Monetary Policy

Over the long run, monetary policy actions are a form of fiscal instrument. Open market purchases of government securities by the Federal Reserve reduce the net interest expense on the national debt, but at a cost of reduced purchasing power of the U.S. dollar. Inflation should be viewed as an unlegislated tax, and as an especially regressive and divisive tax. Deficit financing of current government outlays tends to create pressures in domestic and international financial markets that usually result in more rapid monetary growth and inflation. There is nothing automatic about the relationship, but the temptation to monetize more debt and tolerate higher inflation increases when deficits are larger.

Rather than focus on current interest-rate or exchange-rate levels, Congressional guidance to the Federal Reserve should include instructions to conduct monetary policies in such a way as to cause the trend of actual GNP growth to approximate that implied by *standard national income* goals over the budget horizon. The five-year budget planning horizon makes little sense if the economic assumptions are not consistent with the central bank's intentions with regard to the growth of total spending in the economy over that period.

3.8. Summary and Conclusions

A recently released survey of members of the National Association of Business Economists reported that 83 percent expect the U.S. to be in recession before the end of 1989. Whether or not that turns out to be an accurate forecast, current decisions about the fiscal 1989 budget should be based on a non-cyclical estimate of the normal or "core" rate of national income growth. If a majority of economists were forecasting a roaring boom in 1989, it would not make sense to assume there would be more room for federal expenditure since the deficit would be smaller.

A concept of *standard national income* growth is implied by the objectives for inflation and output growth specified by the Full Employment and Balanced Growth Act of 1978. Such a concept should be employed as the basis of economic assumptions for establishing the federal budget, even if actual economic conditions are different.

The Humphrey-Hawkins legislation also provided very useful national goals regarding federal government spending as a share of national income, and a concrete plan to move toward achieving that goal over the next five years would have a highly favorable effect on financial markets. A plan to hold the growth of federal outlays below the growth of nominal GNP, so that total government spending falls towards the 20 percent share specified by the Humphrey-Hawkins legislation, would reduce the deficit to less than one percent of GNP.

Thank you for inviting me to appear today and giving me the time to present my views. I wish you success in your deliberations.

Attachment 1

FEDERAL OUTLAYS AS A PERCENT OF GNP

(Fiscal Years, Average)

Fiscal Year	(1) Defense	(2) Entitlements And Other Mandatory Spending	(3) Nondefense Discretionary Spending	(4) Sum (Columns 1 to 3)	(5) Net Interest	(6) Offsetting Receipts	(7) Total (Columns 4 to 6)
1987	6.4%	10.8%	3.7%	20.9%	3.1%	-1.2%	22.8%
Last 10 Years Avg.	5.8	10.8	4.9	21.5	2.6	-1.2	22.8
Last 20 Years Avg.	6.3	9.6	5.0	20.9	2.0	-1.2	21.6
Last 25 Years Avg.	6.7	8.7	4.9	20.3	1.9	-1.2	21.0

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Attachment 2

Fiscal Year	Standard National Income* (Billions)	Defense & Nondefense Discretionary & Entitlements** (Billions)	GNP Share (Percent)	Net Interest & Offsetting Receipts*** (Billions)	GNP Share (Percent)	Total Federal Spending (Billions)	GNP Share (Percent)
Actual 1987	$4409	$920	20.9%	$85	1.9%	$1005	22.8%
1988	4673	959	20.5	96	2.1	1055	22.6
1989	4954	988	19.9	108	2.2	1096	22.1
1990	5251	1017	19.4	123	2.3	1140	21.7
1991	5566	1048	18.8	133	2.4	1181	21.2
1992	5900	1079	18.3	135	2.3	1214	20.6
1993	6254	1112	17.8	137	2.2	1249	20.0
Percent change, 1988-93 average compound annual rate	6.0%	3.0%		7.4%		3.4%	

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*Actual GNP for 1987, based on 6% growth thereafter.
**Actual 1987, CBO assumption for 1988, based on 3% growth thereafter.
***Actual 1987, CBO assumptions for 1988-93.

THE ECONOMY AND FISCAL POLICY

CHARTS SUPPLEMENTING STATEMENT OF

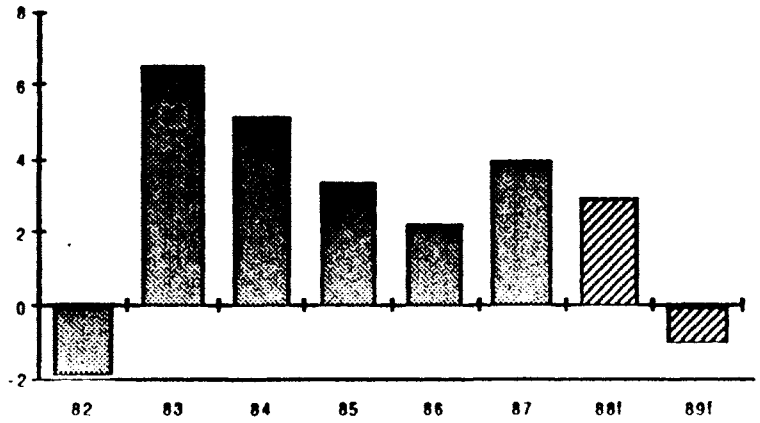
Jerry L. Jordan
Senior Vice President & Chief Economist
First Interstate Bancorp

U.S. HOUSE OF REPRESENTATIVES
Committee on the Budget

March 2, 1988

REAL GNP

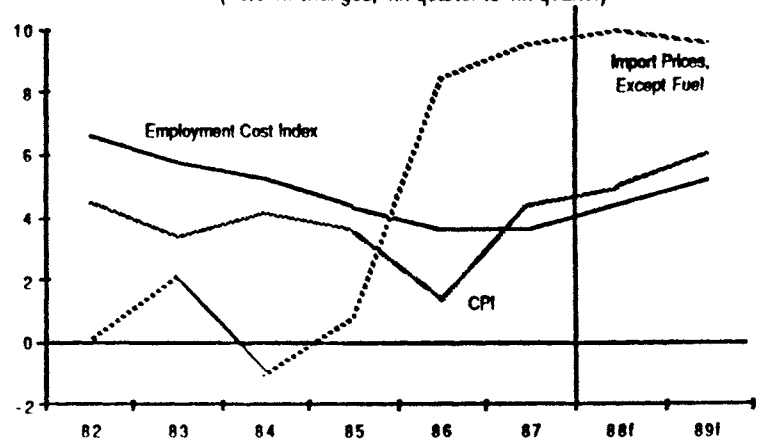
(Percent change, 4th quarter to 4th quarter)



Continued economic expansion is expected in 1988, with real GNP growth of nearly 3 percent. An increase in inflation and subsequent tightening of monetary policy could produce a recession in 1989.

CONSUMER PRICES, WAGES, AND IMPORT COSTS

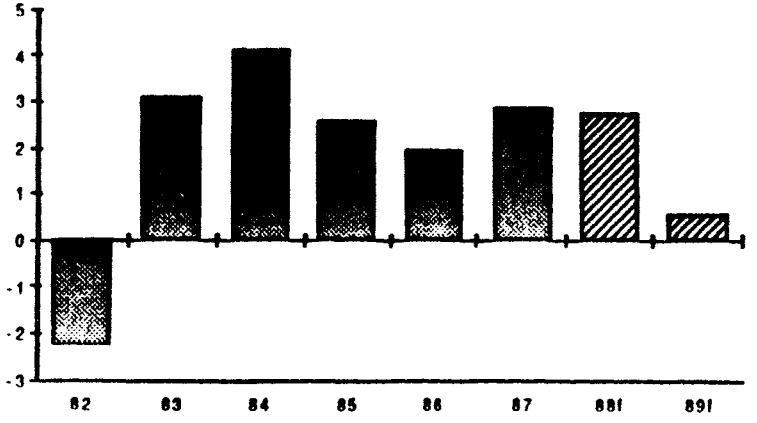
(Percent changes, 4th quarter to 4th quarter)



Inflation, measured in terms of consumer prices, is expected to move up to 5 percent in 1988. Past monetary expansion, in part prompted by fiscal policy, will be the major cause of this increase. The dollar's decline will drive up import prices further, and wages are likely to lag behind price increases.

CHANGES IN EMPLOYMENT

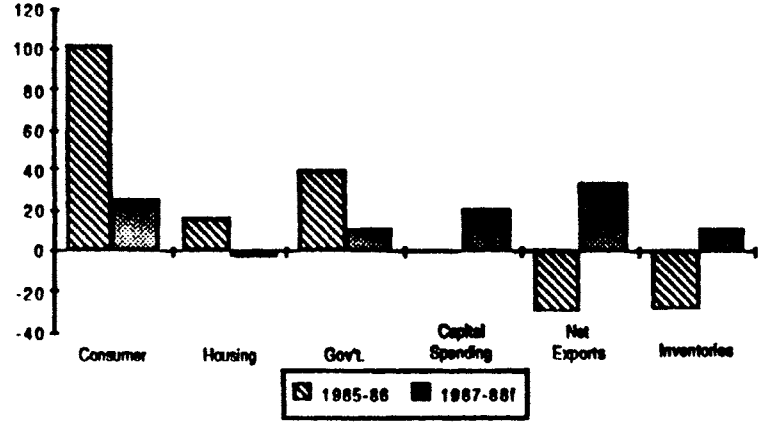
(Millions, 4th quarter to 4th quarter)



Nonfarm employment increased by 2.9 million in 1987 and another 2.7 million jobs are expected to be added in 1988. The unemployment rate is expected to fall to 5.5 percent in the second half of this year.

SECTORAL CONTRIBUTIONS TO GNP

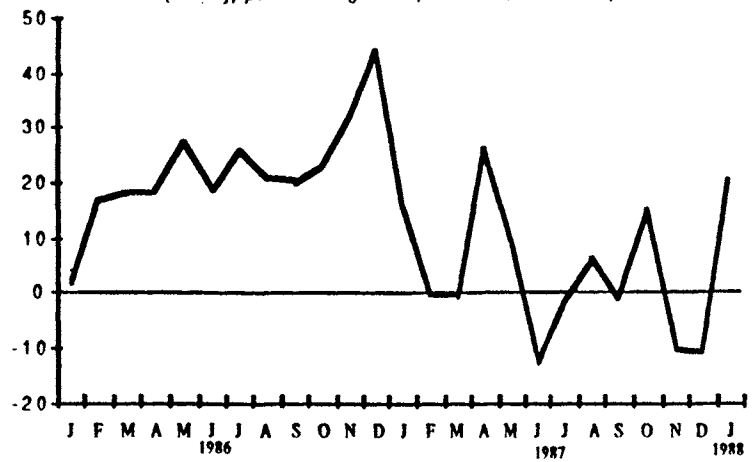
(Percent share of two-year real GNP growth, fourth quarter data)



Major changes are occurring in the sources of strength and weakness in the U.S. economy. While the consumer, housing, and government sectors were the lead growth areas in 1985-86, business capital spending and exports have now moved to the fore.

TOTAL BANK RESERVES

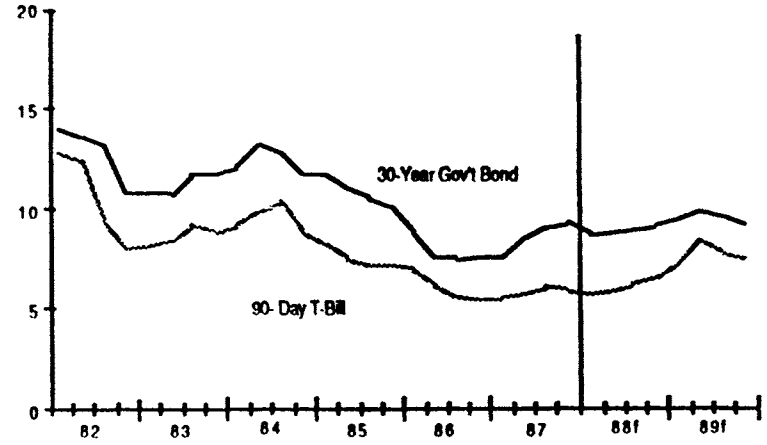
(Monthly, percent change from prior month, annual rate)



The growth of bank reserves slowed significantly in 1987, but a more rapid expansion has developed in 1988. The trend of monetary policy will be more important than last fall's stock market crash in determining the course of the economy this year.

INTEREST RATES

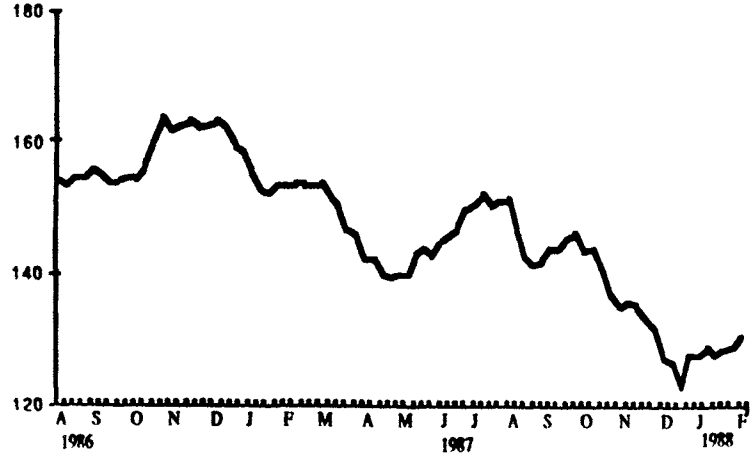
(Percent quarterly averages)



Interest rates are forecasted to remain relatively stable in the near term. Some increase in the second half of 1988 is expected in response to a pickup in economic growth and higher inflation. Sharper increases are then likely in the first part of 1989.

EXCHANGE RATE - YEN/$

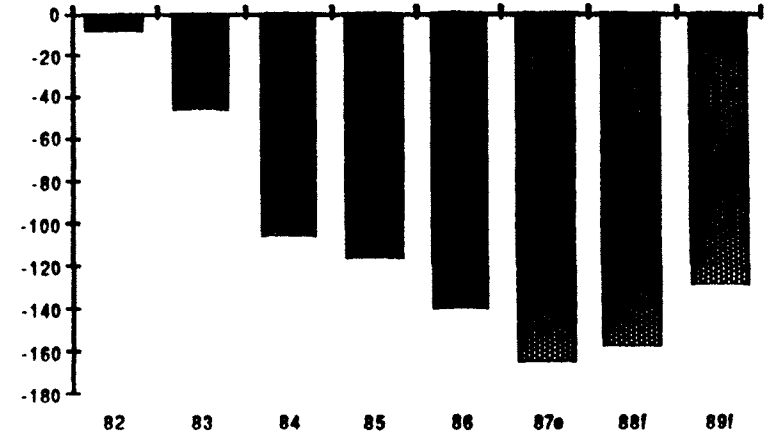
(Weekly averages)



After a steep fall on foreign-exchange markets in the latter part of 1987, the dollar has recently moved up against such currencies as the Japanese yen. Some further appreciation may occur in the near term, although the dollar is likely to move lower again later in 1988.

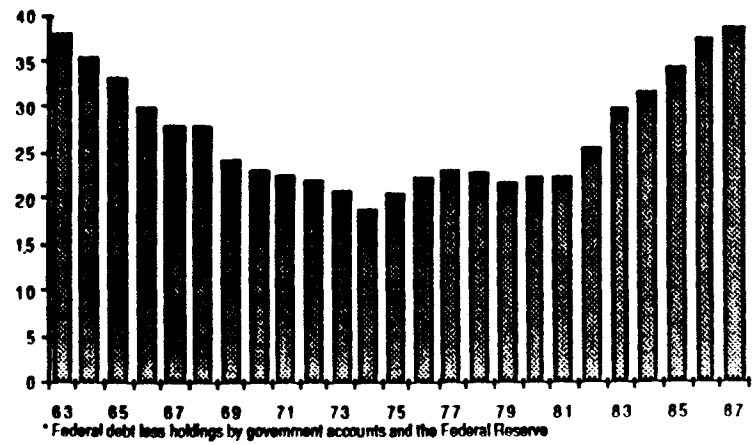
U.S. CURRENT-ACCOUNT DEFICIT

(Billions of dollars)



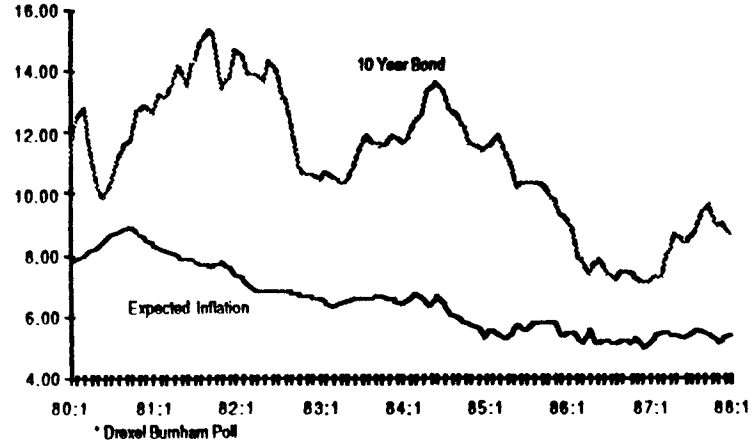
The U.S. current-account deficit is expected to diminish in 1988 from its peak of last year. Our foreign-trade deficit will decline by about $20-25 billion. A smaller reduction will occur in the overall current-account deficit because of a shift from surplus to deficit in the services balance.

NET NATIONAL DEBT* AS A % OF GNP
(Fiscal Years)



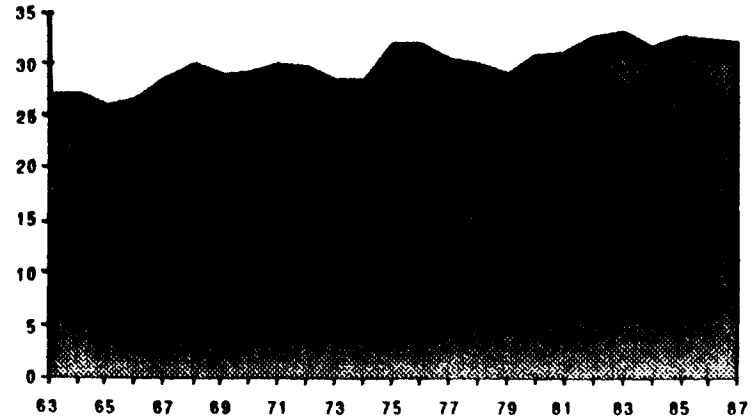
The net national debt of the United States reached 38 percent of GNP in fiscal 1987. This was double the ratio which existed in fiscal 1974.

10-YEAR TREASURY BOND & EXPECTED INFLATION *
(Percent)



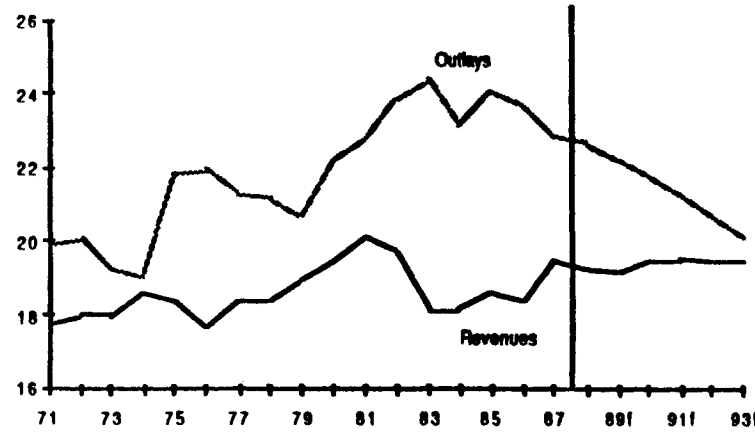
The actual level of interest rates reflects both the expected rate of inflation and a risk premium for uncertainty. More responsible fiscal policies could reduce both of these components and thus lower interest rates.

TOTAL GOVERNMENT SPENDING AS A % OF GNP
(Fiscal years)



Spending by all levels of government combined (federal, state, and local) amounted to nearly one-third of GNP in fiscal 1987. In the early 1960s, about 27 percent of total national income was channeled through the government sector.

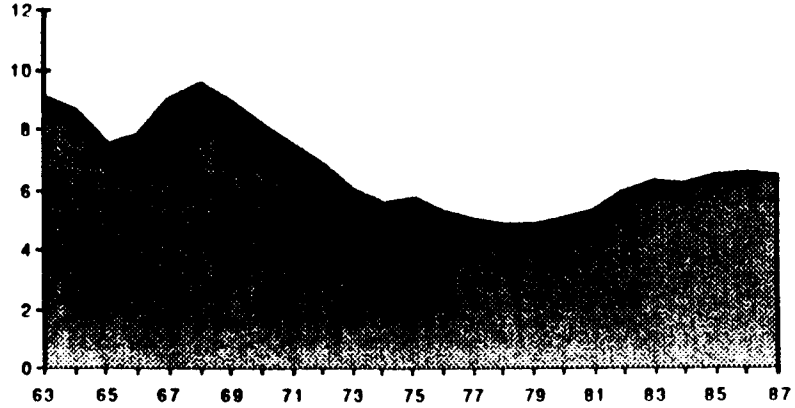
FEDERAL OUTLAYS AND REVENUES AS A % OF GNP
(Fiscal years)



Holding the growth of defense, entitlements and nondefense discretionary spending to an average of 3 percent per year, total spending could be reduced to 20 percent of GNP by fiscal 1993. Based on current CBO assumptions regarding the revenue/GNP share, the deficit would thus be reduced to less than one percent of national income.

DEFENSE AS A % OF GNP

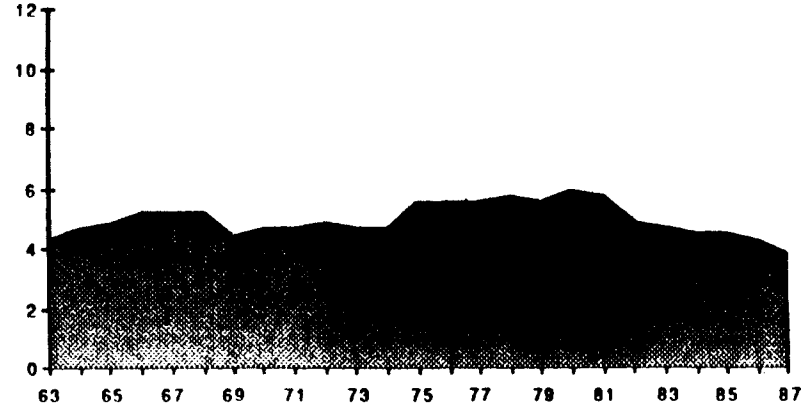
(Fiscal years)



In the past several years, defense spending has climbed from a low of 4.8 percent of GNP in 1979 to a peak of 6.5 percent in 1986. However, it is currently expected to drop again below 6 percent by 1989.

NONDEFENSE DISCRETIONARY AS A % OF GNP

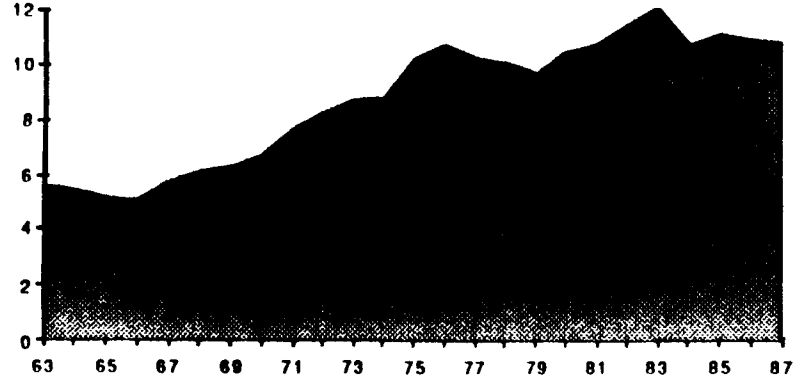
(Fiscal years)



The share of GNP comprised by nondefense discretionary spending has declined significantly since the peak of 5.9 percent in 1980. Last year, such spending fell to 3.7 percent of GNP, a share expected to also hold in 1988.

ENTITLEMENTS & OTHER MANDATORY AS A % OF GNP

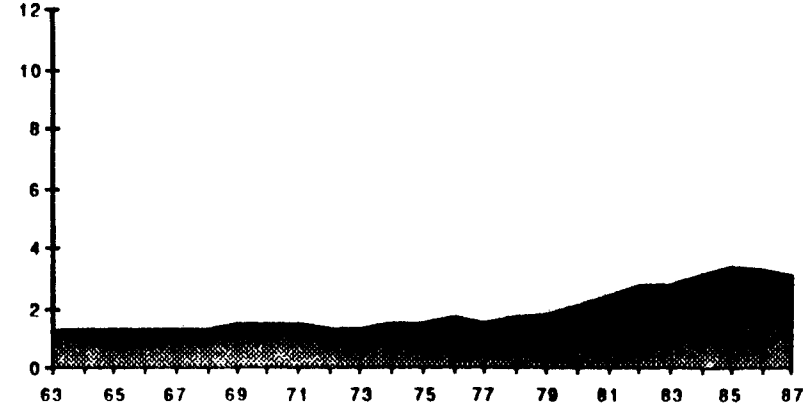
(Fiscal years)



Entitlements and other mandatory spending have climbed to nearly 11 percent of GNP in the last few years. This is twice the share of national income claimed by this sector in the first half of the 1960s.

NET INTEREST AS A % OF GNP

(Fiscal years)



Interest expense has been one of the fastest growing components of the federal budget in recent years and currently amounts to over 3 percent of GNP.

Chapter 4

Federal Budget Update — More of the Same

Mickey D. Levy
First Fidelity Bancorporation

In the Fiscal Year 1987, real outlays declined and the nominal budget deficit slid to $150 billion from $221 billion in FY1986. But a significant portion of the improvement was achieved through one-time events and, despite deficit-cutting legislation in late 1987, budget deficits in FY1988 and FY1989 should rise. Despite this renewed deterioration, little fiscal action should be expected in this presidential election year. President Reagan's last budget proposed only minor changes for FY1989 (*Budget of the United States Government, FY1989*), and Congress will have little incentive to consider seriously substantive budget action in 1988. Moreover, revisions to the Balanced Budget Act of 1985 (Gramm-Rudman-Hollings) make the new deficit constraint easier to circumvent. Thus, most likely, the burden of resolving the budget dilemma effectively will be shifted onto the next Administration and Congress. Barring an unexpected change in political priorities, continued pressures to cut deficits without reducing spending raise the probability of misguided tax increases in 1989.

4.1. Recent Budget Action

Last year's fiscal actions were supposed to resolve the federal budget dilemma. The Bipartisan Budget Agreement—precipitated by the Congress and Administration's incorrect perception that the stock market crash was caused by high budget deficits—led to enactment of the Omnibus Budget

Reconciliation Act of 1987 (P.L. 100–203) and the continuing resolution of appropriations (P.L. 100–202). These measures generated $34 billion in savings in FY1988 ($15 billion from lower spending, $11 billion from higher taxes, and $8 billion from asset sales and loan repayments), $36 billion in FY1989 ($19 billion from spending cuts and $17 billion from higher taxes), and $40 billion in FY1990. As required by the Bipartisan Budget Agreement, the reconciliation bill additionally included caps on appropriations for FY1989 that limit growth in budget authority to $2\frac{1}{2}$ percent for defense and 2 percent for non-defense programs.

Earlier, enactment of the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987 (P.L. 100–119) revised the original Balanced Budget Act of 1985 (GRH) by easing the deficit targets, stretching out their implementation through 1993, and changing the sequestration process. The new GRH II targets for FY1988 and FY1989 are $144 billion and $136 billion, up significantly from the original $108 billion and $72 billion. GRH II allows that sequestration may be avoided if deficit reduction measures of $36 billion or more are achieved before scheduled sequestration, and limits the amount of across-the-board cuts in any fiscal year to $36 billion. Also, GRH II provides that the OMB's budget forecast alone determines whether or not sequestration is necessary and the magnitude of the cuts. Previously, the arithmetic average of OMB's and CBO's deficit forecast determined the amount of required sequestration. Still intact in GRH II is the provision that if real GNP growth is less than 1 percent for any two consecutive quarters, or if either OMB or CBO projects real GNP to decline for any two consecutive quarters, Congress may vote to temporarily suspend GRH's sequestration process. Proceeds from asset sales or prepayments are no longer counted toward deficit reductions.

4.2. The Budget Outlook

The President's *FY1989 Budget* proposes a deficit of $129.5 billion in FY1989, below the new GRH target (see Table 1), with very new proposals. The budget includes a 3.6 percent increase in outlays (a 0.2 percent decline in real terms) and a 6.1 percent increase in receipts.

The Administration's budget projects an 0.8 percent annual growth in real spending from FY1988 to FY1991, a continuation of the trend of sharply slower spending growth that began in FY1986. Real spending rose

2.1 percent in FY1986 and declined 0.7 percent in FY1987, after rising 3.2 percent annually from 1970 to 1980 and 3.9 percent annually from 1980 to 1985. Inflation-adjusted receipts are proposed to grow substantially faster, at a 3.6 percent annual rate, from FY1988 to FY1991. Also, the composition of proposed federal spending is in sharp contrast to the early 1980s: from FY1988 to FY1991, nearly all of the proposed increases in real outlays occur in payments to individuals (largely retirement and medical program outlays). Real defense spending increases by less than 0.3 percent annually, while real outlays for net interest, grants to state and local governments and other spending programs are projected to decline.

In sharp contrast to the Administration's optimistic budget outlook, the Congressional Budget Office baseline forecast calls for a sharp increase in the FY1989 deficit to $176 billion (CBO, *The Economic and Budget Outlook: Fiscal Years 1989-1993*, February 1988). The $40 billion gap between the CBO projected baseline deficit and the GRH II FY1989 deficit target widens in FY1990 and FY1991. Although the CBO baseline projection does not include the President's budget proposals, it suggests that without significantly more deficit-cutting than is requested in the President's budget, GRH's deficit targets will be grossly violated. Under the new maximum sequestration of $36 billion, there would be cuts of approximately 9 percent in defense and 13 percent in non-defense programs.

The wide difference between the Administration and CBO's budget forecasts is due primarily to the underlying economic projections (see Table 2). The Administration forecasts significantly stronger economic growth, lower inflation, and lower nominal and real interest rates than the CBO. It forecasts real GNP to grow 2.4 percent from 1987:IV to 1988:IV, and 3.5 percent in 1989. Its 1988 economic growth forecast represents a significant downward revision from the 3.5 percent it forecast in the *Mid-Session Review of the FY1988 Budget*, issued in August 1987. Nevertheless, this economic growth forecast is substantially more optimistic than the CBO's baseline forecast, which projects real GNP growth of 1.8 percent from 1987:IV to 1988:IV, and 2.6 percent in 1989. The gap between their real GNP growth projections widens in the later projection years.

The Administration and CBO have similar implicit GNP deflator forecasts in 1988, but the CBO projects higher inflation in 1989 and beyond. Consequently, after 1988, the CBO's nominal GNP growth path is not significantly less than the Administration's. The sizeable forecast difference

in 1988, however, generates approximately $12 billion lower receipts in the CBO's baseline forecast in FY1989 and beyond.

The difference in interest rate paths is the largest source of discrepancy between the Administration's and CBO's budget projections. With its higher rate assumptions, the CBO's baseline forecast projects net interest outlays to rise to $196 billion by FY1991, compared to the Administration's $160 billion. The Administration projects continuous declines in interest rates on 3-month Treasury bills and 10-year Treasury bonds. With little change in inflation expectations from 1988 to 1990, this implies significant declines from present levels in inflation-adjusted interest rates. In contrast, the CBO projects increases from current levels in both short and long-term Treasury rates, and significantly higher inflation-adjusted rates than the Administration. Implicit in the CBO's interest rate forecast is the expectation of a 10 percent decline in the exchange value of the U.S. dollar from early 1988 through year-end 1989, and a continued depreciation throughout the projection period.

The actual path of outlays and receipts is very sensitive to economic and interest rate outcomes. Using general rules-of-thumb, the Administration estimates that a one percentage point lower annual real GNP growth rate beginning in fiscal year 1989 would add to the deficit $7.7 billion in FY1989, $21.8 billion in FY1990, and $39 billion in FY1991, with approximately three-quarters of the deterioration due to lower receipts. The CBO's estimated sensitivity is somewhat larger. The Administration also estimates that a sustained one percentage point higher interest rate beginning in fiscal year 1989, with no inflation change, would add $5.2 billion in FY1989, $10.5 billion in FY1990, and $14.4 billion in FY1991.

In light of the large errors in economic forecasting in the 1980s, any criticism of either the Administration's or CBO's forecast cannot be made with certainty. However, the Administration's projection of continuous rapid economic growth, with no recession, and declining interest rates, seems suspect. The probability of no recession throughout the projection period is slim. Even if the projected average economic growth rate is achieved, but a recession occurs, levels of GNP and the federal deficit would temporarily fall far short of the Administration's projections. Moreover, the projected 3.2 percent annual real GNP growth from 1989 to 1991 is substantially higher than the average annual rate of long-run economic growth. Implicit in this projection is nearly 2 percent annual improvement in pro-

ductivity. This rate is substantially higher than average productivity gains since the early 1970s, but in line with the long-run rate of productivity growth. While this projection cannot be rejected, demographic trends and expected slower labor force growth, with an already low unemployment rate, imply that the projected economic growth path hinges critically on these productivity gains.

The Administration's interest rate projections hinge upon no change in inflation from 1988 to 1990 and declining real interest rates. Its inflation projection may be too optimistic. Also, declining real interest rates may be inconsistent with the projected rapid economic growth, in the absence of any tax policy change. If, in fact, real rates were to fall as the President's budget assumes, in the absence of international real rate adjustments, one could expect a decline in the U.S. dollar. This would raise inflationary expectations, which would generate a steeper yield curve and probably drive up nominal interest rates.

These concerns suggest that the Administration's budget projections are too optimistic. Given all that may go wrong, the CBO's baseline projection seems to be a better central tendency for what may actually occur.

4.3. Outlook for the Budget Process

Even if the budget outlook deteriorates from the President's *FY1989 Budget* projections, and the FY1989 deficit appears to be above $146 billion (the new GRH $136 billion target plus $10 billion leeway), neither significant budget legislation nor sequestration under GRH should be expected this year. Neither political party would find it advantageous to pursue large spending cuts or tax increases this presidential election year, and the President is not expected to initiate budget legislation beyond the minor proposals included in the FY1989 budget. If the deficit outlook deteriorates, how can sequestration be avoided? Quite simply, under the revised GRH, OMB may submit a deficit forecast that meets the GRH target, based on any economic projection it chooses.

This action would comply with the legal provisions of the new GRH, but effectively shift the burden of the unresolved budget dilemma onto the next Administration and Congress. This does not heighten my level of comfort with either the process or the likely budget outcome. The earlier anticipated flaws of GRH are surfacing. GRH's deficit targets are arbitrary, without

any economic rationale. The budget constraints generate an overemphasis on the deficit. This diverts attention away from the level of outlays, and reduces the emphasis on meaningful debate on tax and spending programs, their economic effects, and the national priorities they imply. Moreover, GRH's across-the-board sequestration process is porous. As such, it has deviated from its original intent of reducing the deficit through spreading evenly the burden among all spending programs. It excludes from consideration several large programs, most notably social security, that must be addressed if the deficit issue is to be resolved. A positive note, however, is that GRH, despite all its flaws, probably has deterred additonal federal spending. Outlays as a percent of GNP will fall to an estimated 22.4 percent of GNP in FY1987 from 24 percent in FY1985.

Recent budget events show that GRH is only as binding as the Administration and Congress wish. As the gap between realistic deficit projections and the new GRH deficit targets widens in 1989, to outcomes seem likely: the budget constraint will be modified again, and a tax hike will become the centerpiece of a new budget compromise. Unfortunately, politicians may find raising taxes the easiest way to reduce deficit projections, and the next Administration is not likely to have the same resolve against higher taxes than does the Reagan Administration. Higher taxes would serve to validate a higher spending share of GNP. And unless additional new taxes are assessed solely on consumption, they may be inconsistent with long-run goals of savings, investment and economic growth.

TABLE 1

Selected Budget Projections

	Fiscal Years				
	1987	1988	1989	1990	1991
Receipts					
President's Budget	854.1	909.2	964.7	1044.1	1124.4
CBO Baseline	854.0	897.0	953.0	1036.0	1112.0
Outlays					
President's Budget	1004.6	1055.9	1094.2	1148.3	1203.7
CBO Baseline	1005.0	1055.0	1129.0	1203.0	1269.0
Deficit Projections					
President's Budget	150.4	146.7	129.5	104.2	79.3
CBO Baseline	150.0	157.0	176.0	167.0	158.0
Memo: New GRH Targets	144.0	144.0	136.0	100.0	64.0
Original GRH Targets	144.0	108.0	72.0	36.0	0.0
Deficit-to-GNP Ratio					
President's Budget	3.4	3.1	2.6	1.9	1.4
CBO Baseline	3.4	3.4	3.5	3.1	2.8
Public Debt-to-GNP Ratio					
President's Budget	43.0	43.0	42.8	41.9	40.5
CBO Baseline	43.0	43.6	44.5	44.7	44.6
President's Budget Receipt Growth					
Nominal	11.1	6.5	6.1	8.2	7.7
Real	8.7	2.5	2.2	4.4	4.2
President's Budget Spending Growth					
Nominal	1.4	5.1	3.6	4.9	4.8
Real	-0.7	1.2	-0.2	1.2	1.4

TABLE 2

Administration and CBO Projections

	1987	1988	1989	1990	1991
Percent change, fourth quarter over fourth quarter:					
Real GNP					
Administration	3.8	2.4	3.5	3.5	3.4
CBO	3.8	1.8	2.6		
Nominal GNP					
Administration	7.2	6.4	7.3	7.1	6.5
CBO	7.2	5.7	6.9		
CPI-W					
Administration	4.6	4.3	3.9	3.5	3.0
CBO	4.6	4.9	4.8		
Percent change, calendar years:					
Nominal GNP					
Administration	5.9	6.5	7.0	7.2	6.7
CBO	5.9	5.8	6.8	6.8	6.8
Real GNP					
Administration	2.9	2.9	3.1	3.5	3.4
CBO	2.9	2.3	2.6	2.6	2.6
GNP Deflator					
Administration	3.0	3.5	3.8	3.6	3.2
CBO	3.0	3.4	4.1	4.1	4.1
CPI-W					
Administration	3.6	4.3	4.1	3.6	3.2
CBO	3.6	4.5	4.9	4.6	4.4
Interest Rates, percent, Calendar Year Averages:					
3-Month T-Bill					
Administration	5.8	5.3	5.2	5.0	4.5
CBO	5.8	6.2	6.7	6.6	6.4
10-Year Government Bond					
Administration	8.4	8.0	7.4	6.8	6.0
CBO	8.4	9.3	9.5	9.0	8.4
Memo: Inflation-Adjusted (CPI) Rates					
3-Month T-Bill					
Administration	2.2	1.0	1.1	1.4	1.3
CBO	2.2	1.7	1.8	2.0	2.0
10-Year Government Bond					
Administration	4.8	3.7	3.3	3.2	2.8
CBO	4.8	4.8	4.6	4.4	4.0

Chapter 5

Monetary Aggregates and Economic Activity

Robert H. Rasche
Michigan State University

Attached you will find a preliminary copy of a section of a paper that I am preparing for a Federal Reserve Board conference next May. This particular section addresses the behavior of demand functions for two measures of the monetary base (Board of Governors and St. Louis Federal Reserve Bank), in the context of the $M1$ demand equations that I discussed at the Carnegie-Rochester Conference in November, 1986 and have reported at the past two Shadow meetings.

The part of this draft that you will probably find most interesting is the section on forecasting and the graphs at the end. The specification in terms of the monetary base measures is even more stable than it is for $M1$. It is possible to forecast the events of the past two years extremely well, based on estimates through 1985, and it is possible to forecast all of the post-1981 experience based on estimates through 1981 and a modification of the constant term (drift of velocity).

The projections from various $M1$ equations that I have estimated indicate a number of large errors during late 1986 and from time to time in 1987. In late 1986 these errors appear to be systematic (as I reported at our last meeting) but during 1987 they seem to be quite random.

Based on this information, it is my conclusion that some strange things are going on with the monetary base multiplier over the past year-and-a-half, which I haven't fully investigated at this point. Whatever this may

be, it has not affected the long standing relationship between the monetary base and economic activity, consequently I believe that it is appropriate to judge the impact of monetary policy in the recent past and in the near future in terms of the effect it has had, or will have on the growth rate of the base.

5.1. III. Demand Functions for the Monetary Base

The previous sections indicate that it is possible to obtain extremely parsimonious specifications for demand functions for various measures of "transactions money," in the U.S. economy which are extremely robust over the entire Post-Accord period, and which are consistent at various levels of time aggregation.

The demand for the monetary base can be viewed as a derived demand generated by the demand for "transactions money" and other assets which are subject to legal reserve requirements. This is conveniently summarized in terms of a "money multiplier" identity:

$$M_t = m_t * B_t \tag{5.1}$$

where M_t is nominal transactions money, B_t is the monetary base, and m_t is the "money multiplier." In real percentage terms this is rewritten as:

$$[\Delta lnM_t - \Delta lnP_t] = \Delta ln(m_t) + [\Delta lnB_t - \Delta lnP_t] \tag{5.2}$$

When this equation is substituted into the demand equation for "transactions money" and the "money multiplier" term is subtracted from both sides of the equation, a derived demand function for the money base results:

$$[\Delta lnB_t - \Delta lnY_t] = \alpha - \sum_{i=0}^{n} \beta_i \Delta RTB_t + \sum_{i=0}^{n} \phi_i \Delta ln(Y/P)_t + \theta DINFU_t + \lambda D82_t - \Delta lnm_t + \epsilon_t \tag{5.3}$$

The evidence compiled in Rasche and Johannes [1987] strongly suggests that the various component ratios of the "money multiplier" are accurately described in terms of very simple ARIMA models and that the correlation of these variables with interest rates and income variables is very close to

zero. The weight of various econometric studies of "structural equations" supports this conclusion. Therefore, it is unlikely that any strong correlation exists between the percentage change of the multiplier and any of the other variables on the right-hand side of equation (5.3). Under these conditions, it is unlikely that any substantial bias is introduced into the estimation of equation (5.3) if the term $\mu_t = [-\Delta lnm_t + \varepsilon_t]$ is treated as a composite error term. There is the possibility that the serial correlation properties of Δlnm_t could introduce serious serial correlation into the μ_t composite error that does not appear to be present in the estimated ε_t's. Estimates of the low order autocorrelation coefficients for Δlnm_t are given in Table III.1 for both the Adjusted Monetary Base published by the Federal Reserve Bank of St. Louis and the Monetary Base published by the Board of Governors during various sample periods. The conclusion from these statistics is that regardless of concept and regardless of sample period, the log first difference of the seasonally adjusted monetary base on a monthly basis is approximately a random walk. Therefore, the hypothesis is that a derived demand function for the monetary base can be estimated of the form:

$$[\Delta lnB_t - \Delta lnY_t] = \alpha - \sum_{i=0}^{n} \beta_i \Delta RTB_t + \sum_{i=0}^{n} \phi_i \Delta ln(Y/P)_t + \theta DINFU_t + \lambda D82_t + \mu_t \qquad (5.4)$$

Since under the maintained hypotheses regarding the money multiplier the estimates of the parameters in equation (5.4) are estimates of the same parameters as those in the "transactions money" equations discussed previously, the same parameter restrictions that were found to be valid in the various "transactions money" demand equations should be applicable to the estimated parameters of equation (5.4).

The unrestricted estimates of the parameters of equation (5.4) are presented in Tables III.2 and III.3 for the Board of Governors Monetary Base and the St. Louis Fed Adjusted Monetary Base, respectively, for sample periods corresponding to those estimated for "transactions money" for monthly data. The only exception is that since the Board of Governors Monetary Base is not available before January, 1959, the 1950s have been dropped from the longer samples using this variable.[1] A comparable sample

[1]The Adjusted Monetary Base was revised in December, 1987 after work on this re-

is included in Table III.3 for the Adjusted Monetary Base.

Tables III.2 and III.3 contain several notable results. First, all conclusions are invariant to the choice of measurement of the monetary base. Second, the estimates are robust to the choice of sample period. The estimates are the same in the pre-1975 sample period as in the post-1975 sample period, and are not altered by the extension of the sample from the end of 1985 to the middle of 1987. Third, the "shift in the drift" as measured by the coefficient of $D82$ which is characteristic of all of the $M1$ nexus is highly significant in these results also. Fourth, in contrast with the estimates of $M1$ equations reported in Rasche [1987a], there is no eivdence of heteroscadasticity in the residuals of the monetary base demand equations as the sample period is extended into the late 1970s and 1980s. Fifth, estimated residuals exhibit only very low first order serial correlation to the extent that they give any indication of serial correlation. This is consistent with the estimates of this specification for the $M1$ equations and suggests that impounding the "money multiplier" term in the composite error of the monetary base specification causes little if any specification error problem. Sixth, the parameter restrictions that were not rejected for the $M1$ demand equations appear equally valid for these base demand equations, as measured by the F-tests reported at the bottom of Tables III.2 and III.3. In several of the samples for the Monetary Base, the F-tests are on the margin of rejection at the 5 percent level, but in all cases with the Adjusted Monetary Base, the restrictions are not rejected at very high α values.

Only semilog specifications in the Treasury Bill rate are reported in Tables III.2 and III.3. In a few cases estimates were constructed for double log specifications. The results of these estimations provided little basis for choosing among the two functional forms. Other tests were performed to consider whether the interest semi-elasticity of the base changed in the post-1981 period. In every case the data rejected a shift in this coefficient. Therefore, as far as the monetary base is concerned, it appears that the increase in the demand elasticity in the post-1981 period that was found in the "transactions money" demand equations by Rasche[1987b] is adequately captured by a constant interest semi-elasticity and the higher average Treasury Bill rates in the post-1981 sample period. The estimated impact of real income elasticities in these specifications is virtually identical

search was started (see Gilbert [1987]). Consequently, the data used in the regressions reported here are the pre-revision estimates.

to those estimated in the "transactions money" equations.[2]

Finally, the estimated standard errors of the residuals of the base demand equations are considerably lower than the corresponding estimated standard errors for the "transactions money" equations. This is in part because of the lower variability of the monetary base measures, as can be seen from Table III.3 where the adjusted R^2's are of the same size as those in the "transactions money" equations, while the estimated standard errors of the residuals are considerably lower. In the case of the Monetary Base, the estimated standard errors are lower than in the transactions money equations *both* because the sample variance of the money is lower, *and* because the specification captures a larger percentange of that variation.

It is interesting to speculate why the estimated variance of the composite error term, μ, is lower than the estimated variance of the "transaction money" demand error term, ϵ. One rationalization of this result is that the dominant source of shocks to the demand for "transactions money" are shocks to the transaction deposit component of that aggregate. Let σ_D measure the standard deviation of such shocks and *assume* that this is the only source of shock to the demand for transactions money. Since transactions deposits average around 70 percent of $M1$, under these assumptions $.7\sigma_m = \sigma_D$. Shocks to transactions deposits in the absence of shocks to the currency component of $M1$ imply shocks to the currency-deposit ratio, k, which is historically the most important source of variation in the money multiplier. The elasticity of the money multiplier with respect to the currency-deposit ratio is $k * (1 + k)^{-1} * (1 - m)$ which under the assumption of k approximately equal to .4 and m approximately equal to 2.6 is approximately .45. Thus the standard deviation of the money multiplier with respect to shocks to transaction deposits $\sigma_m = .45\sigma_D = .64\epsilon_m$. The variance of the composite error term $\sigma_\mu^2 = \sigma_m^2 + \sigma_\epsilon^2 - 2\rho\sigma_m\sigma_\epsilon$. Under these assumptions, this equation can be solved for an implied estimate of the correlation between shocks to transactions deposits and shocks to the money multiplier which is consistent with the observation of lower standard errors of the residuals of the monetary base specifications. These computations suggest correlations on the order of .5 – .6.

[2]This result is not consistent with the alternative hypothesis that the interest elasticity of the "money multiplier" is positive. Under this alternative hypothesis, the estimated interest semi-elasticities in the monetary base equations should be larger in absolute value that those estimated from the "transactions money" equations.

The restricted estimates of the derived demand for the monetary base and the adjusted monetary base are given in Tables III.4 and III.5, respectively. The only substantial differences between the estimated parameters here and those of the "transactions money" specifications discussed above are the lower interest rate semi-elasticities and that the estimate of the pre-1981 drift of the monetary base velocity is approximately one-half percent (at annual rates) lower than that estimated for transactions money.

5.2. Forecasting

There are two interesting forecasting experiments to perform given the results in Table III.4 and III.5. First, how well do the pre-1982 parameter estimates forecast the 1980s, if allowance is made for the "shift in the drift" that is estimated to occur around the beginning of 1982? This is important, since in recent discussions of monetary policy it is commonly asserted that previously established relationships between monetary aggregates and economic activity measures are completely broken down. Second, how well do estimates from samples ending in 1985 predict the demand for the monetary base in 1986 and 1987? This is important since it is claimed that if there was any life left in the assertion that monetary aggregates are appropriate guides for money policy after the experience of the early 1980s, the experience of 1986–7 provides the final nail in the coffin [Friedman, 1988]. The errors in this experiment are also important for interpreting the implications for the course of the economy in 1988 of the monetary acceleration in 1985–6 followed by the deceleration in 1987.

Two relevant experiments are available for each of the monetary base measures. First, the parameter estimates for the sample periods ending with 1981 can be used to project the percentage changes of base velocity for the 70 months from January, 1982 through October, 1987. Second, the estimates for the sample periods ending with 1985 can be used to project the percentage changes of base velocity for the 22 months from January, 1986 through October, 1987. Since there are no lagged dependent variables in the estimated specification, nor is there any autoregression in the error structure, on the surface there is no distinction between "static" and "dynamic" forecasts here. However, there is a secondary problem in these experiments in constructing values for the unexpected inflation variable, $DINFU_t$.

$DINFU_t$ is measured during the sample periods as the residual (innovation) of a $MA(1)$ model, estimated over a sample period beginning in January, 1953 and ending with the end of the sample period of the base demand equation. Post-sample values for $DINFU_t$ are constructed as the difference between the observed change in inflation rate and the *static* forecasts from the sample period $MA(1)$ model for each month in the forecast period. Thus, it is important to view the predictions of base demand as *static* forecasts.

The post-sample projections of percentage change in the monetary base and the observed percentage changes in the monetary base are plotted in Figures III.1–2 for the Monetary Base, and Figures III.3–4 for the Adjusted Montary Base. These figures suggest that the estimated equations track the post-sample behavior of base velocity remarkably well and completely contradict the presumptions that there is no longer a stable relationship between a narrowly defined monetary aggregate and economic activity and that the relationship between the monetary base and economic activity bears no relation to the pre-1980 experience. Graphs of observed and projected values can present a distorted picture, therefore, the projection errors for these experiments are given in Figures III.5 through III.8. The only evidence of anything unusual occurring in these errors, relative to the sample period experience, is during one or two months around the end of 1986 and the beginning of 1987 (the timing varies slightly with the different monetary base concepts). This may be nothing more than an artifact of unrevised data.

The statistical characteristics of these projection experiments are summarized in Table III.6. In every case the root-mean-squared-errors are comparable to the standard error of the residuals during the sample period. In three of the four cases (the exception is the 1986-87 projection of the Monetary Base) the proportion of the RMSE attributation to bias(U_m) is very close to zero. In all cases the proportion of the RMSE attributable to unequal variance is less than .25. In summary, the available evidence strongly supports a stable demand function for the monetary base during the 1980s comparable to the relationship that existed in the 1950s through the 1970s.

5.3. Time Aggregation and Alternative Measures of Economic Activity

The comparable specification on a quarterly average basis to the monthly specification discussed here is derived in the Appendix. Estimates on a quarterly average basis for both monetary base concepts using personal income and GNP are given in Tables III.7 and III.8. In these equations quarterly personal income is the geometric average of the corresponding monthly data, quarterly average Treasury Bill rates are the arithmetic average of the corresponding monthly data, and GNP is the published quarterly data. These estimates are constructed from specifications that omit the variables that represent the intra-quarter effects discussed in the Appendix. The unexpected inflation variable is the difference between actual inflation for the quarter and the prediction from a $MA(1)$ model estimated on quarterly data.

The parameter estimates in these tables are consistent with the comparable estimates from the monthly data in Tables III.4 and III.5. In addition, the ratio of the standard errors of the residuals in the monthly equations (at annual rates) to the standard errors of the residuals in the corresponding quarterly equations (at annual rates) is approximately equal to the square-root of 3. The one unexpected characteristic of the quarterly specifications is the low Durbin-Watson Statistics. The autocorrelation functions of the residuals from all the estimated equations in Tables III.7 and III.8 suggest significant $AR(1)$ processes. The source of this serial correlation is not clear, particularly given the absence of serial correlation in the monthly specifications. The equations estimated with personal income were expanded to include the intra-quarter variation terms that appear in the Appendix, but the serial correlation remained with these terms added to the equations.[3] The one change in the specification that appears to have a substantial effect on the serial correlation of the residuals is the computation of the unexpected inflation term. When the average of the three one-month forecast errors from a monthly $MA(1)$ model of the change in monthly inflation rates is used rather than the forecast error from a quarterly $MA(1)$ model of the change in the quarterly inflation rate, the serial correlation of the

[3]The serial correlation of the residuals is not a result of the restrictions imposed on the parameters in these equations. The Durbin-Watson values are virtually the same for estimations with all of the parameters free.

residuals in the equations with personal income is greatly reduced, with little effect on any of the estimated parameter values.

5.4. Appendix: Aggregation Over Time

In Rasche [1987a] the issue of time aggregation of $M1$ demand equations was investigated, but a number of casual approximations were assumed. The purpose of this Appendix is to examine the exact quarterly average and annual average demand equations that are implied by an assumed monthly demand specification. The basic monthly demand specification with all the rstrictions applied to the various parameters is:

$$[\Delta lnM_{t-j} - \Delta lnY_{t-j}] = \alpha + \beta \sum_{i=0}^{n} \Delta RTB_{t-i-j} - (n * \gamma)\Delta ln(Y/P)_{t-j} + \gamma \sum_{i=1}^{n} \Delta ln(Y/P)_{t-i-j} - (n * \gamma)DINFU_{t-j} - \alpha D82_{t-j} + \varepsilon_{t-j}$$

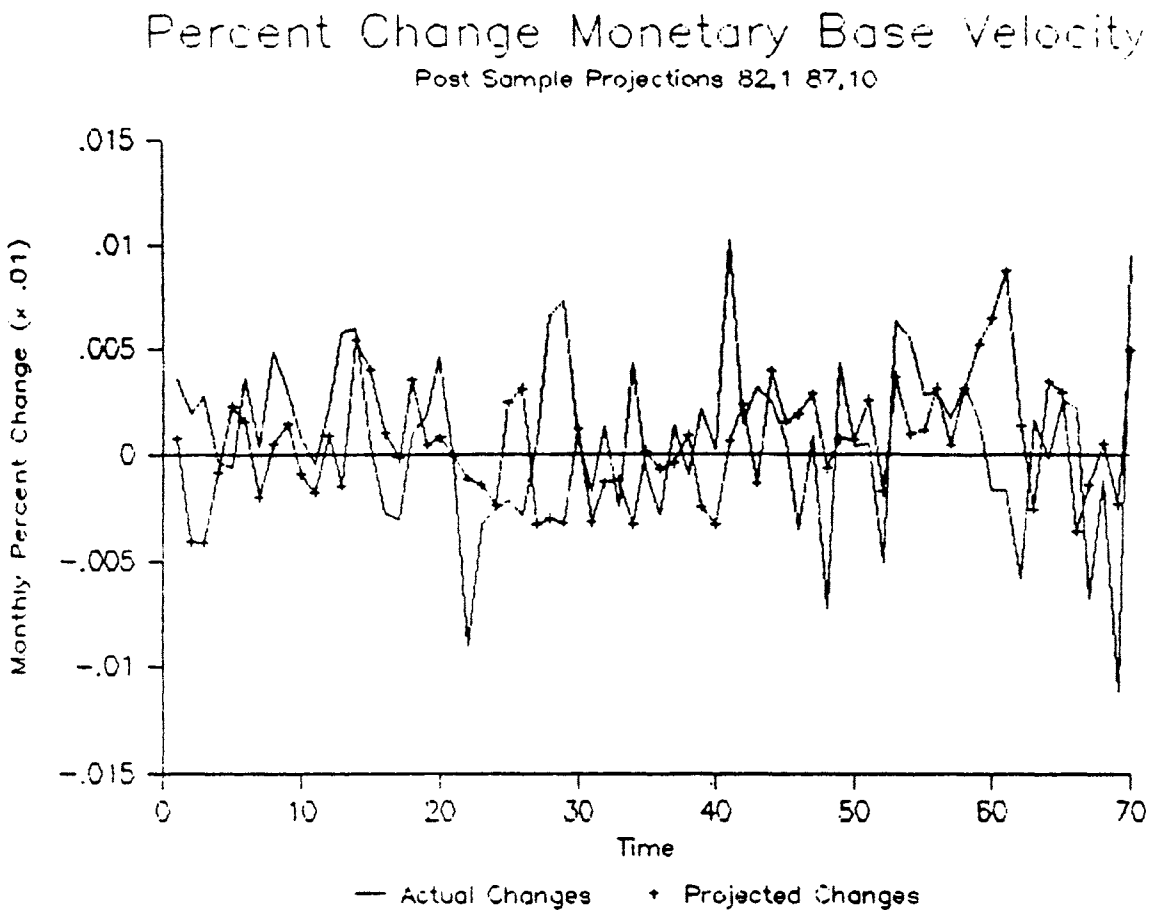
for $j = 0, 1, \ldots$. When this equation is averaged over $j = 0, \ldots, 2$ the resulting expression is:

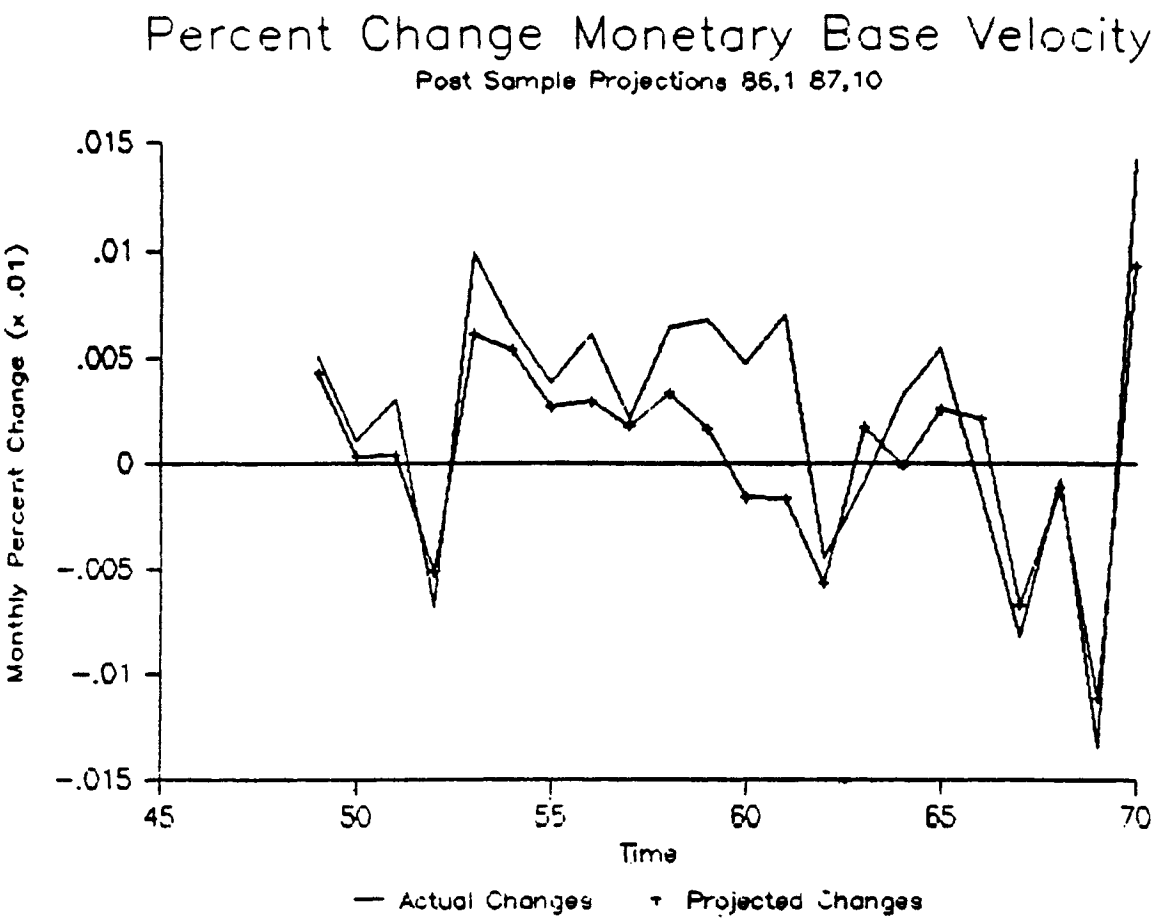
$$\sum_{j=0}^{2} \Delta lnM_{t-j}/3 - \sum_{j=0}^{2} \Delta ln(Y/P)_{t-j}/3 = \alpha + (2 * \beta) \sum_{j=0}^{2} \Delta RTB_{t-j}/3$$

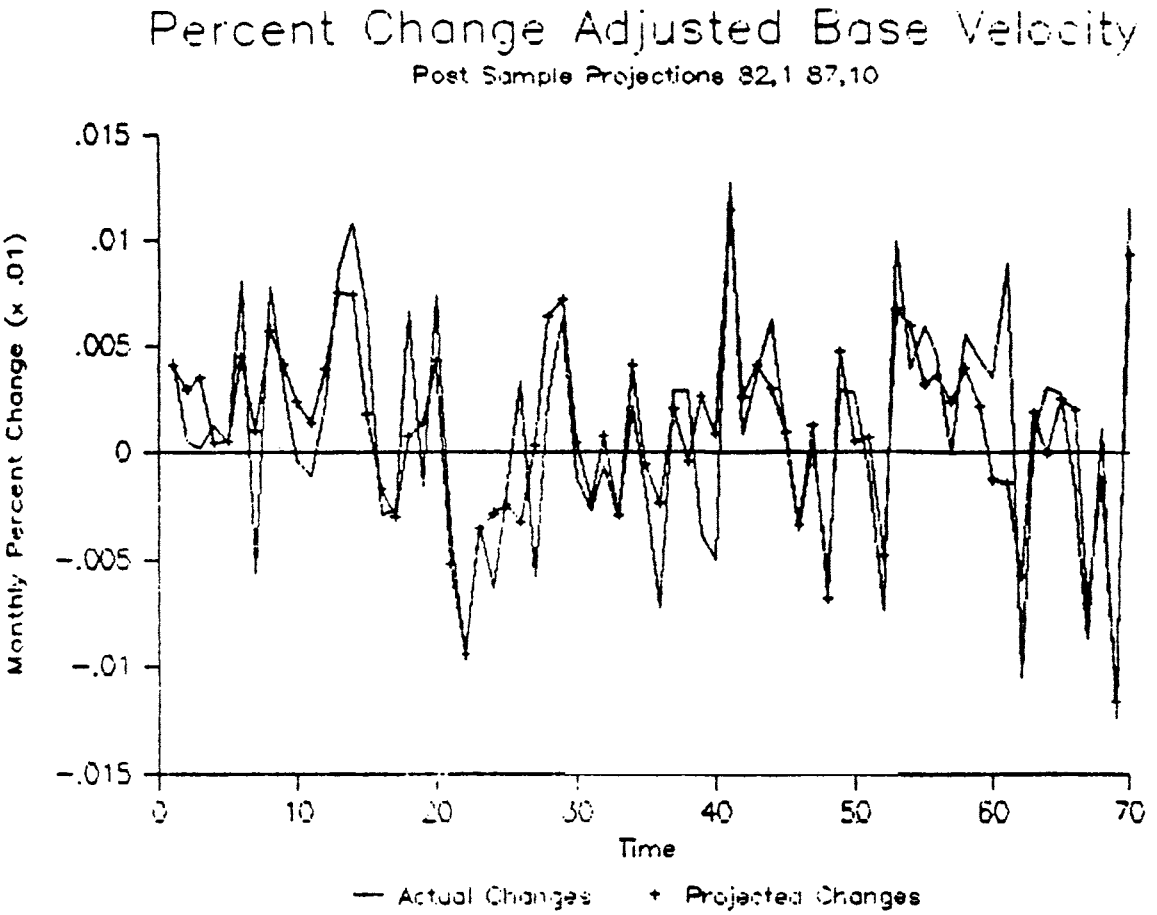
$$+ (3 * \beta) \sum_{j=3}^{5} \Delta RTB_{t-j}/3 + (3 * \beta) \sum_{j=6}^{8} \Delta RTB_{t-j}/3 + \beta \sum_{j=9}^{11} \Delta RTB_{t-j}/3$$
$$- (2 * \beta)(\Delta RTB_t - \Delta RTB_{t-2})/3 + \beta(\Delta RTB_{t-9} - \Delta RTB_{t-11})/3$$
$$- (7 * \gamma) \sum_{j=0}^{2} \Delta ln(Y/P)_{t-j}/3 + (3 * \gamma) \sum_{j=3}^{5} \Delta ln(Y/P)_{t-j}/3$$
$$+ (3 * \gamma) \sum_{j=6}^{8} \Delta ln(Y/P)_{t-j}/3 + \gamma \sum_{j=9}^{11} \Delta ln(Y/P)_{t-j}/3$$
$$- \gamma(\Delta ln(Y/P)_t - \Delta ln(Y/P)_{t-2})/3$$
$$+ \gamma(\Delta ln(Y/P)_{t-9} - \Delta ln(Y/P)_{t-11})/3$$
$$- (8 * \gamma) \sum_{j=0}^{2} DINFU_{t-j}/3 - \alpha \sum_{j=0}^{2} D82_{t-j}/3 + \sum_{j=0}^{2} \varepsilon_{t-j}/3$$

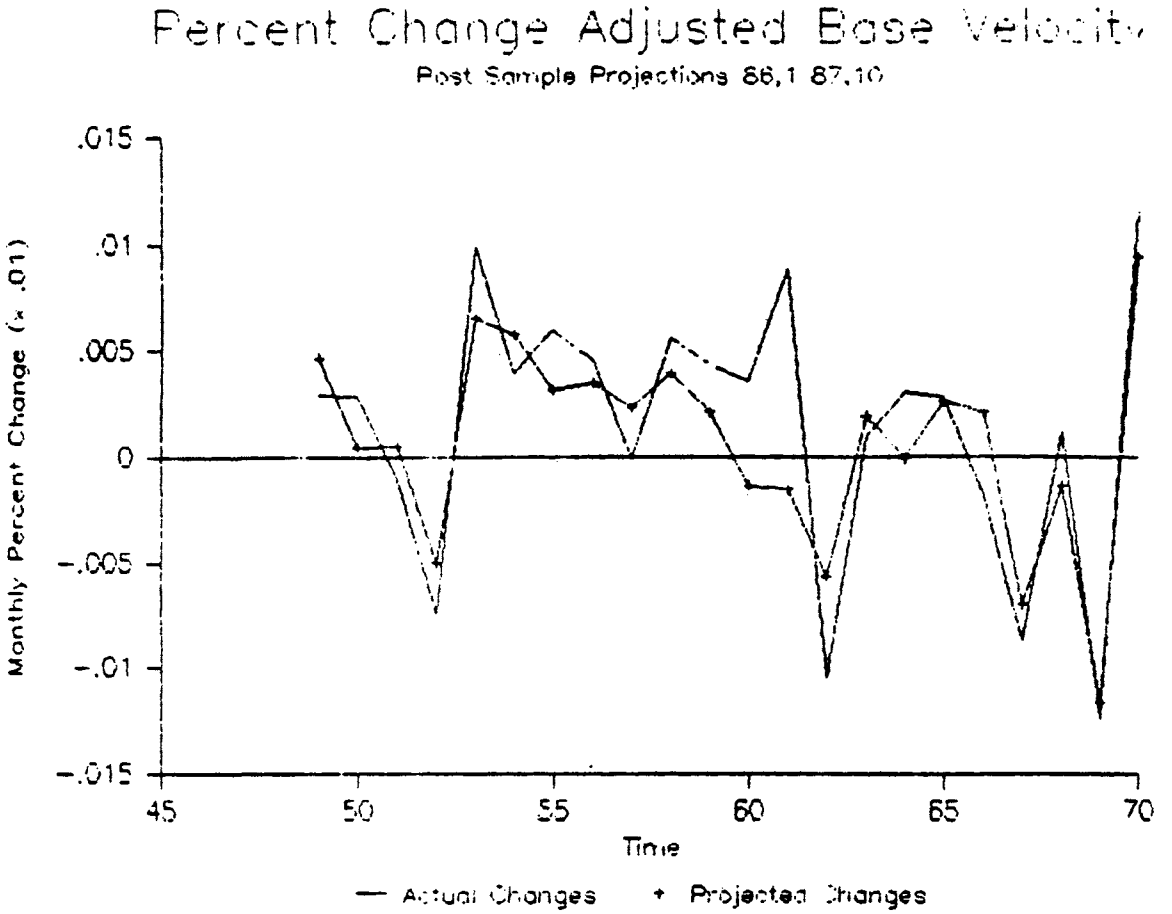
This expression gives the quarterly (geometric) average velocity as a function of distributed lags on quarterly (arithmetic) average interest rates and quarterly (geometric) average real income, two intra-quarter variation terms in both interest rates and real income, and the quarterly average of unanticipated inflation. The latter term is not the average unanticipated inflation for the quarter based on expectations during the previous quarter, but rather the average of the three individual one-month expectation errors during the quarter. Thus, it is not possible to approximate the average of the monthly specification exactly in terms of quarterly average data.

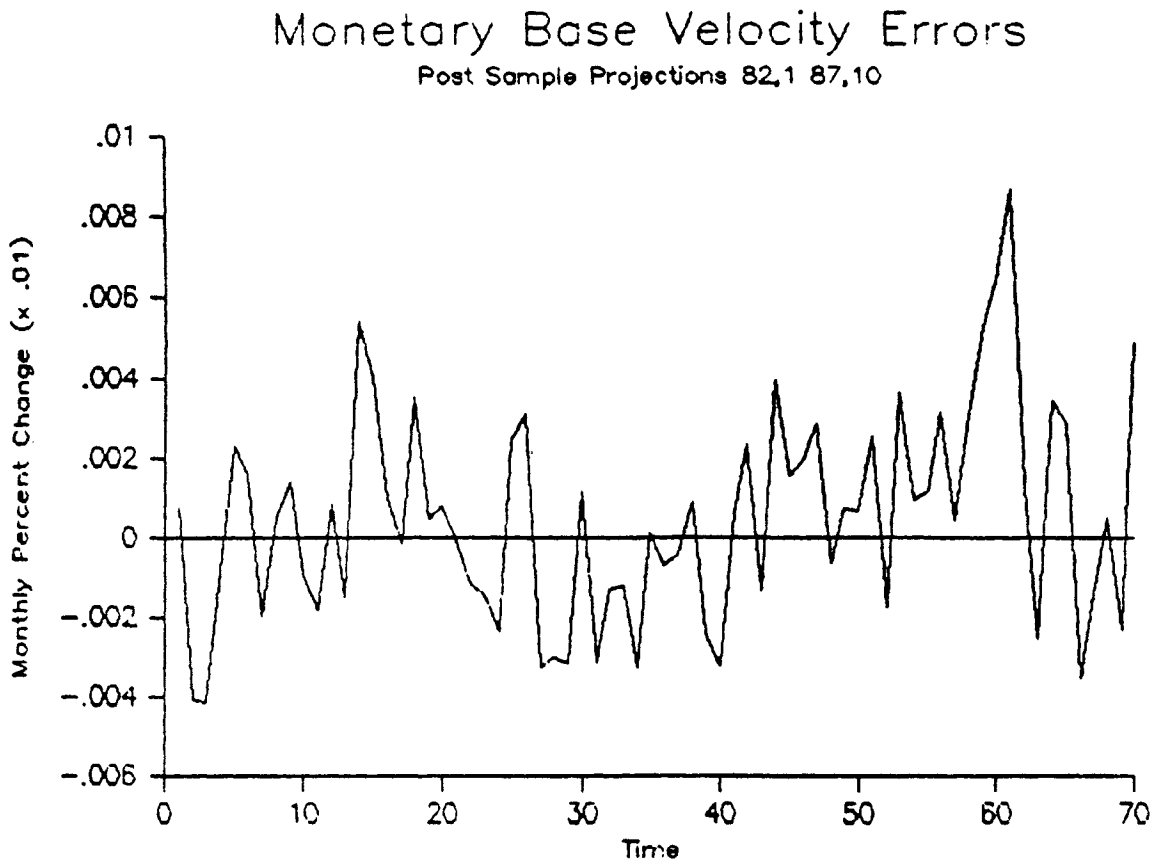
The aggregation suggests that even if a quarterly average specification is approximated by ignoring the intra-quarter variation in interest rates and real income and by using the quarterly inflation forecast error based on information through the previous quarter, then the uniform distributed lag coefficients of the monthly specification do not translate directly into uniform distributed lags in the quarterly average data.

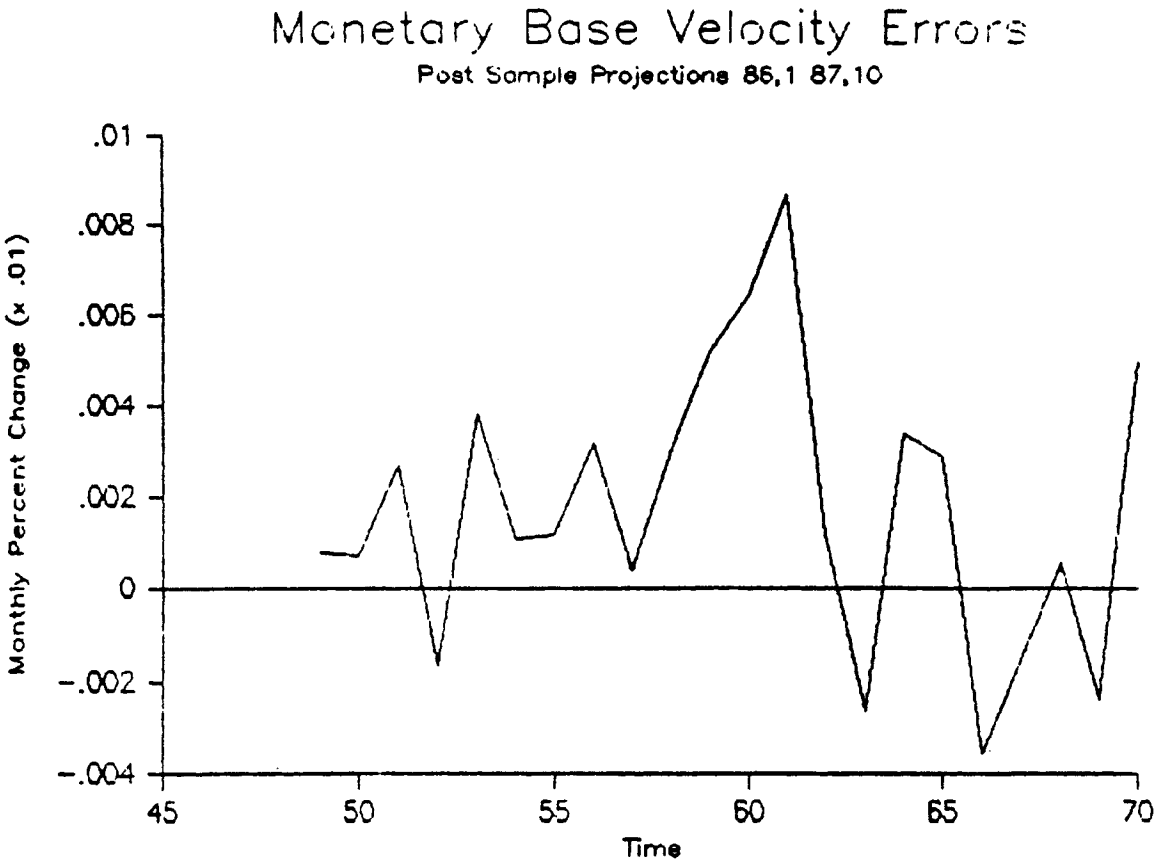


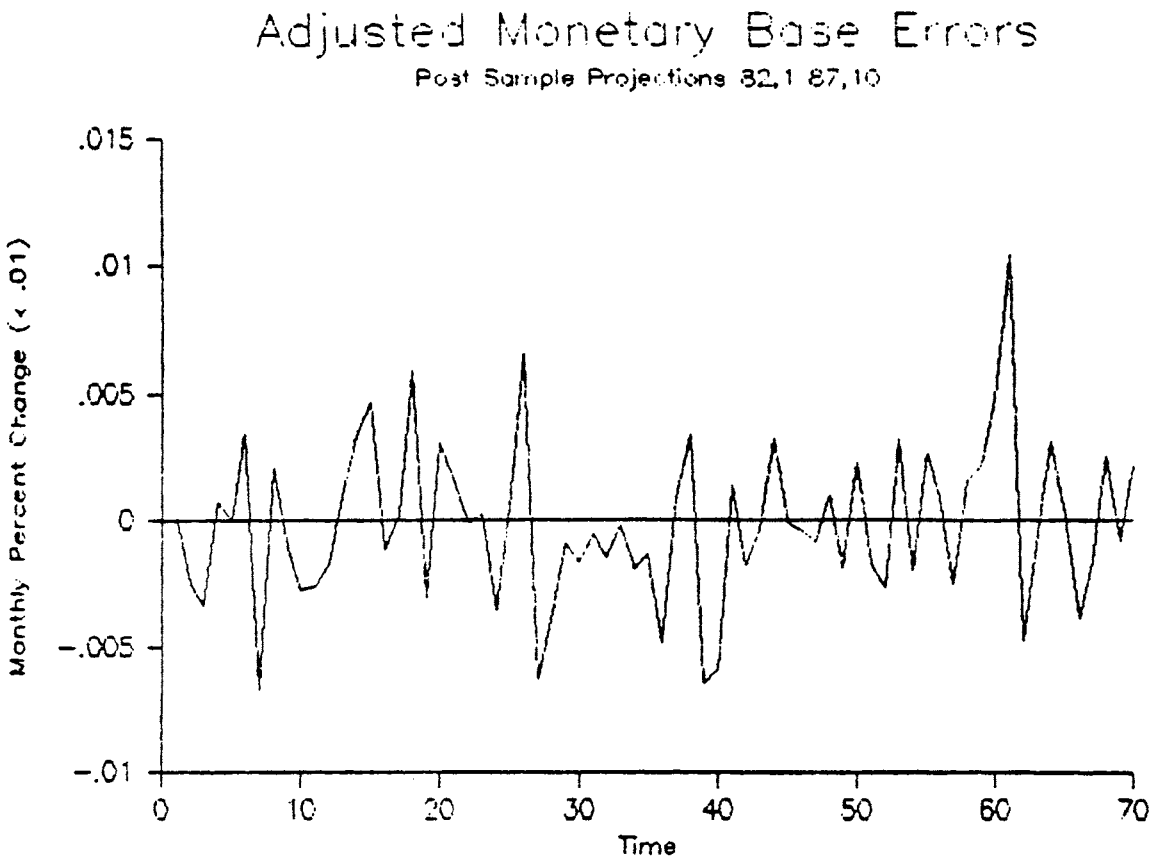












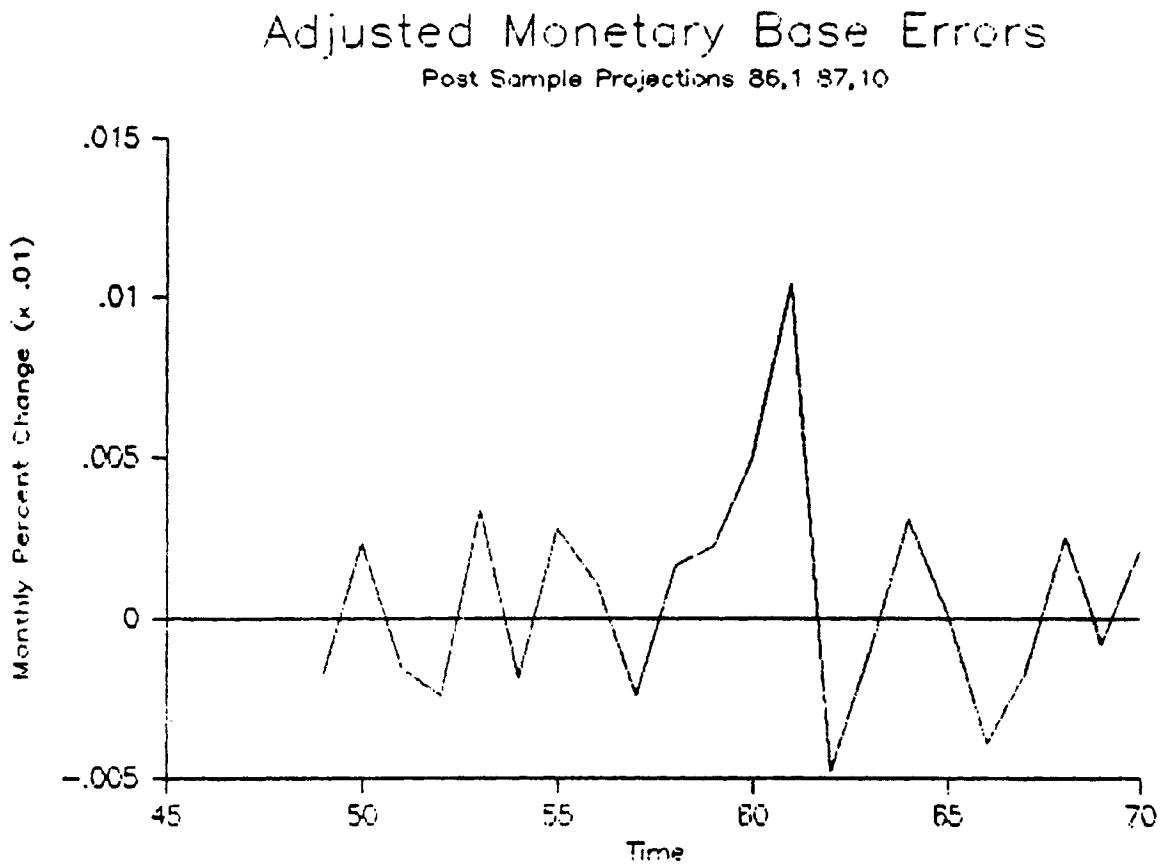


Table III.1
Autocorrelations of Money Multipliers

A. Monetary Base

Sample	59,2 - 85,12	59,2 - 74,12	75,1 -85,12	59,2 - 87,7
1	.04	-.11	.27	.08
2	.05	.02	.08	.09
3	.04	.03	.02	.08
4	-.02	-.10	.08	.04
5	.00	-.03	.07	.05
6	.04	-.01	.12	.08
7	-.01	-.08	.11	.04
8	.04	-.02	.11	.08
9	.13	.20	.04	.15
10	-.01	-.04	-.01	.03
11	.09	.09	.03	.11
12	-.06	-.17	.06	.00

B. Adjusted Monetary Base

Sample	59,2 - 85,12	59,2 - 74,12	75,1 -85,12	59,2 - 87,7
1	-.01	-.08	.06	.03
2	-.02	-.10	.05	.01
3	.02	.03	.00	.05
4	-.12	-.01	-.26	-.07
5	-.01	.03	-.06	.02
6	.02	-.02	.06	.04
7	-.08	-.09	-.07	-.05
8	.07	.05	.10	.09
9	.05	.14	-.06	.08
10	.02	.06	-.07	.02
11	.01	.04	.00	.04
12	.09	.02	.13	.12

Table III.2
Monetary Base -- Monthly
(Y = Personal Income)
Unrestricted Estimates

Sample	59,2 - 85,12	59,2 - 74,12	75,1 -85,12	59,2 - 87,7
Constant	-.0015 (.0003)	-.0013 (.0004)	-.0015 (.0005)	-.0015 (.0003)
RTB	.0003 (.0003)	-.0003 (.0006)	.0007 (.0004)	.0003 (.0003)
RTB_{-1}	-.0010 (.0003)	-.0002 (.0006)	-.0013 (.0004)	-.0010 (.0003)
RTB_{-2}	-.0005 (.0003)	-.0002 (.0006)	-.0003 (.0004)	-.0005 (.0003)
RTB_{-3}	-.0005 (.0003)	-.0008 (.0006)	-.0004 (.0004)	-.0005 (.0003)
RTB_{-4}	-.0004 (.0003)	-.0003 (.0006)	-.0002 (.0004)	-.0004 (.0003)
RTB_{-5}	-.0006 (.0003)	-.0005 (.0006)	-.0004 (.0004)	-.0006 (.0003)
RTB_{-6}	-.0007 (.0003)	-.0015 (.0006)	-.0004 (.0004)	-.0007 (.0003)
RTB_{-7}	-.0004 (.0003)	-.0010 (.0006)	-.0000 (.0004)	-.0004 (.0003)
RTB_{-8}	-.0003 (.0003)	-.0001 (.0006)	-.0002 (.0004)	-.0003 (.0003)
Y/P	-.8731 (.0305)	-.8973 (.0386)	-.8602 (.0562)	-.8772 (.0306)
Y/P_{-1}	.1170 (.0300)	.1583 (.0370)	.0015 (.0574)	.1163 (.0296)
Y/P_{-2}	.0791 (.0294)	.0590 (.0368)	.0839 (.0550)	.0817 (.0292)
Y/P_{-3}	.0985 (.0296)	.0915 (.0366)	.0986 (.0556)	.1002 (.0292)
Y/P_{-4}	.0683 (.0293)	.0601 (.0364)	.0721 (.0548)	.0629 (.0291)
Y/P_{-5}	.0827 (.0295)	.0715 (.0371)	.0879 (.0560)	.0877 (.0293)
Y/P_{-6}	.0635 (.0293)	.0487 (.0364)	.0339 (.0567)	.0616 (.0292)
Y/P_{-7}	.0346 (.0289)	.0484 (.0356)	-.0246 (.0548)	.0357 (.0289)
Y/P_{-8}	.1056 (.0296)	.1124 (.0361)	.1019 (.0570)	.1162 (.0293)
DINFU	-.8067 (.0636)	-.8384 (.0799)	-.6835 (.1196)	-.7791 (.0625)
D82	.0022 (.0004)	--	.0030 (.0005)	.0028 (.0004)
$\bar{R}^2$	.76	.76	.74	.75
se	.0024	.0024	.0024	.0024
d-w	1.73	1.70	1.80	1.68
F	1.62(18,293)	1.13(17,171)	1.56(18,102)	1.91(18,312)

Table III.3
Adjusted Monetary Base -- Monthly
(Y = Personal Income)
Unrestricted Estimates

Sample	53,1 - 85,12	53,2 - 74,12	75,1 - 85,12	59,1 - 85,12	53,1 -87,7
Constant	-.0011(.0003)	-.0010(.0004)	-.0015(.0006)	-.0012(.0004)	-.0011(.0003)
RTB	.0001(.0004)	-.0013(.0008)	.0012(.0006)	.0001(.0004)	-.0001(.0004)
RTB_{-1}	-.0013(.0004)	-.0004(.0007)	-.0019(.0006)	-.0011(.0004)	-.0012(.0004)
RTB_{-2}	-.0006(.0004)	-.0012(.0008)	.0001(.0005)	-.0006(.0004)	-.0006(.0004)
RTB_{-3}	-.0007(.0004)	-.0012(.0007)	-.0007(.0005)	-.0007(.0004)	-.0008(.0004)
RTB_{-4}	-.0006(.0004)	-.0005(.0008)	-.0002(.0005)	-.0006(.0004)	-.0007(.0004)
RTB_{-5}	-.0010(.0004)	-.0003(.0008)	-.0011(.0005)	-.0011(.0004)	-.0010(.0004)
RTB_{-6}	-.0005(.0004)	-.0018(.0009)	.0001(.0005)	-.0005(.0004)	-.0006(.0004)
RTB_{-7}	-.0007(.0004)	-.0007(.0008)	-.0006(.0005)	-.0008(.0004)	-.0007(.0004)
RTB_{-8}	-.0004(.0004)	-.0005(.0008)	-.0005(.0005)	-.0005(.0004)	-.0004(.0004)
Y/P	-.8983(.0382)	-.9093(.0454)	-.9153(.0768)	-.8725(.0279)	-.9035(.0377)
Y/P_{-1}	.0970(.0377)	.1049(.0443)	.0911(.0783)	.1170(.0371)	.0989(.0368)
Y/P_{-2}	.0688(.0375)	.0393(.0444)	.0922(.0750)	.0642(.0366)	.0716(.0366)
Y/P_{-3}	.1108(.0375)	.1349(.0759)	.0517(.0759)	.0671(.0367)	.1083(.0365)
Y/P_{-4}	.0487(.0373)	.0458(.0442)	.1012(.0747)	.0754(.0365)	.0480(.0365)
Y/P_{-5}	.0547(.0363)	.0603(.0427)	.0096(.0764)	.0771(.0365)	.0608(.0356)
Y/P_{-6}	.0797(.0363)	.0684(.0424)	.1044(.0760)	.1084(.0362)	.0743(.0356)
Y/P_{-7}	.0263(.0360)	.0506(.0419)	-.0491(.0747)	.0324(.0360)	.0248(.0354)
Y/P_{-8}	.0673(.0364)	.0451(.0420)	.1752(.0778)	.0949(.0369)	.0786(.0356)
DINFU	-.8447(.0779)	-.8388(.0922)	-.8190(.1631)	-.8216(.0720)	-.8183(.0757)
DB2	.0018(.0005)	--	.0025(.0007)	.0016(.0005)	.0021(.0005)
$\bar{R}^2$	.62	.63	.61	.67	.63
se	.0033	.0033	.0033	.0030	.0033
d-w	2.15	1.96	2.40	2.27	2.14
F	1.29(18,366)	.98(17,244)	1.28(18,102)	1.04(18,294)	1.29(18,385)

Table III.4
Monetary Base -- Monthly
(Y = Personal Income)
Restricted Estimates

Sample	59,2 - 85,12	59,2 - 74,12	75,1 -85,12	59,2 - 87,7
Constant	-.0021 (.0003)	-.0021 (.0002)	-.0024 (.0003)	-.0021 (.0002)
RTB	-.0006 (.0001)	-.0007 (.0002)	-.0005 (.0001)	-.0006 (.0001)
Y/P	-.8310 (.0288)	-.8518 (.0354)	-.7878 (.0507)	-.8337 (.0291)
D82	.0021	.0021	.0024	.0021
$\bar{R}^2$	.75	.76	.71	.74
se	.0024	.0024	.0025	.0025
d-w	1.73	1.67	1.74	1.66

Table III.5
Adjusted Monetary Base -- Monthly
(Y = Personal Income)
Restricted Estimates

Sample	53,1 - 85,12	53,2 - 74,12	75,1 - 85,12	59,1 - 85,12	53,1 -87,7
Constant	-.0021(.0002)	-.0021(.0002)	-.0022(.0004)	-.0019(.0002)	-.0021(.0002)
RTB	-.0008(.0001)	-.0012(.0002)	-.0006(.0001)	-.0007(.0001)	-.0009(.0001)
Y/P	-.8524(.0358)	-.8713(.0423)	-.8115(.0678)	-.8336(.0349)	-.8529(.0389)
D82	.0021		.0022	.0019	.0021
$\bar{R}^2$	.62	.63	.60	.67	.62
se	.0033	.0033	.0034	.0030	.0034
d-w	2.09	1.92	2.33	2.22	2.09

Table III.6
Projection Error Statistics
(Y= Personal Income)

	Root-Mean-Squared Error	U_M	U_S	U_C
Monetary Base (86,1-87,10)	.0030	.43	.16	.41
Monetary Base (82,1-87,10)	.0027	.04	.10	.86
Adjusted Monetary Base (86,1-87,10)	.0034	.03	.25	.72
Adjusted Monetary Base (82,1 87,10)	.0031	.00	.16	.84

Table III.7
Monetary Base - Quarterly Data
Restricted Estimates

	Personal Income		GNP	
Sample	59,2-81,4	59,2-85,4	59,2-81,4	59,2-85,4
Constant	-.0064(.0004)	-.0063(.0004)	-.0058(.0006)	-.0056(.0006)
RTB	-.0012(.0002)	-.0013(.0002)	-.0011(.0003)	-.0015(.0002)
RTB_{-1}	-.0018(.0004)	-.0019(.0003)	-.0017(.0005)	-.0023(.0004)
RTB_{-2}	-.0018(.0004)	-.0019(.0003)	-.0017(.0005)	-.0023(.0004)
RTB_{-3}	-.0006(.0001)	-.0007(.0001)	-.0005(.0001)	-.0008(.0001)
lnY/P	-.6134(.0582)	-.5988(.0510)	-.6771(.0526)	-.6757(.0471)
lnY/P_{-1}	.2629(.0249)	.2566(.0218)	.2902(.0225)	.2896(.0202)
lnY/P_{-2}	.2629(.0249)	.2566(.0218)	.2902(.0225)	.2896(.0202)
lnY/P_{-3}	.0876(.0081)	.0855(.0073)	.0967(.0075)	.0965(.0067)
DINFU	-.6134(.0582)	-.5988(.0510)	-.6771(.0526)	-.6757(.0471)
DB2	--	-.0063(.0004)	--	-.0056(.0006)
$\bar{R}^2$	.60	.71	.66	.72
se	.0040	.0039	.0053	.0051
d-w	.97	1.04	.79	.82

Table III.8
Adjusted Monetary Base - Quarterly Data
Restricted Estimates

	Personal Income		GNP	
Sample	53,1-81,4	53,1-85,4	53,1-81,4	53,1-85,4
Constant	-.0062(.0005)	-.0052(.0005)	-.0057(.0006)	-.0057(.0006)
RTB	-.0021(.0003)	-.0019(.0002)	-.0021(.0004)	-.0022(.0004)
RTB_{-1}	-.0031(.0004)	-.0029(.0003)	-.0032(.0005)	-.0033(.0004)
RTB_{-2}	-.0031(.0004)	-.0029(.0003)	-.0032(.0005)	-.0033(.0004)
RTB_{-3}	-.0010(.0001)	-.0010(.0001)	-.0011(.0002)	-.0011(.0002)
lnY/P	-.6324(.0600)	-.6137(.0541)	-.6743(.0512)	-.6696(.0472)
lnY/P_{-1}	.2710(.0257)	.2630(.0232)	.2890(.0220)	.2870(.0202)
lnY/P_{-2}	.2710(.0257)	.2630(.0232)	.2890(.0220)	.2870(.0202)
lnY/P_{-3}	.0903(.0086)	.0877(.0077)	.0963(.0073)	.0957(.0067)
DINFU	-.6324(.0600)	-.6137(.0541)	-.6743(.0512)	-.6696(.0472)
DB2	--	-.0052(.0005)	--	-.0057(.0006)
$\bar{R}^2$	.57	.66	.62	.66
se	.0050	.0049	.0063	.0060
d-w	1.13	1.17	.88	.93

Chapter 6

U.S. International Capital Flows in the 1980s

William Poole[1]
Brown University

The United States current account deficit — and especially the trade deficit — has received considerable attention in recent years. However, much of the political debate seems oblivious to the fact that the current and capital accounts in the balance of payments are necessarily mirror images of each other. Moveover, when the capital account does enter the debate there is an unfortunate tendency for people to argue that the trade deficit has *caused* the capital inflow.

It is even more misleading to speak of the capital account as "financing" the current account deficit. In recent years most of the capital inflow has been private. The motivation of individual investors is certainly not to finance the current account deficit; they are simply financing their own individual investments. In short, the issue of causation is complex and should be discussed with care.

Another defect of much of the discussion of the U.S. balance of payments is the implicit or explicit argument that what has happened is due entirely to changes of economic conditions within the United States. Trade and capital flows are simultaneously determined and they depend on relative prices and relative returns across the various countries of the world.

[1]Acknowledgement: Chart data from Data Resources, Inc.

6.1. Overview of the Capital Account

Figure 1 provides an overall view of the U.S. capital account using data from the first quarter of 1975 through the third quarter of last year (latest data available). The large increase in the net capital inflow after 1983 shows up clearly, as does the rise in the official capital inflow in 1986–87. In this figure, and all of my discussion below, the capital account surplus is defined as being equal to the reported current account deficit; I will not get into the interesting, but frustrating, subject of errors and omissions. Thus, all errors and omissions are assumed to be unidentified capital flows rather than unidentified net exports.

In 1986 the net official capital inflow was 23.5 percent of the total capital inflow, and 21.9 percent over the first three quarters of 1987. The official inflow was motivated, of course, by the desire of foreign governments to limit the speed and extent of the depreciation of the dollar after the Plaza agreement of September 1985.

Although the net official capital inflow was large in 1986–87, the size of the inflow was not very different than in 1977–78. The 1986 inflow was $33.3 billion and the inflow over the first three quarters of 1987 was $46.6 billion at an annual rate. These figures may be compared with inflows of $35.0 billion and $31.9 billion in 1977 and 1978, respectively. However, in 1977–78 private capital was flowing out of the United States; the official inflow was larger than the total capital inflow, as can be seen in figure 1. In contrast, in 1986–87 private inflows were more than three times as large as offical inflows.

Figure 2 provides more detail on official capital. The net official capital inflow is the same as shown in figure 1. The net flow is divided into its U.S. and foreign components. The U.S. component is relatively small. Despite the talk of a changed U.S. policy on intervention in the foreign exchange market it is clear that the U.S. authorities did not commit very much in the way of foreign exchange reserves to market in 1987. Interestingly, figure 2 also shows some examples where the U.S. and foreign authorities were working at cross purposes. In 1981, for example, U.S. official capital was moving out of the country while foreign official capital was moving in.

Figure 3 tells an interesting story about direct investment flows. On a net basis, from 1975 to 1980 direct flows were consistently out of the United States, from 1981 through 1984 consistently into the United States, and

from 1985 to 1987 quite volatile quarter-by-quarter. Note that fluctuations in the net flow have been driven to a considerable extent by fluctuations in the U.S. direct capital outflow. From mid-1981 to early 1985, U.S. direct capital outflow abroad was relatively small and in 1982 even involved a capital inflow — the *stock* of U.S. direct capital abroad fell in that year. The 1981–85 period spans the enactment of the Economic Tax Recovery Act and the beginning of official proposals that culminated in the Tax Reform Act of 1986. This period also corresponds almost exactly to the period when the dollar was appreciating.

6.2. Relative Economic Conditions in the United States and Abroad

Why has such an enormous amount of private capital come to the United States in the 1980s? The fundamental motivation of private investors is that they seek the highest returns after allowing for risk. Returns on physical and financial capital are closely related by virtue of the willingness of investors to channel new investment in one direction or the other. I want to concentrate on returns on physical capital because the financial market effects of the government budget deficit have been so widely discussed.

It is difficult to measure the relevant returns on new investment in physical capital because of inherent measurement problems for realized returns and because the *prospective* returns in the heads of individual investors and entrepreneurs are inherently unobservable. But we can measure some things that are closely related to the unobservable returns.

Economies with high returns on capital typically grow rapidly. Thus, economic growth is itself a proxy for the rate of return on capital. Figure 4 provides some evidence on long-term trends. The figure uses OECD data through 1986, the latest year available in the OECD database. The growth rate for Japan is much lower after 1973 than before. The growth rate for OECD Europe has also declined, and has been very low since 1980. The U.S. growth rate has been a little lower in the 1980s than earlier, but not by much.

The behavior of investment itself also provides evidence on investment returns. Figure 5 shows gross domestic investment as a percent of GDP for Japan, Europe and the United States for 1960–86 (OECD data). The

figure also shows saving, which I will discuss in a moment, as a percent of GDP for the same regions. The gross investment share of GDP has declined markedly for Japan and Europe, but has held up well in the United States. I conclude that evidence on economic growth rates and investment shares of GDP supports the view that the United States was a *relatively* attractive place to invest in the 1980s. This view is reinforced by what has happened to economic growth and investment opportunities in many of the LDCs.

By the national accounts identity, the U.S. capital import is equal to the difference between U.S. domestic investment and U.S. saving. That difference shows up clearly in figure 5. At the same time, however, the capital exports from Japan and Europe are equal to the differences between their respective saving and investment shares. Investment shares in Japan and Europe have been declining since 1970; after 1982 modest increases in their saving shares went into foreign investment, mostly to the United States. Taking as given U.S. investment incentives and inflation experience in the 1980s, it seems likely that most of the capital exports from Japan and Europe would have come to the United States even if the U.S. federal budget deficit had been much lower than it was. That means, of course, that the U.S. current account deficit would not have been much different and the difference between U.S. domestic investment and private saving would have been smaller by the amount that federal government saving was larger (the budget deficit smaller).

To argue otherwise, we would have to assume that the capital flow out of Japan and Europe would have gone to the LDCs or that domestic investment shares would have been considerably higher in Japan and Europe. The LDC argument can be dismissed out of hand; the investment share argument needs further discussion.

For Japan, economic growth and the investment share were extraordinarily high in the 1960s. Both have declined as the Japanese economy has matured. Japan's growth is now in a familiar range but its saving ratio is still very high when compared to other countries. Japanese saving is difficult to understand, but we should be cautious in asserting that the Japanese save "too much." Two rate-of-return conditions are relevant. First, Japanese saving invested in the United States is in the interest of the United States if the return we pay to the Japanese is less than the return we earn on the invested capital, and there is no evidence that this condition is not met. Second, Japanese investment in the U.S. is in the interest of

Japan if the rate of return Japan receives in the United States is greater than the rate of return available in Japan. Given the declines in Japan's growth rate and investment share, and evidence that the rate of return in the Japanese equity and fixed income markets is extremely low, it is highly likely that both these rate-of-return conditions were met from 1981 to 1985, and perhaps later.

For Europe, it seems clear that the declining investment share is a supply-side problem; incentives to produce are too low because of high marginal tax rates and labor market rigidities. Europe also provides substantial subsidies to weak and inefficient enterprises. U.S. policies have, if anything, raised European growth in the 1980s by providing a large market for European exports. Thus, the two rate-of-return conditions discussed for Japan also apply to Europe.

Much has been made of the low saving rate in the United States, and justifiably so. Many have argued that a lower federal budget deficit would reduce the size of U.S. capital imports. However, that conclusion depends on how the budget deficit is reduced. Even if the budget deficit were reduced in a way that left private saving unaffected, there is still the matter of how U.S. domestic investment would react. I will discuss this issue shortly.

6.3. More on U.S. Domestic Investment

Figure 1 provides a long-term perspective on U.S. domestic investment in nominal dollars as a share of nominal GDP. Now I want to examine U.S. domestic investment in somewhat more detail.

Figure 6 shows U.S. quarterly domestic investment in 1982 dollars from 1980 through 1987. Non-residential fixed investment rose substantially in 1983–84, but reached a peak in 1985 and then fell somewhat. The tax reform discussion, which began in earnest with the Treasury I tax proposal in November 1984, killed the investment boom. Further evidence for this view is that U.S. direct investment abroad rose substantially at the same time (see figure 3).

Figure 7 provides information to discuss the important distinction between gross and net investment, but before getting into that topic, I want to look at investment during the 1981–82 recession. Figure 7 shows that gross investment as a share of GNP did not decline much until 1983 when GNP rose sharply. During the 1981–82 recession gross investment fell, but

only by about the same percentage as did GNP. In contrast, from figure 7, we can see that the gross investment share fell substantially during the other two deep recessions after World War II — 1957–58 and 1973–75. The behavior of investment during the 1981–82 recession provides further evidence that the investment incentives resulting from ERTA in 1981 and lower inflation were very substantial.

Those who argue that investment has been low in the 1980s focus on net investment, while those who argue that investment has been high focus on gross investment. Figure 7 shows that there has been an unusual divergence between gross and net investment in the 1980s. The reason, of course, is that the mix of investment has changed toward equipment and away from structures. However, the accuracy of the estimate for the capital consumption allowance in the national accounts is an important issue here. My guess, and it is nothing more than that, is that the CCA is too high in the 1980s. An investigation of this issue is on my future work agenda.

6.4. Policy Issues

It is widely recognized that restriction of trade imports is likely to lead to retaliation abroad that will also reduce U.S. exports. The consequence of reductions of both imports and exports would be to leave the trade balance much less affected than protectionist arguments lead many to expect. But the effect of U.S. protectionism will depend as much on what happens to capital flows as on what happends to the trade accounts. If capital continues to pour into the United States the current account must continue to be in deficit.

U.S. protection may have actually increased capital imports in some areas. It seems likely that Japanese auto firms have established production facilities in the United States in part because of the restrictions on U.S. imports of Japanese cars. In general, though, trade protection will simply change the composition of the current account while leaving the size of the current account deficit unaffected.

Direct controls on capital imports are less likely than trade restrictions, but if capital restrictions were put in place the outcome is very uncertain. Countries ordinarily impose capital controls to keep capital from flowing out; it is rare that they restrict capital flowing in. Given the earnings in U.S. financial centers from services provided to the international capital market

it is unlikely that the United States would impose direct controls or taxes on financial capital imports. There is some chance that certain restrictions on direct ownership and control might be imposed but such restrictions are unlikely to be sufficiently burdensome to have any noticeable effect on the U.S. capital account.

What this means is that capital will continue to flow to the United States as long as the prospective rate of return on U.S. investments is attractive relative to the rate of return abroad. Although it seems unlikely that Europe and Japan will begin to grow so rapidly within the next year or two that they will cease exporting capital, it is clear that the relative attractiveness of U.S. investment has been declining for several years now.

Depreciation of the dollar reflects the reduced attraction of the United States for the world's capital. Much of last year's capital inflow must have been speculative — investors moved funds here on the expectation that dollar depreciation would give way to dollar stability or even some appreciation. This capital flow will decline as the U.S. current account responds to the lower dollar.

Assuming that the U.S. economy is close enough to full employment, that higher net exports cannot come from substantial increases in total real GNP, the key issue now is whether rising net exports will come at the expense of domestic investment or at the expense of domestic consumption (including government). If fiscal policy does not reduce government consumption, then rising net exports will reduce either private consumption or domestic investment.

Without a change in fiscal policy, the rise in net exports is more likely to depress domestic investment than private consumption. If the economy remains at full employment, the interest rate is the only variable free to move to change the composition of aggregate demand. Higher interest rates will tend to reduce residential and non-residential investment and consumer durables.

If the economy starts to press beyond full employment, then pressures on existing capacity will keep investment strong for a time while rising interest rates and inflation hold down residential investment and consumer durables. However, rising inflation will bring a monetary policy response at some point and the resulting recession will reduce both consumption and investment.

By far, the most attractive fiscal policy option for the United States

is to increase the U.S. saving rate while not simultaneously depressing the U.S. investment rate. Tax increases on business are certainly not the way to go; with higher business taxes the federal budget deficit might fall, which would increase national saving, other things equal, but business saving and business investment would also fall. In fact, tax increases on business might sufficiently reduce the rate of return on U.S.investment to cause a substantial change in international capital flows. The result would be a *very* uncomfortable period of a sharply declining dollar accompanied by simultaneous inflationary and recessionary pressures.

The only sure-fire way to raise national saving is to reduce federal expenditures and to direct tax increases, if any, entirely toward consumers. However, success in altering fiscal policy to reduce private and public consumption might well lead to increased rather than decreased capital imports and increased U.S. investment. The reason is that evidence that the United States could solve its fiscal problem without loading taxes on business would make U.S. investment especially attractive in an international context.

We ought to welcome rather than fear such a result. No nation can grow by making capital formation unattractive.

FIGURE 1

U.S. BALANCE OF PAYMENTS, CAPITAL INFLOW

Billions of Dollars per Quarter

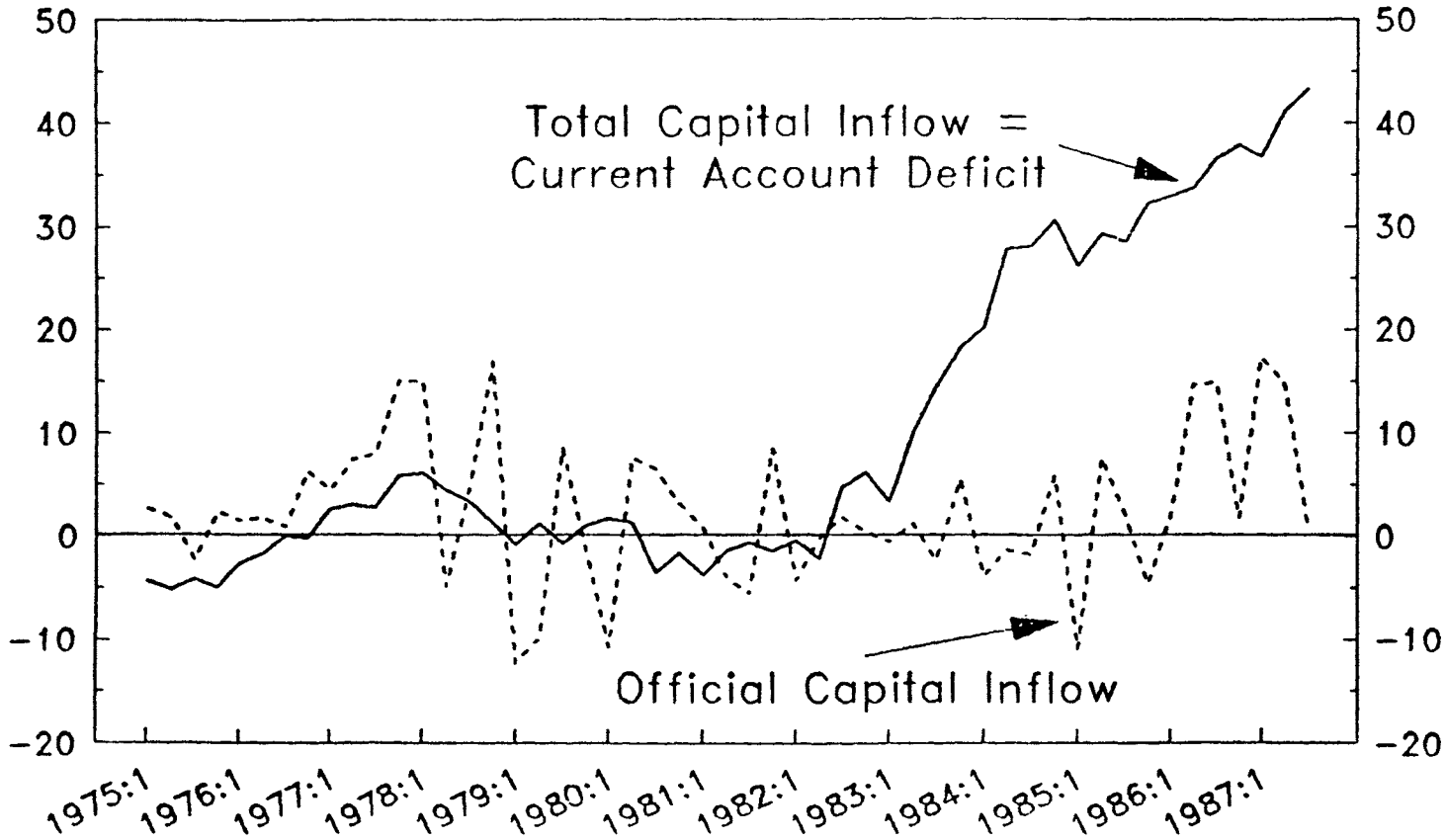


FIGURE 2

U.S. BALANCE OF PAYMENTS, OFFICIAL CAPITAL

Billions of Dollars per Quarter

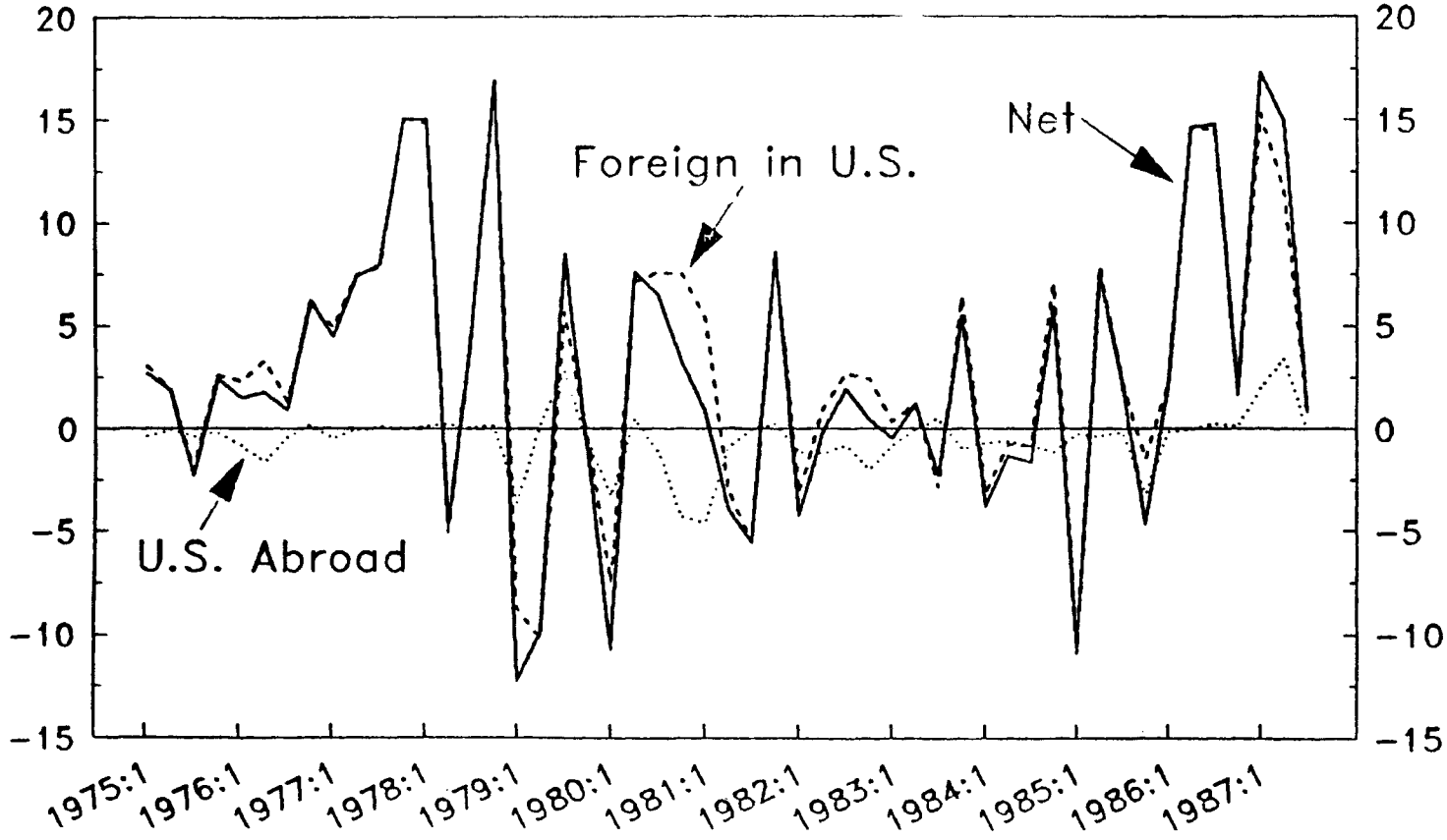


FIGURE 3

U.S. BALANCE OF PAYMENTS, DIRECT INVESTMENT

Billions of Dollars per Quarter

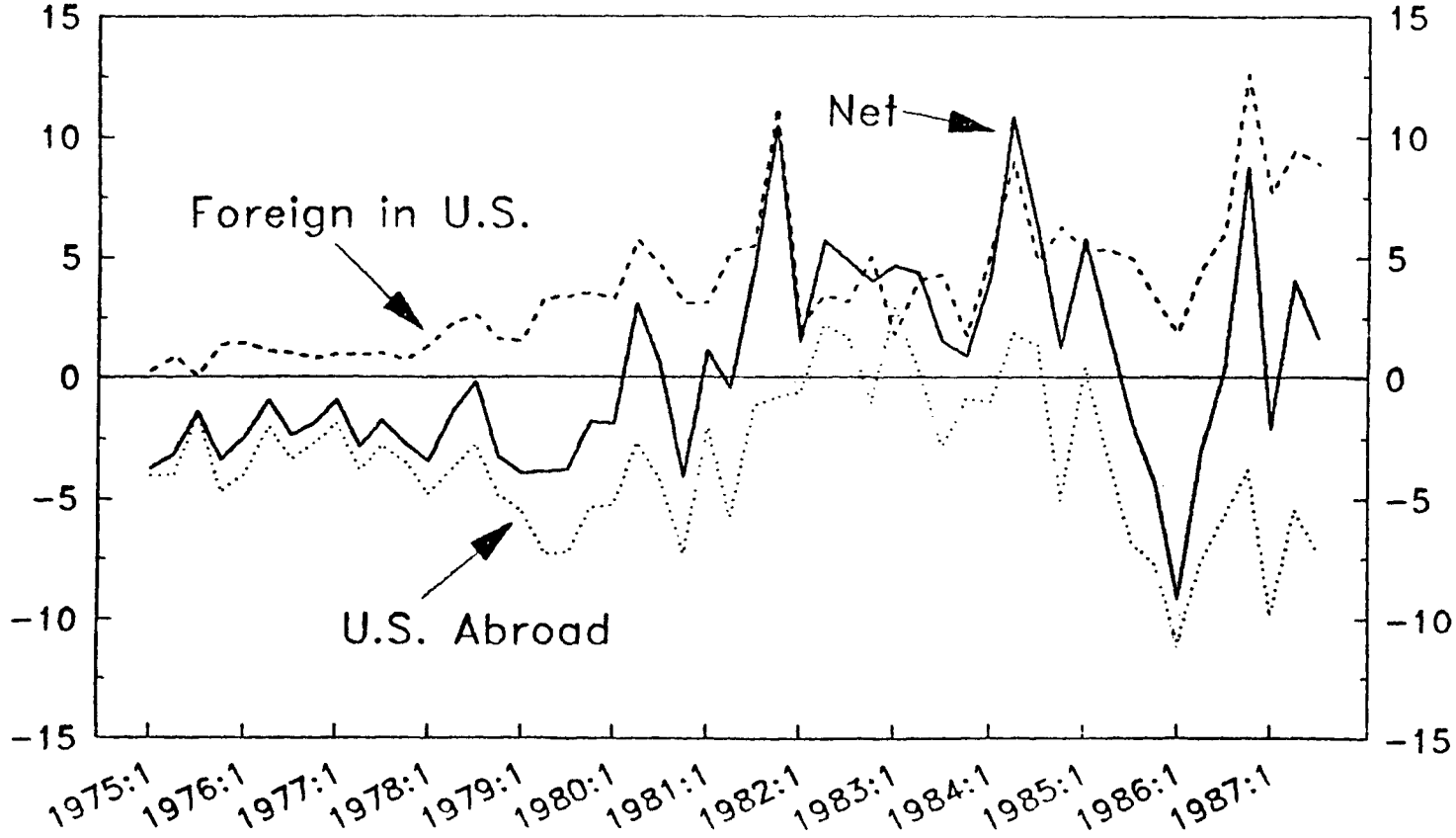


FIGURE 4

GROWTH RATES, REAL GDP

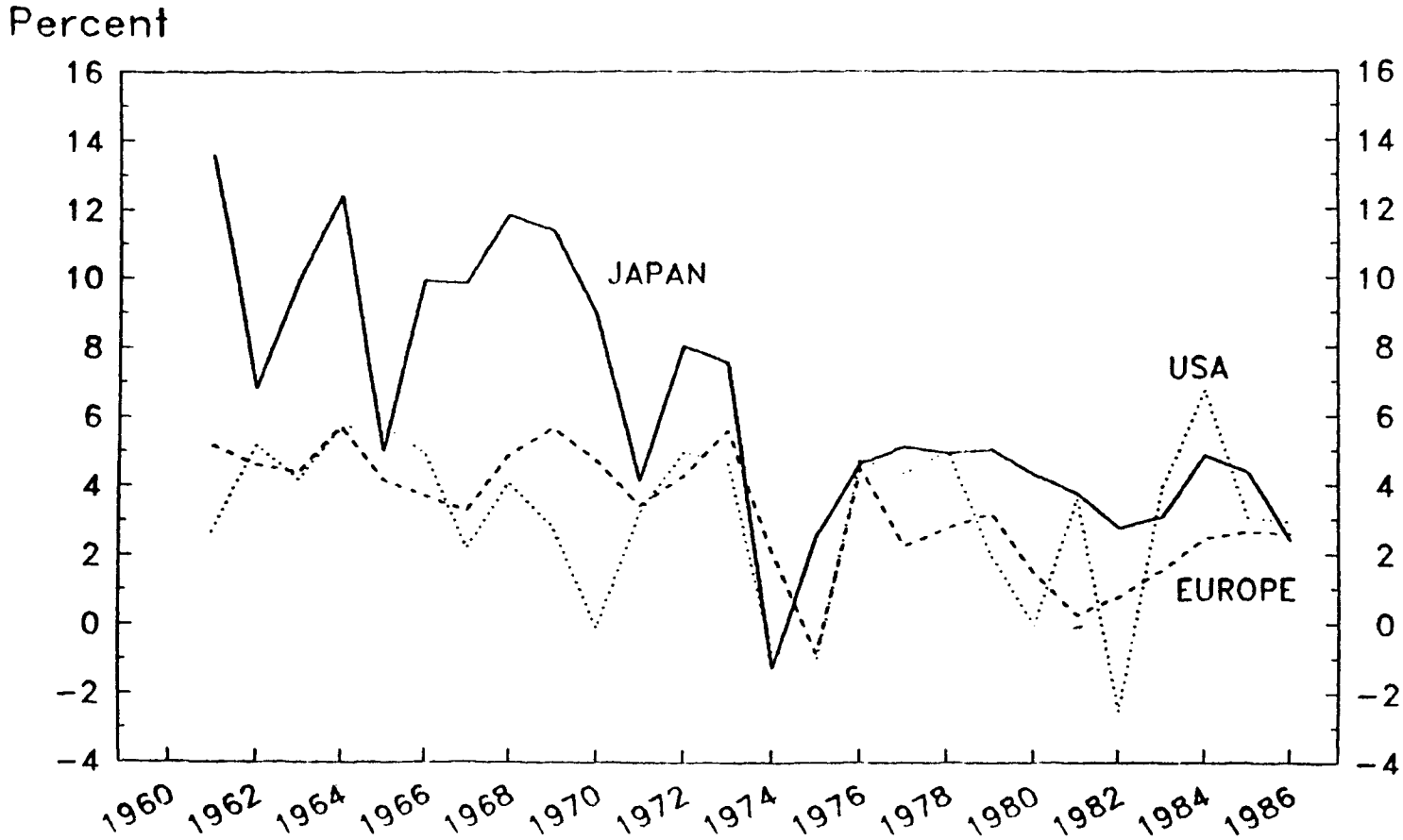


FIGURE 5

SAVING AND GROSS DOMESTIC INVESTMENT

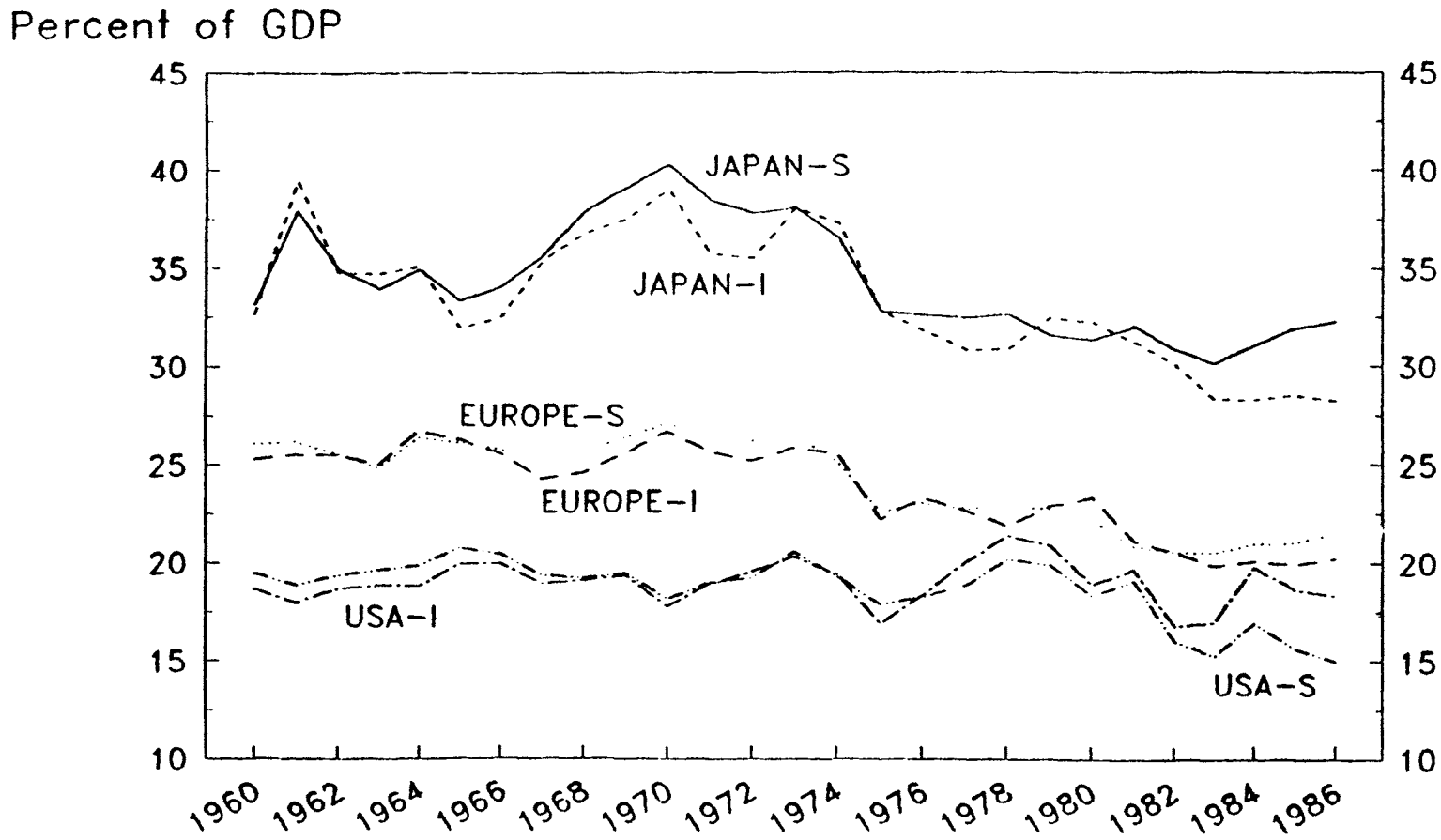


FIGURE 6
U.S. GROSS PRIVATE DOMESTIC INVESTMENT

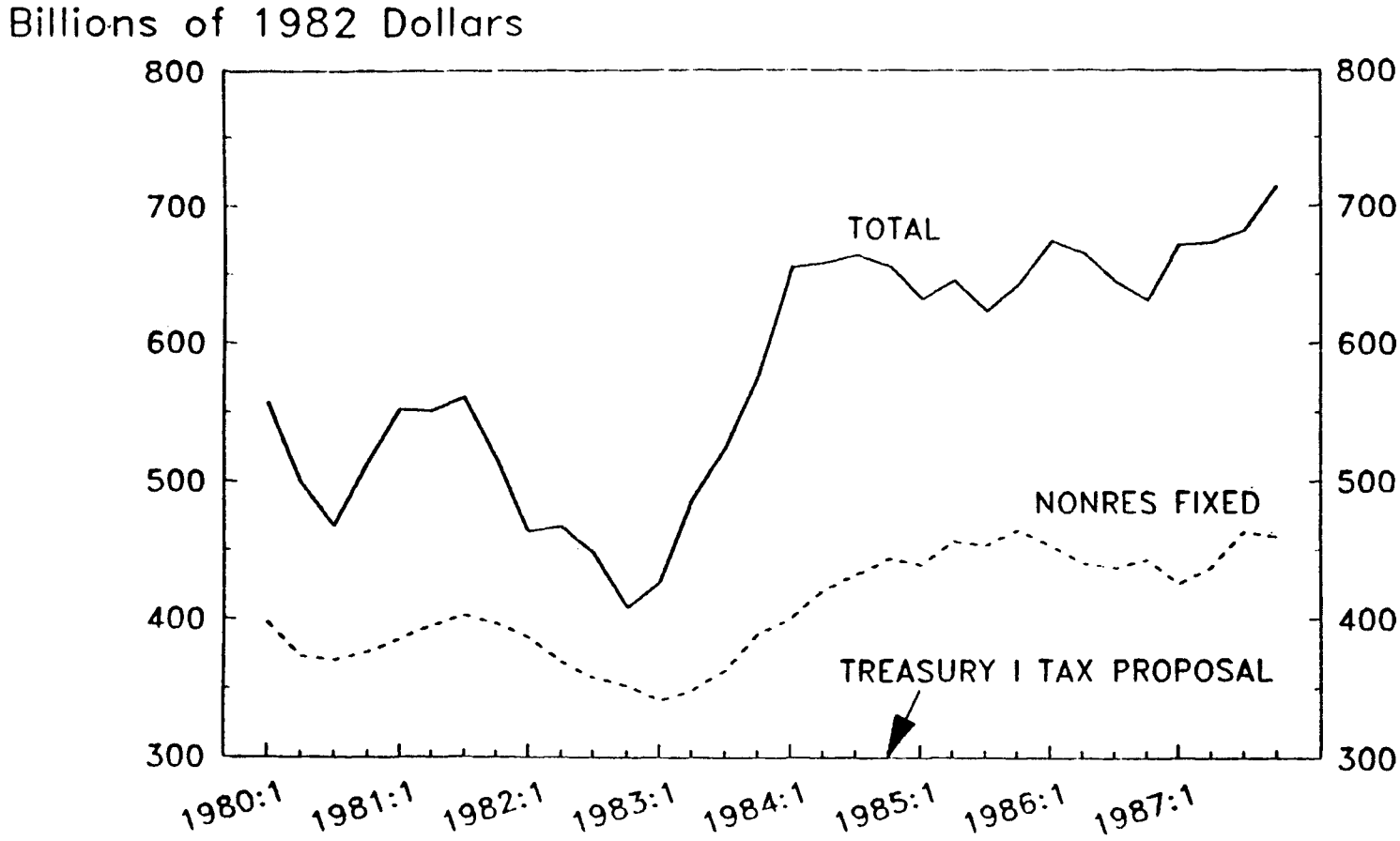


FIGURE 7

U.S. NONRESIDENTIAL FIXED INVESTMENT, 1982 DOLLARS