

**SHADOW OPEN MARKET COMMITTEE**

Policy Statement and  
Position Papers

September 13-14, 1987

PPS 87-02



**CENTER FOR  
RESEARCH IN  
GOVERNMENT  
POLICY &  
BUSINESS**

Public Policy Working Paper Series

TABLE OF CONTENTS

Table of Contents . . . . . i

Shadow Open Market Committee Members. . . . . ii

Shadow Open Market Committee Policy Statement. . . . . 1

Position Papers. . . . . 9

The Federal Budget Tangle. . . . . 9  
*Mickey D. Levy, Fidelity Bank*

Recent Behavior of M1 Velocity . . . . . 19  
*Robert H. Rasche, Michigan State University*

Economic Outlook . . . . . 25  
*Jerry L. Jordan, First Interstate Bancorp*

Monetary Policy and the Outlook. . . . . 33  
*Jerry L. Jordan, First Interstate Bancorp*

Tables . . . . . 41  
*H. Erich Heinemann, Moseley Securities Corporation*

## SHADOW OPEN MARKET COMMITTEE MEMBERS

The Committee met from 2:00 p.m. to 7:00 p.m. on Sunday, September 13, 1987.

### Members of the SOMC:

PROFESSOR KARL BRUNNER, Director of the Center for Research in Government Policy and Business, 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, Moseley Securities Corporation, 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, Fidelity Bank, 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.

SHADOW OPEN MARKET COMMITTEE  
Policy Statement  
September 14, 1987

*AN OPEN LETTER TO ALAN GREENSPAN*

Dear Mr. Chairman:

Congratulations on your appointment as chairman of the Board of Governors. You have inherited an organization that will soon have its 75th birthday. Organizations, like people, get set in their ways. A new chairman, particularly one who is knowledgeable about economic policy and new to the Federal Reserve, has an opportunity to make some needed changes.

We recommend major changes in three areas: (1) monetary policy, (2) international debt, and (3) financial regulation and reform.

MONETARY POLICY

For the year ending in August 1987, the growth rate of the monetary base was 7.5%, very near the recommendation of the Shadow Open Market Committee. The excessive growth during the two years ending in the fall of 1986 has been followed by relatively slow average growth after January. Real output has continued to grow at or slightly above the long-term average for the U.S. economy. Inflation has risen this year. To limit further increases, we urge that the annual growth rate of the monetary base be reduced to 6% as the next step in a policy of achieving sustained price stability.

We are pleased that the Federal Reserve has reduced the growth rate of the monetary base in 1987 from the high levels of 1986. We urge you to avoid the errors that have produced volatile and

unpredictable changes in monetary growth. Monetary instability is not compatible with economic stability. The faster money growth in the fall and the slower money growth this spring were both a result of a policy to adjust the dollar exchange rate. First, faster money growth produced devaluation of the dollar against other currencies; later slower money growth boosted the value of the dollar or prevented further declines.

This was a mistake. Devaluation achieved by faster money growth and inflation will have little lasting effect on exports, imports and the trade balance. Faster money growth to push the dollar down does not move toward a long-term solution but, instead, produces a short-lived expansion, higher inflation and a lower standard of living.

Trying to maintain the dollar exchange rate in the face of international differences in productivity, economic growth, real after-tax rates of return on investment, saving rates and rates of inflation is no less mistaken. If the exchange rate is held within a narrow range against major currencies, adjustment of prices and production costs to real differences in productivity and saving rates in various countries will occur through other, no less costly, adjustments.

Monetary policy should not be based on short-term objectives. Raising interest rates to stabilize the dollar and improve the trade balance is a mistake. Higher interest rates strengthen the dollar in the short-term mainly by slowing economic expansion and by reducing money growth. Slower growth of output lowers imports. This effect on trade is short-lived.

The problem with U.S. trade and payments is not monetary; it is real. Required adjustments in trade and payments can be achieved by a fall in the real exchange rate, by increasing saving and productivity

or some combination of the two. Monetary policy can do little to force or prevent a permanent decline in the real exchange rate.

Adjustment of the payments and trade balances by a fall in the real exchange rate will raise the U.S. price level. This rise is a one-time increase in level, not a return of inflation. This distinction, often neglected, is important. The price rise following a devaluation will not persist if the Federal Reserve maintains non-inflationary policies.

Intervening to prevent a decline in the external value of the dollar will not avoid an adjustment in the real exchange rate. Allowing exchange rates to adjust in response to market forces is one way to adjust U.S. prices and costs of production relative to foreign prices and costs of production. The main alternative to exchange rate adjustment is to force prices, wages and other costs of production to fall relative to prices and costs abroad. This approach would likely require a severe recession and will prove more costly.

The task you face is a hard one -- to resist the pressures to try to solve problems that you cannot solve and to concentrate on policies that restore stable prices. The latter is something that only you and your colleagues at the Federal Reserve can accomplish. You will only succeed if you avoid the attempt to set interest rates or exchange rates.

The alleged disadvantages of fluctuating exchange rates are widely advertised; the advantages are neglected. Germany and Japan have used fluctuating rates both to achieve price stability and to reduce variability of real growth. They have done this, in part, by adopting and following medium-term strategies for monetary policy.

The United States has taken a different approach to policy and has experienced less stability of prices and output than Germany or Japan. Many in the marketplace refer to the U.S. approach as the "Volcker Standard." A standard of this kind substitutes the decisions of one person or a small group for predictable monetary policies. The way to lower the uncertainty and variability that people face is to adopt a predictable monetary policy.

You have inherited an inflation rate that has been reduced substantially since 1981. However, inflation remains at rates that are high by past standards. We urge you to adopt a policy of reducing the rate of inflation. This is best accomplished by adopting a long-term strategy of consistently lowering the annual growth rate of the monetary base and maintaining the fluctuating exchange rate system.

A 6% growth rate of the monetary base in the next 12 months is a step in a program to achieve price stability. Others urge you in different directions. They talk about testing your opposition to inflation or your commitment to current exchange rates. It is a mistake to be driven by the changing views of day traders and speculators in the markets. You cannot prevent changes in the value of the dollar, you can only delay them. It is a mistake to try.

#### INTERNATIONAL DEBT

For five years, the U.S. government has talked about the international debt problem but has failed to develop a strategy for resolving it. Fortunately, the Baker Plan that calls for more lending to the debtors appears to be moribund. You should avoid government plans and opt for a market solution.

In the summer of 1982, when the problem first came to public attention, the World Bank estimated the total outstanding external debt of developing countries at about \$800 billion. By the end of this year, the face value of the debt will have grown more than 30% to nearly \$1.1 trillion. Even with relatively rapid growth of exports by Mexico, Brazil and some other debtor countries, the debt has grown faster. The ratio of the debt to exports is now higher in most debtor countries than in 1982. The table shows these data for four large debtors.

Foreign Debt as a Percentage of Exports

	<u>1982</u>	<u>1986</u>	<u>1987 estimate</u>
Argentina	405	536	554
Brazil	339	425	471
Mexico	299	413	366
Venezuela	84	322	278

---

Source: Morgan Guaranty Trust

A real debtor country's ability to service its foreign debt depends on real internal growth rates and real external borrowing costs. The debt-to-exports ratio often summarizes the burden of existing debt. Each 1% increase in debt at a constant interest rate requires a permanent increase in exports of 1% to prevent the debt-to-export ratio from rising further.

A common rule of thumb is that the debt-to-export ratio has to be reduced to about two before countries can return to the financial marketplace. In practice, a country's ability to service debt depends on its rate of growth and other factors. A successful strategy for ending periodic rescheduling crises must encourage countries to foster internal growth and limit the role of government. This will not occur



under a policy of concessional lending and pressuring reluctant banks to lend. The U.S. cannot lend to developing countries unless it borrows more or sells assets to foreigners. Even if these countries could pay the interest on their current debts, it would make little sense for the U.S. to sell its assets so as to lend more.

Large creditor banks have recently recognized that many of these debts sell at a discount. This is a useful first step toward a market solution of the debt problem. The recent decision by the Federal Reserve to permit ownership by bank holding companies of up to 100% of a non-bank foreign subsidiary for up to five years is a constructive step toward enhancing the opportunities for debt-equity swaps and resolution of the international debt problem.

Markets are now working to develop debt-equity swaps and other types of exchanges that lower the amount of the debts. Since 1982 this committee has urged the Federal Reserve and the Treasury to encourage exchanges of debt for equity at market prices. Exchanges will shrink the value of the debt denominated in dollars and move debtor countries in the direction of a return to the marketplace.

#### FINANCIAL DEREGULATION AND REFORM

The Federal Reserve has been one of the roadblocks on the way to financial deregulation. This has had two unfortunate consequences.

*First*, the U.S. financial system has been hampered in its efforts to adapt to changing conditions in the world marketplace.

*Second*, adjustment and adaptation have come piecemeal, either in response to particular problems, often bank insolvency, or through state action.

The Federal Deposit Insurance Corporation (FDIC) has now proposed a complete restructuring of financial regulation. Its proposal calls for repeal of the Glass-Steagall Act, which separates commercial and

investment banking, and repeal of the Bank Holding Company Act, which sets the structure within which banks can expand into other activities. The Federal Reserve should support this approach.

These are first steps. The financial system has been weakened by past policies. Many thrift associations, and some banks, are insolvent. They continue to operate only because deposits are guaranteed by government agencies. These technically insolvent institutions make large, risky loans and investments knowing that losses will be borne by the taxpayers.

The Federal Reserve should press for reform of the deposit insurance system to remove the incentive for weak financial institutions to make high-risk loans and investments. Greater reliance should be placed on market-based measures of risk. However, we do not endorse risk-based capital requirements. Greater attention should be given to the development of market measures of valuation.

Financial reform and deregulation are urgent. Estimates suggest that the Federal Savings and Loan Insurance Corporation (FSLIC) faces losses of \$40 billion, far in excess of the \$10 billion refinancing scheme that recently became law. Losses have been rising during a prolonged economic recovery. Recognition of these large losses and the risk of larger future losses reveals the weakness in the present system.

We urge that saving association assets be valued at market, that insolvent association be closed as soon as possible to prevent losses that are mounting day by day. The cost of closing failed thrift institutions should be financed by a surcharge on the remaining associations to retire any debt incurred by the regulators in the process of closing insolvent institutions.



## THE FEDERAL BUDGET TANGLE

Mickey D. LEVY  
Fidelity Bank

The Fiscal Year 1987 deficit will dip below \$160 billion, a \$62 billion decline from the FY1986 deficit. However, this improvement reflects one-time boosts to tax revenues and cuts in government outlays that will not be sustained. Without enactment of pending budget legislation, the deficit will rise into the \$180-\$200 billion range in FY1988-1989 before gradually declining again. Faced with this outlook, Congress attempted this summer to reach a compromise on deficit cutting legislation, but failed.

The political battle over the FY1988 budget is resuming this fall. In order to keep the federal government functioning, and to abide by current budget law, Congress has to pass any appropriations bill, a budget reconciliation bill, and another debt ceiling bill. Also, Congress is trying to fix the ailing Balanced Budget Act of 1985 (Gramm-Rudman-Hollings, or GRH). There is a heated political battle over the FY1988 budget, including separate and very complex skirmishes on each of these budget initiatives, which have important interlocking elements. Clearly, political maneuvering is being influenced by the upcoming Presidential elections. The most common political undercurrent is the general attempt by Democrats to embarrass the Presidency, countered by Republican efforts to appear to behave in a fiscally responsible manner while avoiding undesired tax increases or spending cuts in an election year.

The President's budget (*Mid-Session Review of the FY1988 Budget*) requests a \$35.1 billion deficit cut in FY1988, yielding a \$123.3 billion deficit. It includes the same requests made in the *FY1988*

Budget presented in January 1987, with the magnitude of savings adjusted by revised economic assumptions and technical reestimates. Approximately half of the requested savings would come from non-defense spending cuts. The remainder of savings would come from higher revenues achieved through tighter compliance, user fees, credit reform, privatization and other loan asset sales. Included is a request for increased budget authority for defense, which declined in real terms in both FY1986 and FY1987. The President's projected deficit exceeds the original \$108 billion GRH deficit target for FY1988.

A Congressional Concurrent Resolution on the FY1988 Budget (HConRes 93), passed in June 1987, calls for budget deficit targets of \$146 billion in FY1988, \$140 billion in FY1989, and \$108 billion in FY1990. The \$146 billion target was based on a CBO baseline deficit estimate of \$183 billion and would require \$37 billion in deficit cuts. The resolution included \$19.3 billion in tax increases for FY1988. A reconciliation bill detailing how the cuts in the concurrent resolution would be achieved was due July 28, but a compromise has not yet been reached.

Meanwhile, a GRH progress report issued August 19, prepared jointly by the CBO and OMB, estimated the FY1988 deficit, calculated on a so-called "Gradison base," to be \$153.4 billion.<sup>1]</sup> Under original GRH law, this would mean \$45.4 billion of across-the-board cuts. This would require cuts of approximately 13% in FY1988 defense spending and

---

<sup>1]</sup>The "Gradison base" essentially calculates the deficit without the effects of inflation from the previous fiscal year. The CBO deficit estimate was \$169.9 billion while OMB's deficit was \$136.8 billion. Some policymakers believe the huge \$33.1 billion difference, and the averaging technique used to determine the magnitudes of across-the-board cuts, argues for an established cut in each year that does not depend on such a base.

19% in non-defense spending. However, the process of the automatic across-the-board cuts imposed by GRH has been found unconstitutional and, in any case, the Administration and Congress oppose such large cuts.

Consequently, recent Congressional efforts have sought to "fix" GRH, making its sequestration process constitutional and relaxing its deficit targets. The House and Senate have not reached a final compromise on a "fix." However, they agree generally to a modified GRH that would involve a substantially smaller deficit cut in FY1988 than is required in Congress's concurrent resolution. The House's proposed GRH fix would either raise the FY1988 deficit target to \$144 billion, or cut a maximum of \$23 billion from the FY1987 deficit, while the Senate has proposed a \$150 billion deficit.

The Administration has stayed on the sidelines as the House and Senate debate specific provisions of a modified GRH, repeating only its standard call for a balanced budget and expressing concern about maintaining its defense authorization requests. One key issue of disagreement between the House and Senate is the amount of flexibility given to the President on defense spending. While both the House and Senate have agreed to exempt military personnel outlays from automatic cuts, the Senate also would allow the President to propose reducing cuts for specific defense spending accounts, while the House would not allow this flexibility.

Earlier Congressional initiatives to fix GRH were tied to federal debt-ceiling limitation legislation (HJRes 324). Apparently, President Reagan's rejection of a \$23 billion deficit cut in FY1988 as part of a GRH fix forced a breakdown of the compromise proposal. The Administration asserted that the proposed GRH fix would "front-load" deficit cuts

into FY1988 in order to force Republicans into an undesirable tax increase or spending cut in an election year. This failure to compromise led to a temporary rise in the statutory debt ceiling, which is scheduled to expire September 23, 1987.

Consequently, Congress must immediately pass a bill that extends the debt ceiling limitation and a reconciliation bill that details the deficit cuts established by the concurrent resolution. Pending reconciliation instruction proposals by the House and Senate would achieve approximately \$30.5 billion of the required \$37 billion in cuts. The remainder must come from the appropriations process. Much negotiating lies ahead. The concurrent resolution includes tax increases, and the President's opposition to tax increases may generate a veto. Such a veto carries added weight if the reconciliation bill is attached to debt ceiling legislation. Also, the House and Senate disagree about important details in the concurrent resolution, and do not see eye-to-eye on some of the appropriating legislation. Moreover, proposed appropriations are significantly different than those requested by the Administration. For example, the House, which must initiate appropriation actions in Congress has passed an authorization bill that would provide \$289 billion in defense budget authority in FY1988, compared to \$302.9 billion in the Senate bill, and \$312 billion requested by the President.<sup>2]</sup>

---

<sup>2]</sup>These differences involve substantive policy issues: for example, the House bill would ban tests on space-based anti-ballistic missile systems (ABMs), require the U.S. to resume observance of the SALT II limits, and ban nearly all nuclear weapons tests, if the Soviet Union observes the same restraints. In contrast, the higher budget authority requested by the Administration and favored by Senate Republicans is based in part on the belief that more testing should be acceptable under the 1972 U.S.-Soviets treaty limiting ABMs.

If Congress passes a GRH fix with lower required deficit cuts for FY1988 before a reconciliation bill is passed, then the new GRH deficit target will dominate. A GRH fix currently under consideration includes a \$23 billion deficit cut in FY1988. This would reduce the required tax revenue increase in FY1988 to approximately \$11-12 billion, compared to \$19.3 in the Congress's concurrent resolution. Whether a proposed GRH fix is passed before a reconciliation bill is uncertain. It depends in part on whether a GRH proposal is attached to the required debt ceiling legislation -- also an uncertainty. Moreover, if Congress fails to compromise on a GRH fix, then the concurrent resolution dominates. However, since it includes a tax increase and may be vetoed, budgeting in FY1988 may be conducted under a continuing resolution.

The bottom line is the final outcome for the FY1988 budget is highly uncertain, and this affects future budgets. Simply the fact that all of the major required initiatives may be bunched into a single bill reflects a faulty process bogged down by pre-election year political maneuvering. Is this any way to conduct fiscal policy?

#### BUDGET REVIEW

The budget deficit of \$160 billion in FY1987 will be approximately 4.0% of GNP, down from 5.3% in FY1986 and an average 4.8% for FY1982-1986. This will be achieved by a rise in spending of only 2% from FY1986, and a very rapid 11% increase in revenues.

This pattern reflects several special, one-time impacts that will not persist. The Congressional Budget Office's baseline budget (*The Economic and Budget Outlook: An Update, August 1987*) forecasts deficits of \$183 billion in FY1988 and \$192 billion in FY1989 (3.6% and



3.2% of GNP). The Administration, using more optimistic economic assumptions, also forecasts a rise in its current services deficit (see table 1).

Several special factors generated the temporary improvement in the FY1987 budget. The Tax Reform Act of 1986, which boosted personal tax revenues approximately \$20 billion in FY1987, will reduce them approximately \$12 billion in FY1988 and \$18 billion in FY1989. Additionally, the tax reform generated an unanticipated surge in capital gains realization, which provided added tax revenues. That will take away from future capital gains taxes. Consequently, revenues should rise approximately 5% in FY1988, less than half of their FY1987 increase. Also, spending growth will accelerate in FY1988. Asset sales and loan repayments under the reconciliation bill of 1986 provided a one-time saving to the FY1987 budget. Furthermore, including the last payment of revenue sharing into FY1986, and postponing certain military paychecks and Medicare payments into FY1988 have also temporarily lowered FY1987 outlays.

Recent legislation will also add to higher deficits. The Supplemental Appropriations Act of 1987 reflects the Administration's catastrophic health insurance proposal, the timing of Medicare outlays, and several other policy proposals. Recently enacted banking legislation provides the FDIC with alternative financing methods for assisting failing banks and contributes additional funds to the FSLIC fund for failing savings institutions.

A sizeable rise in interest rates will result in a further significant rise in net interest outlays and deficit projections. Interest rates have risen significantly since January 1987, and the

Administration and CBO have revised up their interest rate forecasts, particularly for the 10-year government bond (see table 2). Presently, rate yields are above 1988 forecasts and, unless they recede, will add to deficits. Moreover, higher inflation has raised outlay and deficit forecasts by raising COLAs for social security and certain entitlement programs. The Administration forecasts peak rates of CPI inflation to occur in 1987. If CPI inflation accelerates in 1988, as the CBO forecasts, outlays for indexed federal programs will be higher.

Under current law, the deficit should resume its decline after FY1989, but at least two caveats apply to this forecast. First, healthy economic growth must continue, since any weakness would adversely affect the budget outcome. Secondly, these declining budget forecasts include social security payroll taxes and benefits, even though the social security accounts will be removed from the unified budget beginning in 1990. Since social security is accumulating large surpluses, removing it from budget calculations adds significantly to the deficit (the social security surplus will be approximately \$38 billion in FY1988, and will rise to over \$60 billion in FY1991). This implies that without deficit cutting legislation, the on-budget deficit (excluding social security) will remain above \$220 billion through FY1992 (see table 1).

Clearly the budget outlook is not encouraging. Stemming the rapid rise in federal debt and avoiding potentially adverse economic consequences requires more deficit cutting legislation. The outcome will depend on political, not economic, considerations.

Table 1

Budget Projections  
(in billions)

	Fiscal Years					
	1986	1987	1988	1989	1990	1991
<b>Outlays</b>						
President's Proposal	989.8	1017	1032	1085	1129	1176
President's Current Services	989.8	1017	1064	1131	1186	1244
CBO Baseline	989.8	1010	1080	1146	1212	1280
CBO Estimate of President	989.8					
<b>Receipts</b>						
President's Proposal	769.1	858	909	973	1049	1131
Current Services	769.1	858	903	965	1040	1121
CBO Baseline	769.1	853	897	954	1036	1115
CBO Estimate of President	769.1					
<b>Deficit (-)</b>						
President's Proposal	-220.7	-158	-123	-113	- 80	- 45
Current Services	-220.7	-158	-161	-166	-146	-123
CBO Baseline	-220.7	-157	-183	-192	-176	-165
CBO Estimate of President	-220.7					
<b>Memo:</b>						
<b>Deficit, On-Budget (Excluding Social Security)</b>						
President's Current Services		-179	-200	-214	-206	-195
CBO Baseline		-177	-221	-236	-229	-227
<b>Off-Budget (Social Security Surplus)</b>						
President's Current Services		20	38	48	60	71
CBO Baseline		19	38	44	54	63

Table 2

Administration and CBO  
Economic Projections

	1987	1988	1989	1990	1991
<i>Percent change, fourth quarter over fourth quarter:</i>					
Real GNP					
Administration	3.2	3.5	3.4	3.4	3.3
CBO	3.1	2.6			
Nominal GNP					
Administration	7.6	7.6	7.3	7.0	6.4
CBO	7.2	6.8			
CPI-W					
Administration	4.7	4.4	4.0	3.5	3.0
CBO	5.1	5.2			
<i>Percent change, calendar years:</i>					
Nominal GNP					
Administration	6.1	7.5	7.4	7.1	6.6
CBO	5.9	6.9	6.7	6.8	6.8
Real GNP					
Administration	2.6	3.3	3.4	3.4	3.3
CBO	2.6	2.7	2.6	2.7	2.7
GNP Deflator					
Administration	3.3	4.1	3.9	3.6	3.2
CBO	3.3	4.1	4.0	4.0	4.0
<i>Interest rates, percent, calendar year averages:</i>					
3-Month T-Bill					
Administration	5.7	5.5	5.3	5.0	4.5
CBO	5.9	6.6	5.8	5.7	5.7
10-Year Government Bond					
Administration	8.0	7.6	7.0	6.3	5.5
CBO	8.1	8.5	7.8	7.4	7.1
Memo: January 1987 Estimates					
3-Month T-Bill					
Administration	5.4	5.6	5.3	4.7	4.2
CBO	5.6	5.7	5.6	5.5	5.3
10-Year Government Bond					
Administration	6.7	6.6	6.1	5.5	5.0
CBO	7.2	7.2	6.6	6.2	5.9



## RECENT BEHAVIOR OF M1 VELOCITY

Robert H. RASCHE  
Michigan State University

At our last meeting, I presented some updated results of the research on M1 velocity that I had prepared for the November, 1986 Carnegie-Rochester Public Policy Conference. I concentrated on the behavior of the monthly values of the ratio of personal income to M1, since the relatively few post-sample observations on quarterly (3) and annual (1) available at that time provided little information about the great velocity slowdown of 1986. My present discussion will concentrate on both annual and monthly data. The former are interesting because revised estimates of annual personal income for 1985 and 1986 are now available. The latter are interesting, not because I think that the month to month wiggles tell us much, or that it will ever be possible to forecast these wiggles with great accuracy, but rather because they provide a larger sample of data with which to assess the question of whether the old relationships are stable.

You will recall that last March I presented some estimates that suggested that the "shift in velocity drift" that I had identified beginning around the end of 1981 was probably part of a change in the long-run relationship between M1 velocity and interest rates. This change can be characterized as an increase in the long-run interest elasticity of velocity brought about by a rotation of the long-run velocity-interest rate relationship. My conclusion was that since late 1981 M1 velocity will be roughly constant in the absence of trends in interest rates, but will respond with greater sensitivity to changes in interest rates. You will also recall that at that time the latest data available were through October 1986, and that extrapolation of my

estimated relationship through the first ten months of 1986 indicated large forecast errors for the period May through October.

The 1987 revisions of the money stock data have now been released, and apart from changes in the seasonal adjustments appear to have very little effect on the estimates of the money stock. The 1987 revisions of personal income were announced at the end of July (July 28, 1987 *Wall Street Journal*) and appear to be significant for the interpretation of recent velocity behavior. The annual data are interesting. A comparison of old (March 1987) and new (September 1987) annual estimates of personal income velocity is:

Year	Old Estimates		New Estimates	
	Velocity	Percent Change	Velocity	Percent Change
1983	5.5779		5.5779	
1984	5.7120	2.38	5.7161	2.33
1985	5.5800	-2.34	5.6020	-2.02
1986	5.1832	-7.38	5.2503	-6.48

It is clear from these numbers that the 1984 and 1985 estimates are not affected to any significant degree, but that almost an entire percentage point of the great velocity decline of 1986 has been revised away.

With these estimates it is possible to reestimate the annual equation that I constructed in the Carnegie-Rochester paper allowing for a change in the interest elasticity beginning in 1982, and to extrapolate the equation through 1986 on both the old and new personal income. The resulting estimates are:

	1986 Revisions	1987 Revisions
Constant	.0321 (.0024)	.0321 (.0024)
D82	-.0321 (.0024)	-.0321 (.0024)
$\Delta \ln \text{RTB}$	.0033 (.0008)	.0033 (.0008)
D82* $\Delta \ln \text{RTB}$	.0064 (.0031)	.0059 (.0031)
$\bar{R}^2$	.68	.67
se	.0130	.0130
d-w	1.67	1.68
Predicted (86)	.0218	.0207
Error (86)	.0531	.0442

This equation is estimated with the post 1981-drift constrained to zero because of the limited degrees of freedom (4) in the annual data. Clearly the equation did not catch all of the great velocity decline of 1986, though it did predict a decline in velocity from the annual average from 1985 as a result of the decline in Treasury bill rates from an average of 7.48 in 1985 to an average of 5.98 in 1986. Since the estimates are essentially unaffected by the personal income revisions, the forecast error has been reduced by nine-tenths of a percent by the data revisions.

As of this writing sufficient data are available to extrapolate the monthly equation that I presented last March through April 1987. The revised money stock data leave the estimates for the sample period ending in December 1985 essentially unchanged. The estimated coefficients of the monthly velocity equation over the 53-85 sample period with the revised money data but unrevised personal income data are:



	1986 Revisions	1987 Revisions
Constant	.0310 (.0024)	.0306 (.0025)
D82	-.0305 (.0071)	-.0297 (.0075)
$\Delta \ln \text{RTB}$	.0053 (.0006)	.0053 (.0006)
$\Delta \ln Y/P$	.8351 (.0385)	.8225 (.0403)
$D82 * \Delta \ln \text{RTB}$	.0122 (.0024)	.0114 (.0026)
$\bar{R}^2$	.62	.59
se	.0434	.0455
d-w	1.84	1.74

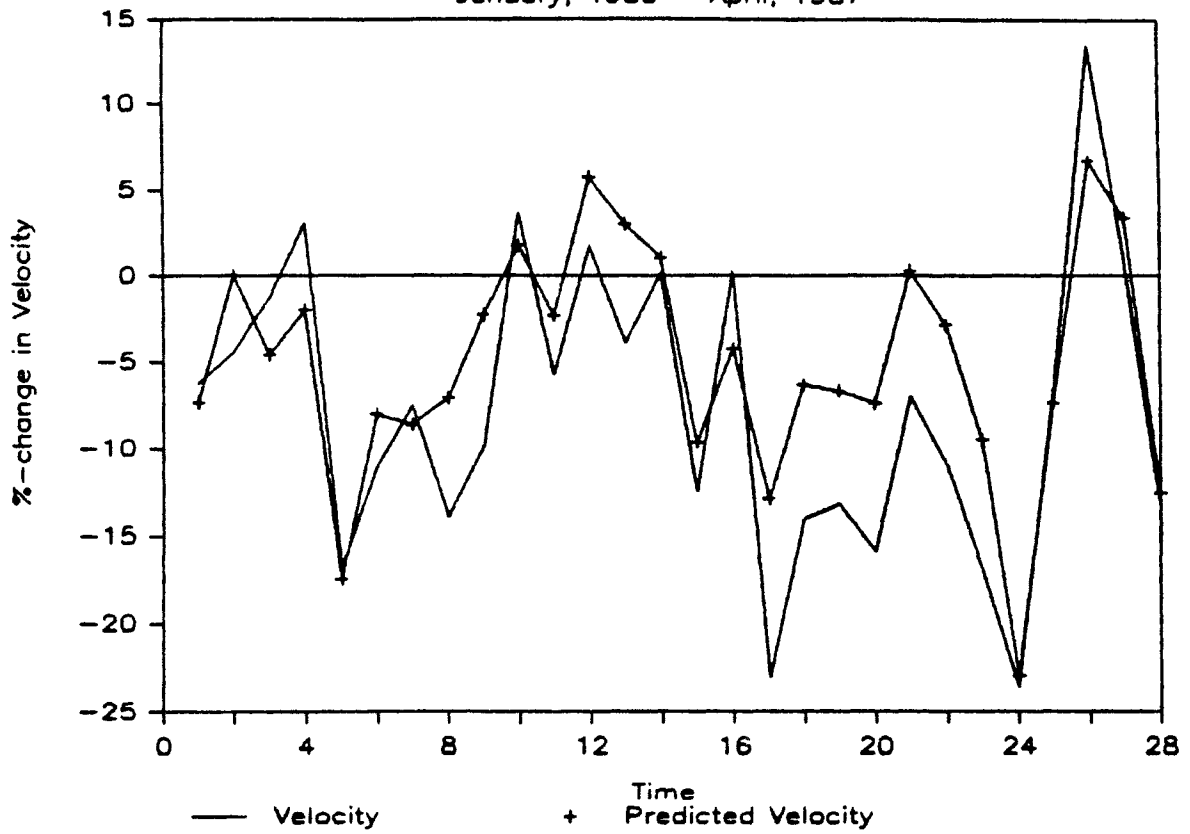
The actual and predicted values of monthly personal income velocity and the prediction errors for monthly velocity are shown in the attached Figures for January 1985 through April 1987. It is clear from both graphs that the equation systematically overestimates velocity changes for the period May 1987 through November 1987. It is not known at this time how the personal income revisions will affect these forecast errors though from the annual results presented above I expect that the average forecast error over the twelve months of 1986 will be reduced.

Whatever is going on in the May through November 1986 period that is not captured by our specification appears to have come to an end in December. Personal income velocity dropped remarkably in December, given the large jump in M1 at that time. However, the specification predicts that drop almost perfectly, and since November seems to have

tracked the behavior of velocity quite well. Based on this evidence I am prepared to stick with the conclusion that I reached last March, namely that we should expect that over the long-run in the absence of significant interest changes that M1 velocity will exhibit zero drift.

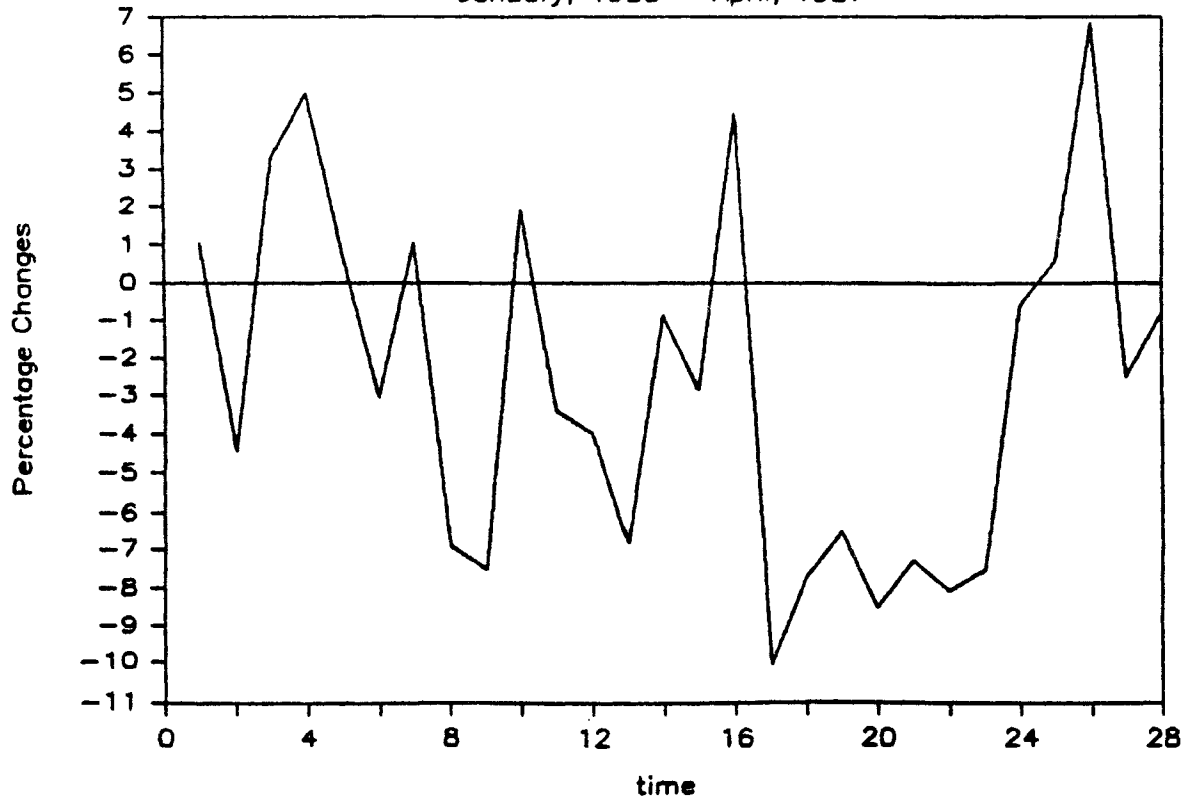
# Percentage Change in M1 Velocity

January, 1985 - April, 1987



# M1 Velocity Errors

January, 1985 - April, 1987



## ECONOMIC OUTLOOK

Jerry L. JORDAN  
First Interstate Bancorp

### I. ASSUMPTIONS AND CONCLUSIONS

The disparity in the performance of world economies -- by sector, by region, and by industry -- that was so pronounced in 1985 and 86, began to narrow in 1987. In 1988 -- the sixth year of the current U.S. economic expansion -- further recovery in the previously depressed sectors, regions and industries will be accompanied by further slowing of the previously strong segments of the economy. As this convergence of performance continues through the next year, the current expansion will become increasingly vulnerable to potential destabilizing shocks.

Further ahead, the odds of a mild recession occurring in 1989 have risen substantially, and we do not expect this longest non-war-time expansion to reach its seventh birthday. The primary reason for a forecast of a modest decline in economic activity in 1989 is an expectation that monetary policies will become sufficiently restrictive after inflation passes the 6% rate in the second half of next year to produce a downturn.

#### Vulnerable Expansion

Although our "most likely" forecast is for continued growth of output at about a 3% rate in 1988, there is an increasing risk that some type of shock will throw the national economy into a nose dive. A sudden tightening of monetary policy to "save the dollar" on foreign exchange markets, another "supply disruption" of oil flowing from the middle east, or a puncturing of one or more of the speculative bubbles in a few of the world's major financial and real estate markets, could

bring an end to the expansion before 1989, even if in the middle of a presidential election year.

#### Debt, Debt, and More Debt

It is well known that Federal budget deficits in the 1980s have pushed the national debt to the \$2 trillion level. As the stock of debt has risen relative to national income, and "real" interest rates have trended higher, the burden of servicing this mountain of debt has risen, as interest expense has become the fastest growing component of the Federal budget. Not unrelated, the U.S. became a net debtor nation to the rest of the world in 1985 for the first time in over 70 years. In 1986, the U.S. passed both Brazil and Mexico combined as the world's largest debtor, and by the time a new administration takes office in early 1989, the U.S. will owe the rest of the world about one-half trillion dollars. Since we have been borrowing to finance consumption of other countries output, we have added greatly to foreigners claims on our future output without adding to our ability to meet these obligations.

Within the country, the restructuring of corporate balance sheets -- sometimes as a result of and sometimes to head off leveraged buy-outs -- has added significantly to the debt-service burdens of the corporate sector. Furthermore, the consumer-spending led expansion of 1983-86 resulted in net consumer indebtedness rising to a record share of personal income.

While the existing levels of debt incurred by the various sectors of the U.S. economy are still serviceable by a \$5 trillion dollar economy, the trends are not encouraging. The U.S. has demonstrated that it has no fiscal discipline, and consequently is unlikely to

achieve and maintain a non-inflationary monetary discipline. As the world's numeraire and reserve currency country, and now also the biggest debtor, the temptation to attempt to inflate away the real obligations of debtors is considerable. Our forecast includes an increase of inflation from about 5% in 1987 to 5.5% in 1988 and 6% in 1989. We expect that once the 6% threshold has been reached, the monetary authorities will adopt a restrictive monetary policy, even at the expense of a relatively mild recession.

## II. U.S. ECONOMY -- SUMMARY POINTS

- \*Current expansion is already of record length for peacetime.
- \*Nearly 16 million jobs have been created so far in the expansion.
- \*U.S. is approaching full employment as unemployment drops further below 6%.
- \*Real GNP growth will average 3.2% in 1987-88, versus 2.75% in 1985-86.
- Consumers less dominant. Auto sales average 10.4 million in 1987-88 vs. 11.2 million in 1985-86.
- Housing minus instead of plus. Housing starts average 1.6 million in 1987-88 vs. 1.77 million in 1985-86.
- On the other side, revival in business spending for new equipment.
- Narrowing rather than widening of trade balance.
- Moderate building of inventories instead of cutbacks.
- \*Revival of U.S. manufacturing key element in 1988 picture; disparity among sectors, industries, and regions to remain, but less than in 1985-86.
- \*"Misery Index" of 11% in 1988 -- split roughly evenly between inflation and unemployment.
- \*Inflation moves from low point of 1986 to 4.8% in 1987, 5.5% in 1988, and 6.2% in 1989.
- Important prices will be rising at rate of about 10% during all three years, and employee costs will start to increase more rapidly.

\*Increases in short-term interest rates with faster economic growth, higher inflation, and stronger credit demand. One percentage point rise between end of 1987 and 1988.

\*Much smaller increase in long-term rates as financial markets have already incorporated a higher long-run expectation of inflation.

### III. INTERNATIONAL ECONOMIC OUTLOOK -- SUMMARY POINTS

The mirror image of rising U.S. exports and declining real imports is an opposite shift within the Japanese and European economies. The strong currency countries have experienced a significant contraction of net exports in 1987, and that trend is expected to continue in the forecast period. Meanwhile, strong monetary and fiscal "pump pricing" in most other countries is causing faster growth in real domestic purchases.

Better consumption levels in a strong currency environment has been accompanied by a substantial increase in foreign demand for internationally traded commodities. The firming of dollar prices of most world-traded goods is, in part, a reflection of the sharply lower foreign currency prices of such goods. The dollar prices of goods and commodities traded on world markets are expected to continue to rise from their 1986 lows.

\*Industrial-country real GNP growth (large countries) continuing in the 2-3% range through 1988.

\*However, this masks major shifts in the composition of growth. The drop in the \$ is hurting export industries, but domestic demand in 1986 grew more strongly in Germany and Japan than did GNP. This should continue, and implies major structural changes for those economies.

\*U.S. recession, if it were to occur by 1989, would cause some slowdown in other industrial countries, but may not be severe. Countries will allow currencies to depreciate rather than follow U.S. interest rates upward. They have lower inflation than the U.S. and therefore won't mind a mild acceleration resulting from currency depreciation. (This is during the second half of 1989.)

\*Effects of expansionary monetary policies followed in most industrial countries (partly due to currency-market intervention) will cause inflation to rise, but not by as much as in the United States.

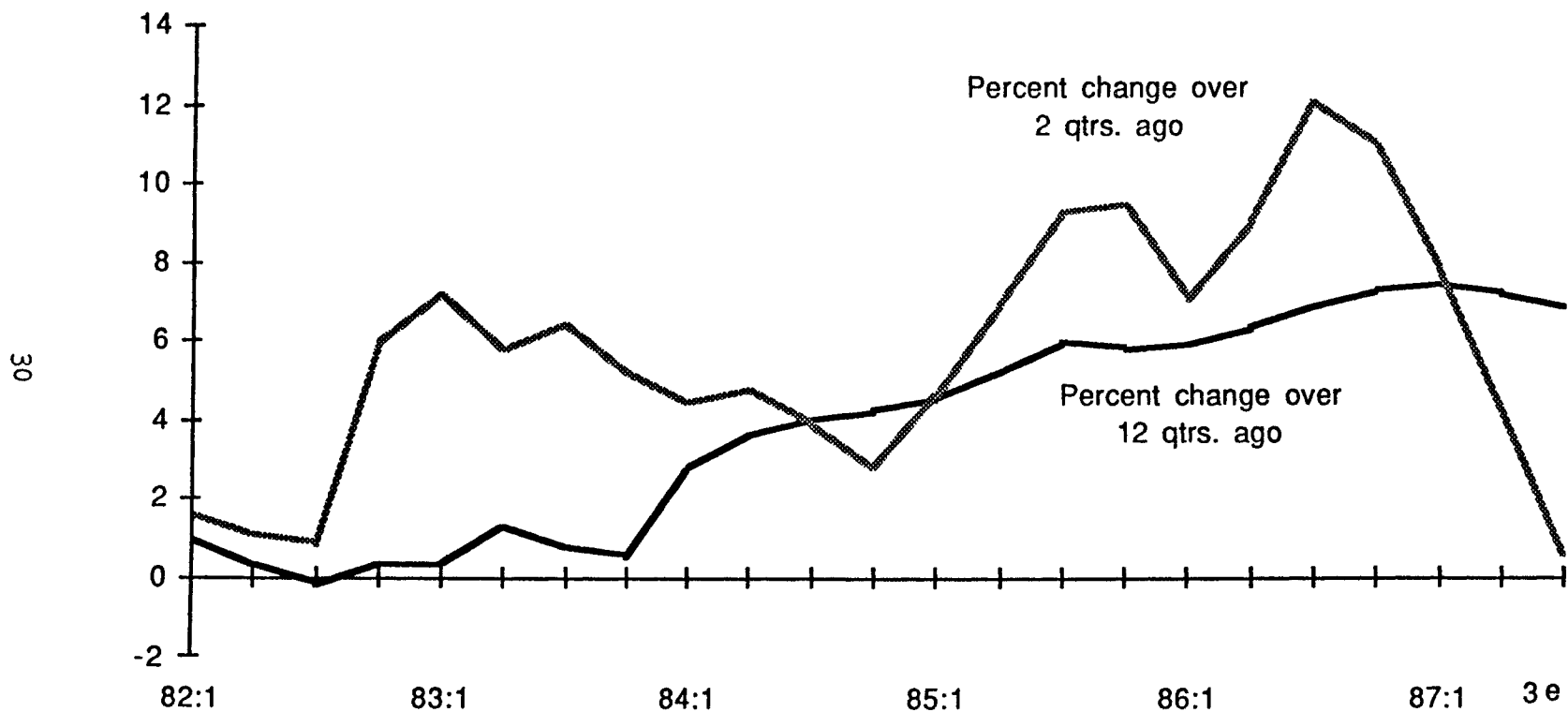
\*Dollar will continue to decline through 1988 and early 1989. Could lose another 15% against the yen during the coming 18 months. Reasons: U.S. inflation rising more than in other major countries; trade deficit has remained large, implying further build-up of foreign debt.

\*U.S. trade deficit will fall in 1988 and 1989, after rising slightly in 1987. Continued large increases in the deficit in next external investment position of the United States. Japan will continue to be the major source of funding.

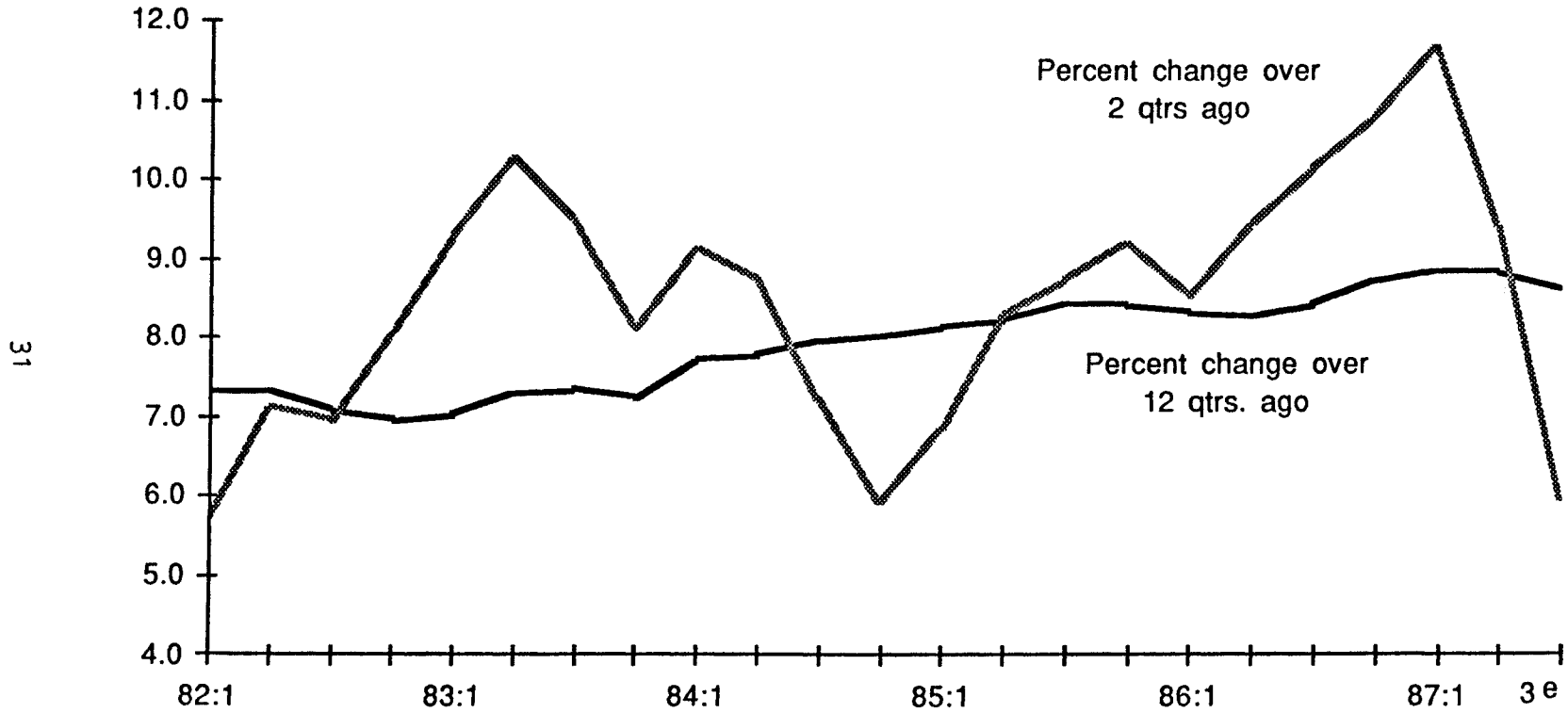
\*Developing-country debt: Lack of new funds from commercial banks; increasing resistance to making debt service payments under existing conditions in a number of countries. Implies that banks may be forced to use at least part of the reserves recently established. However, on balance, because of relatively good financial position of some countries (Mexico and Chile), reserves are probably adequate for the near term. 1989 recession likely to cause more problems. Demand for paper in secondary market to pick up, but prices may remain weak.



### GROWTH OF M1 NET OF OTHER CHECKABLES (Percent change, annual rate)



### GROWTH OF MONETARY BASE (Percent change, annual rate)



31



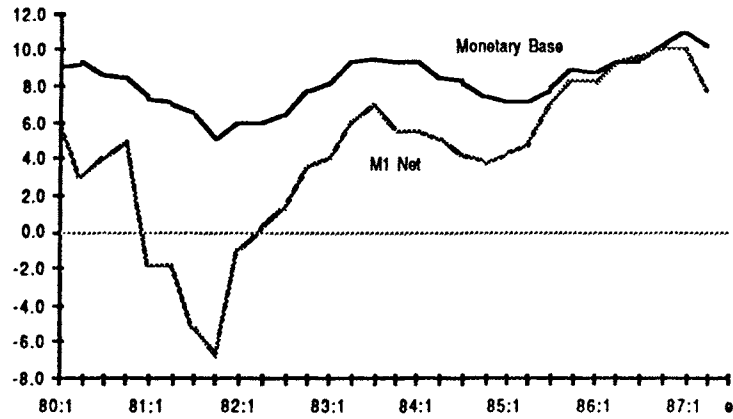
# **MONETARY POLICY AND THE OUTLOOK**

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

**Shadow Open Market Committee**

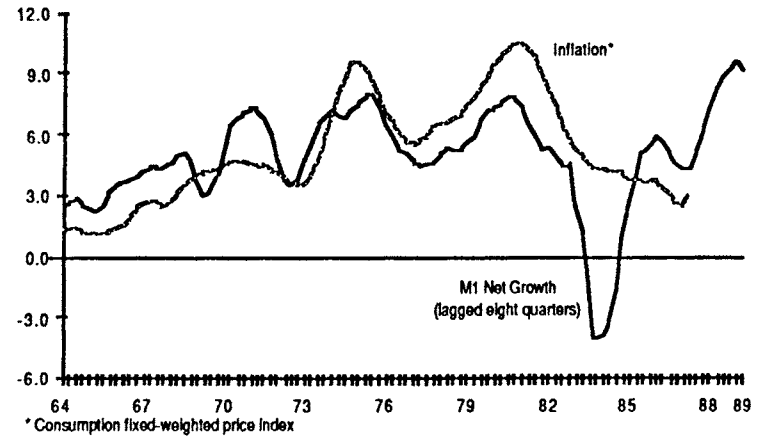
**Harmonie Club**  
**New York**  
**September 13-14, 1987**

**MONETARY BASE AND M1 NET OF OTHER CHECKABLES**  
(Quarterly percent change over year ago)



M1, narrowly defined to include only currency and demand deposits, has tracked the monetary base relatively closely in recent years.

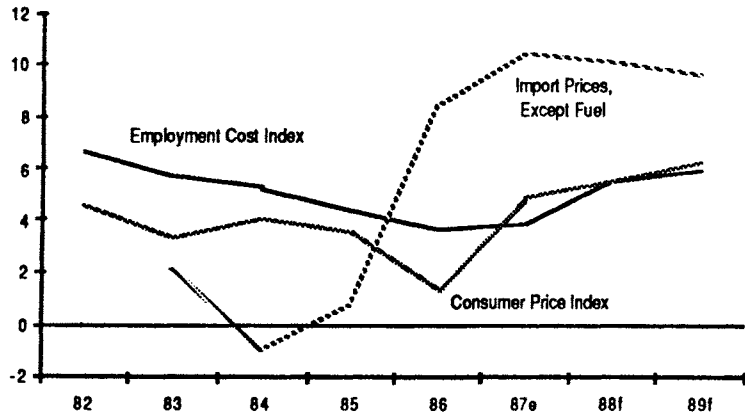
**MONEY GROWTH AND INFLATION**  
(Four-quarter percent changes of four-quarter average levels)



Money growth has tended to predict changes in the inflation rate which would occur two years later. The acceleration in money growth during the past two years points to higher inflation in '88 and '89.

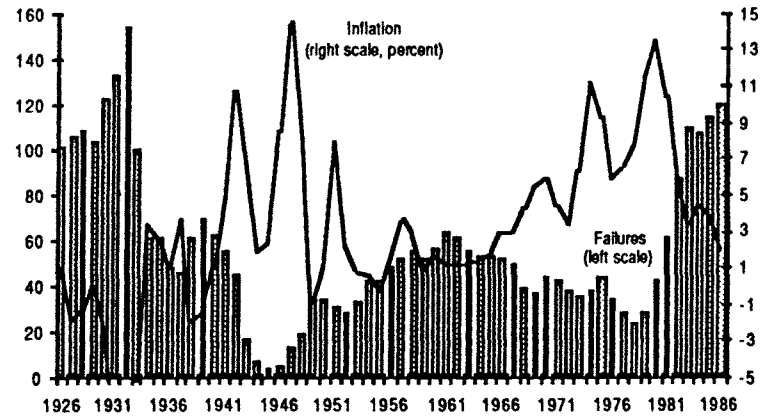
34

**WAGES, IMPORT PRICES AND CONSUMER PRICES**  
(Percent changes, fourth quarter to fourth quarter)



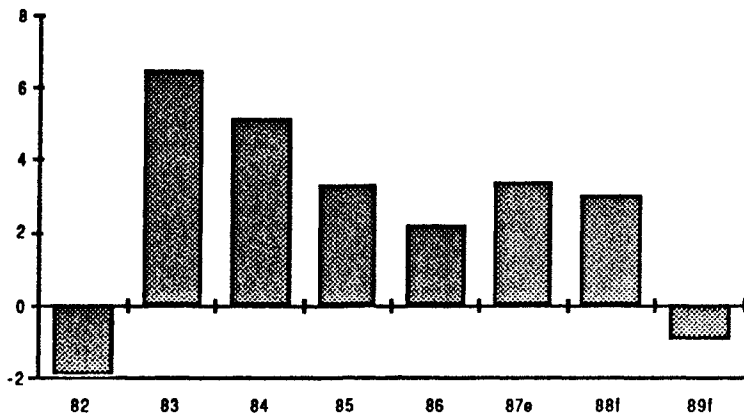
The low point for inflation in terms of consumer prices was reached in 1986. Import prices are climbing at a 10% annual rate and employee costs are also expected to rise more rapidly.

**NUMBER OF FAILURES PER 10,000 & THE INFLATION RATE**



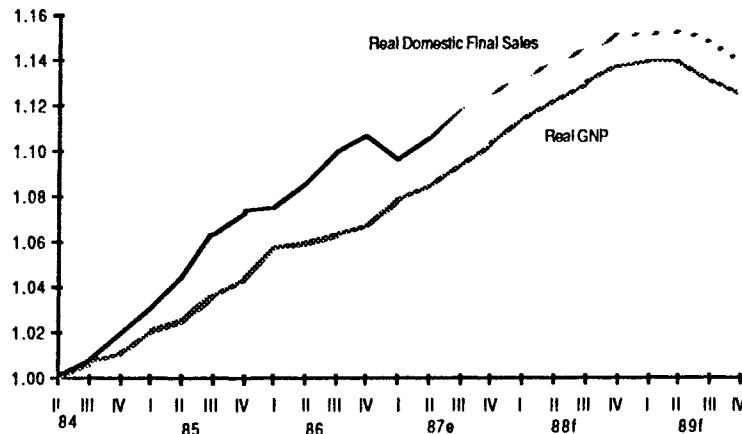
Business failures tend to be inversely related to inflation. During periods of low inflation rates, failures per 10,000 concerns are higher.

**REAL GNP**  
(Percent change, 4th quarter to 4th quarter)



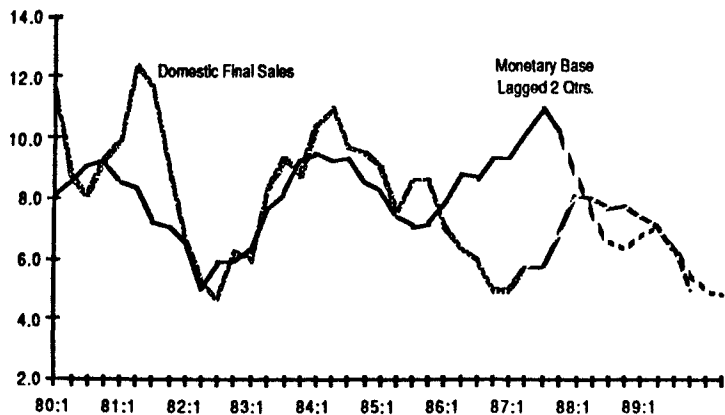
The current expansion will be of record length for a non-war period. GNP is expected to be fairly strong through 1988 before the economy slips into a recession in 1989.

**SPENDING VS. PRODUCTION**  
(Cumulative change from 2nd qtr. 1984, Index=1.00)



The growth of spending has outpaced the increase in production significantly since the middle of 1984. Expansive fiscal and monetary policies have fueled domestic demand, which has been met in sizable part by rising imports. Output growth, however, is now outpacing the increase in domestic spending.

**DOMESTIC FINAL SALES & LAGGED MONETARY BASE**  
(Quarterly percent change over year ago)



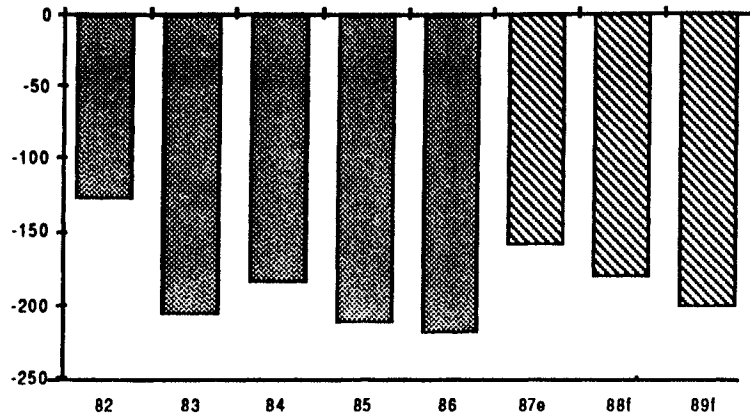
Domestic final sales is a good indicator of demand and it generally tracks the monetary base lagged two quarters. The recent divergence reflected the impact of lower inflation and interest rates on money holdings during the past two years. That pattern is now reversing.

**SECTORAL CONTRIBUTIONS TO GNP GROWTH**  
(Percent share of two-year real GNP growth, fourth quarter data)



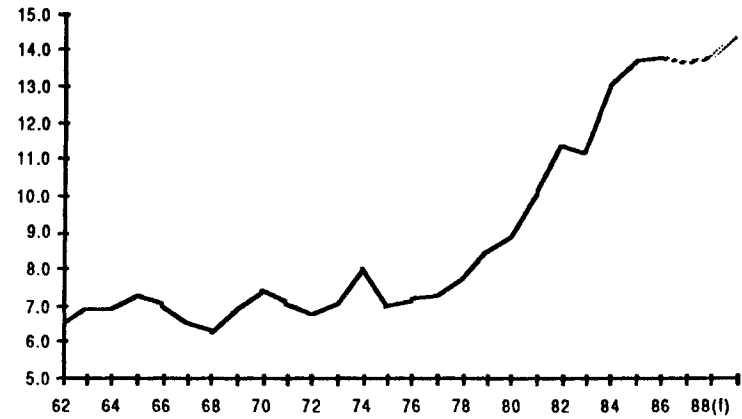
The consumer will be a much less dominant contributor to GNP growth in the 1987-88 period compared with 1985-86.

**FEDERAL DEFICIT**  
(Billions of dollars, fiscal years)



The federal deficit reached a peak in 1986 of \$221 billion. Deficits are likely to remain large during 1988-89, exceeding significantly Gramm-Rudman-Hollings targets.

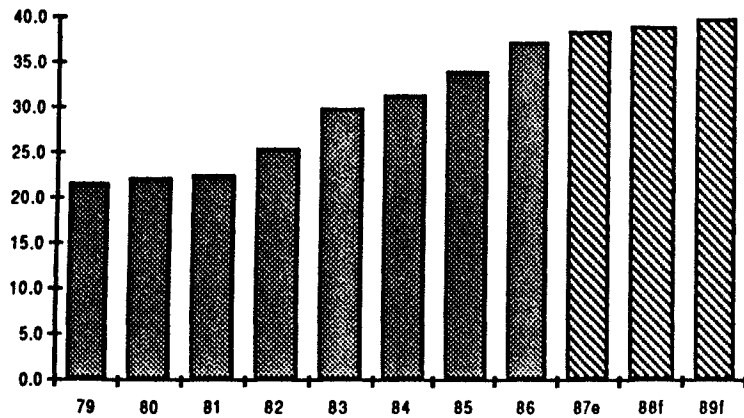
**NET INTEREST EXPENSE AS A PERCENT OF TOTAL FEDERAL OUTLAYS**  
(Fiscal years)



The amount of federal outlays that is required to finance the debt has grown at a rapid rate since the mid 1970s, reaching 14% in 1986, with a further increase expected.

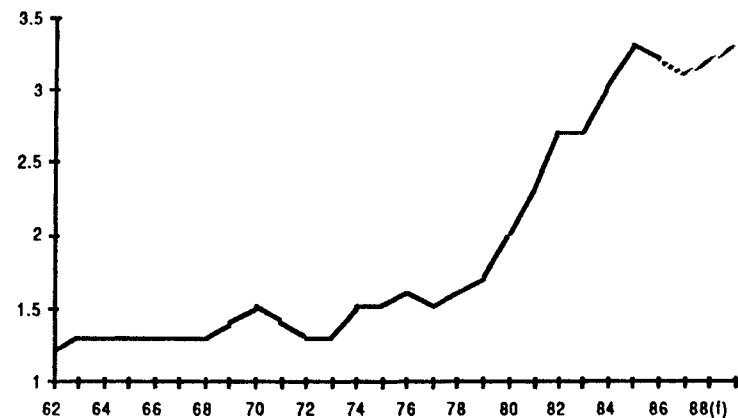
36

**PUBLICLY HELD DEBT OUTSTANDING AS A % OF GNP**  
(Fiscal years)



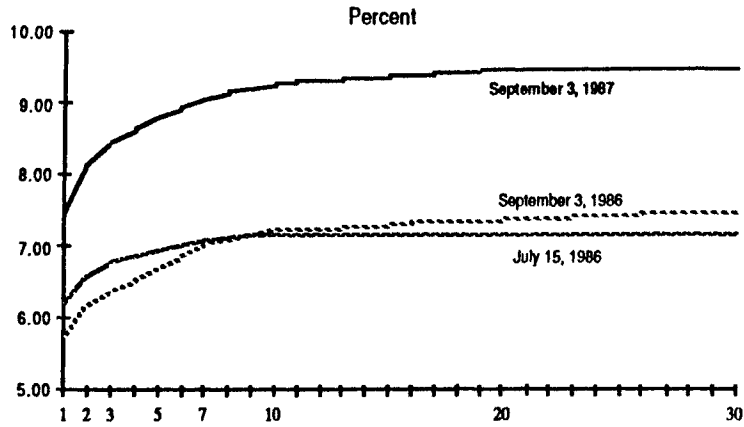
Publicly held debt will continue to climb to nearly 40% of GNP by 1989.

**NET INTEREST EXPENSE AS A PERCENT OF GNP**  
(Fiscal years)



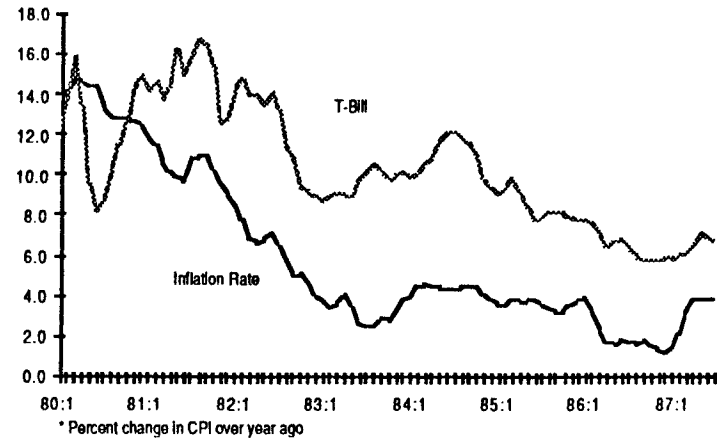
The share of GNP that is required to finance the deficit reached 3.4% in 1986, up from only about 1% in the early 1960s.

### YIELD CURVE, ANNUALLY 1 TO 30 YEARS



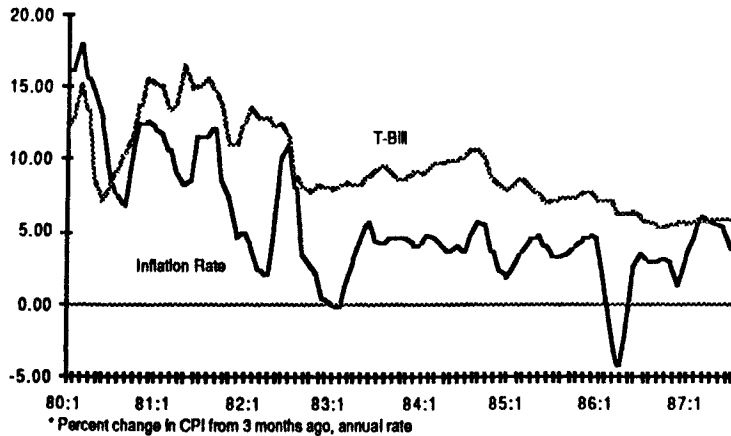
The yield curve has steepened considerably since last year, as well as risen over 200 basis points.

### 1 YEAR TREASURY BILL & INFLATION RATE\* (Percent)



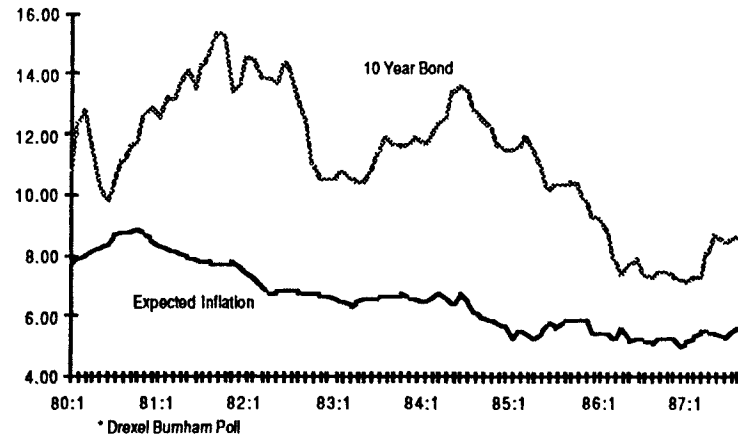
The one-year T-Bill rate also follows the trend rate of inflation. The increase in prices over the previous year is here used as a proxy for the expected inflation rate in the year ahead.

### 3-MONTH TREASURY BILL & INFLATION RATE\* (Percent)



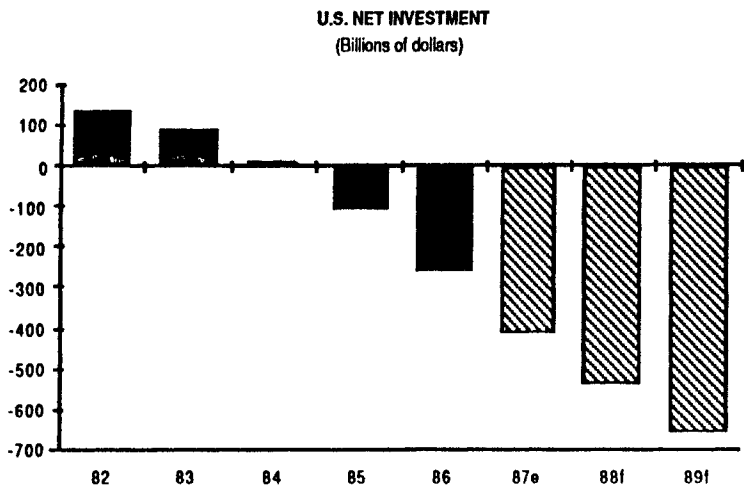
The 3-month T-Bill rate tends to track the 3-month inflation rate. With policy actions that allow inflation to increase, interest rates also move upward.

### 10 YEAR TREASURY BOND & EXPECTED INFLATION\* (Percent)

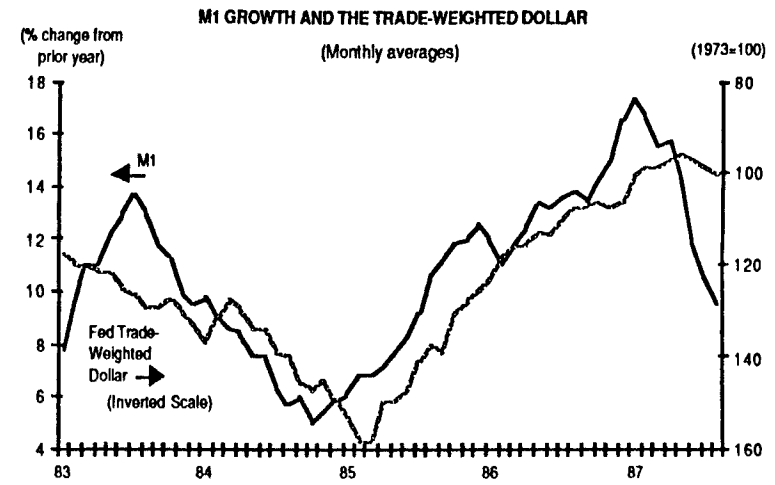


The spread of the 10-year bond rate over the inflation rate expected for the next ten years has been abnormally high over much of the 1980s. Some narrowing occurred in 1986, but renewed uncertainty has caused the difference to again widen in 1987.



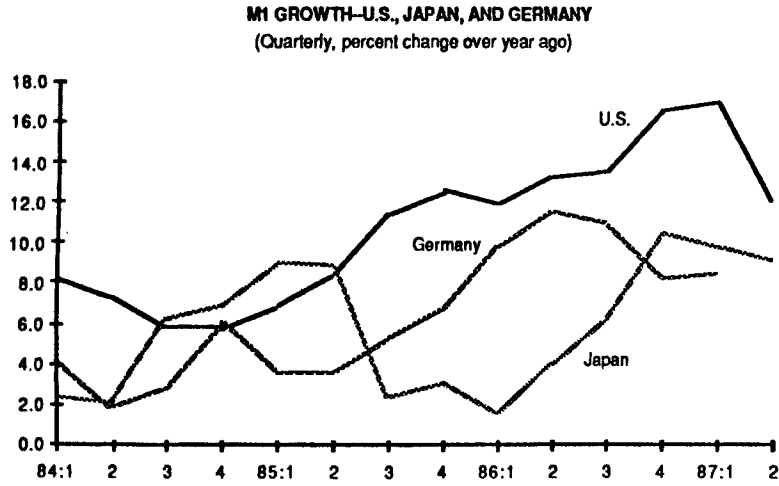


The net position of the U.S. in international investment markets turned negative in 1985 and 1986 after reaching a peak in 1981. For the first time since 1914, the U.S. became a net debtor, the largest debtor in the world. This trend will continue in 1987, 1988, and 1989.

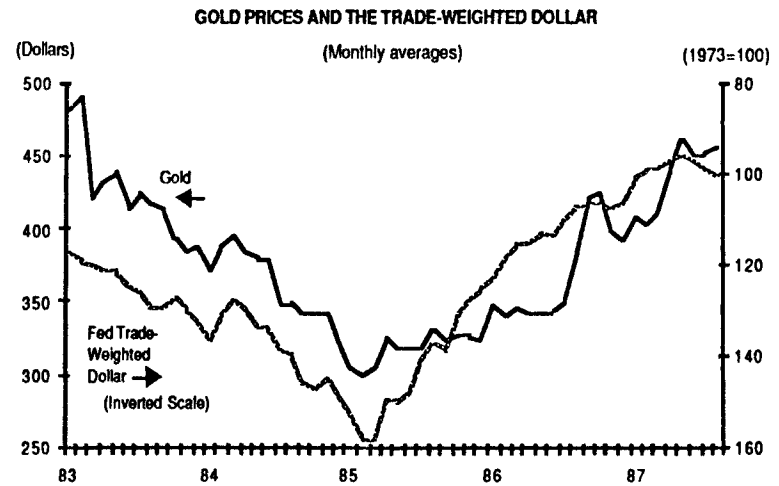


The Fed trade-weighted dollar on an inverted scale has been closely correlated with monthly M1 growth in the past four years. More rapid money growth in the U.S. has contributed to a weaker dollar.

38

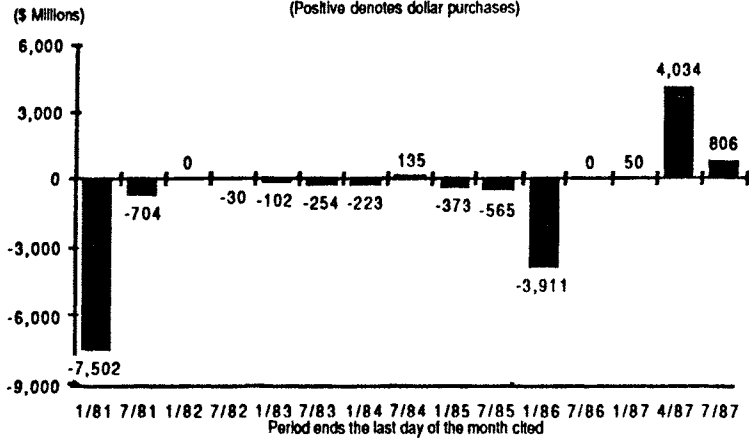


Monetary growth trends in Germany, Japan and the U.S. have followed similar patterns in the past four years. It is difficult for other countries to follow monetary policies independent of the U.S. because of the impact on their exchange rates and export sectors.



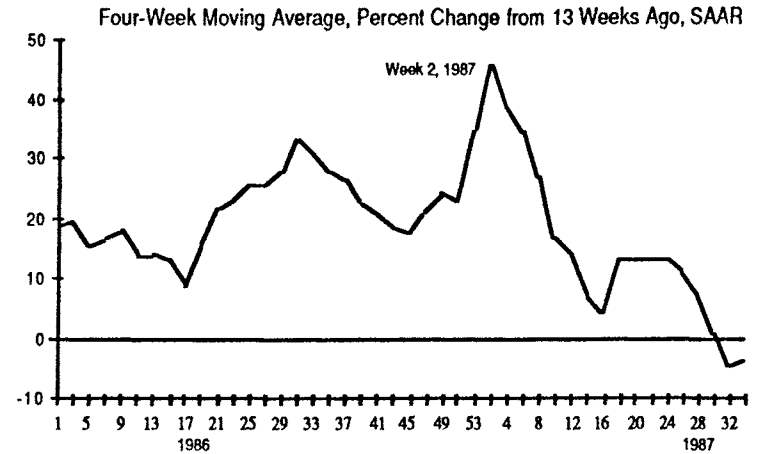
Monthly average gold prices and the trade-weighted dollar (inverted scale) have continued to move in tandem following a trough in early 1985. Expansive money growth and a declining dollar have driven gold prices higher.

**FEDERAL RESERVE DOLLAR INTERVENTION  
IN FOREIGN EXCHANGE MARKETS**  
(Positive denotes dollar purchases)



Dollar intervention in foreign exchange markets under most of the Reagan Administration has been minimal, with the exception of the latter portion of 1985 and the more recent interventions of 1987. In 1981 and 1985, the U.S. was selling dollars. In 1987, the U.S. has tried to support the currency.

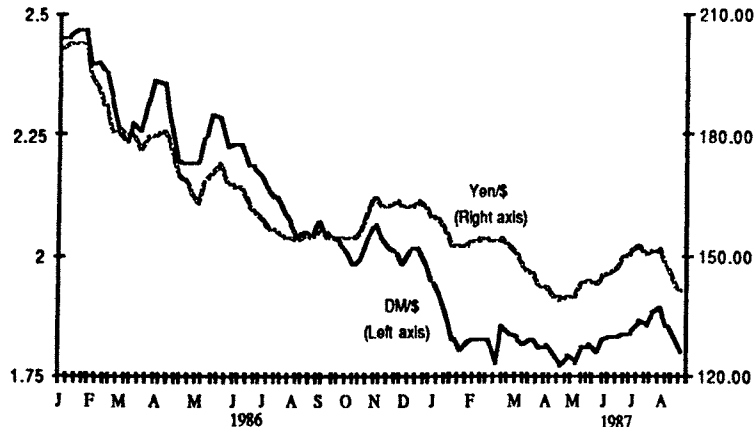
**GROWTH OF TOTAL BANK RESERVES**



Total bank reserves increased at an explosive rate during the first two weeks of 1987, on a four-week moving average basis. They then slowed abruptly over the next 14-week period and again in the most recent weeks, indicating a tightening by the Fed to support the dollar.

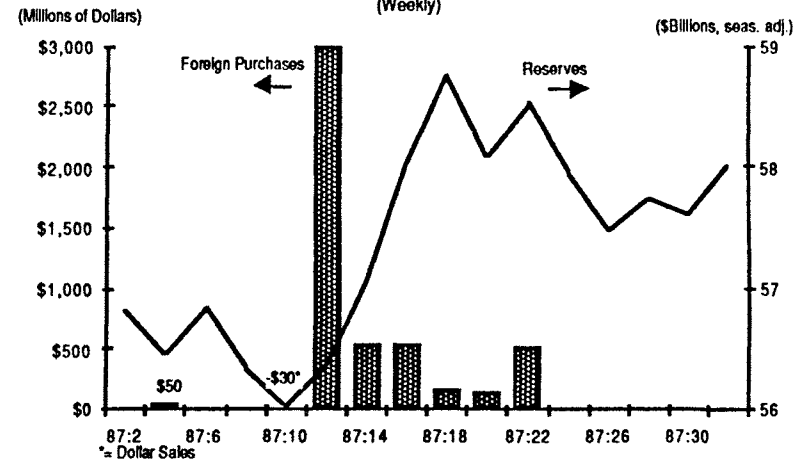
39

**EXCHANGE RATES - DM\$, YEN\$**  
(Weekly averages)



The dollar has generally trended lower against the yen and the DM throughout 1986 and 1987, with recent episodes of rapid decline causing turbulence in financial markets.

**U.S. BANK RESERVES AND FOREIGN EXCHANGE PURCHASES**  
(Weekly)



Heavy U.S. purchases of dollars starting late in March could have caused a contraction in bank reserves, but the official policy is "sterilization".

## 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/'88	1988	'88/'87	1989	'89/'88
GROSS NATIONAL PRODUCT (Billions of \$, annual rate)	4377.7	4447.7	4524.4	4615.1	4712.2	4807.7	4905.1	5004.3	5090.4	5167.5	5203.5	5250.8	4615.1	7.6	5004.3	8.4	5250.8	4.9
% Change, annual rate	8.6	6.6	7.1	8.3	8.7	8.4	8.4	8.3	7.1	6.2	2.8	3.7						
REAL GNP (Billions of 1982 \$, a.r.)	3772.2	3793.7	3824.6	3858.6	3894.7	3925.5	3952.7	3976.2	3986.1	3986.1	3955.9	3936.0	3858.6	3.4	3976.2	3.0	3936.0	-1.0
% Change, annual rate	4.4	2.3	3.3	3.6	3.8	3.2	2.8	2.4	1.0	0.0	-3.0	-2.0						
REAL FINAL DOMESTIC SALES (Billions of 1982 \$, a.r.)	3859.7	3889.3	3934.2	3966.7	3992.9	4017.3	4038.0	4061.2	4060.9	4064.3	4050.4	4020.9	3966.7	1.8	4061.2	2.4	4020.9	-1.0
% Change, annual rate	-3.8	3.1	4.7	3.3	2.7	2.5	2.1	2.3	0.0	0.3	-1.4	-2.9						
REAL CHANGE IN INVENTORIES (Billions of 1982 \$, a.r.)	47.6	37.8	16.0	10.0	17.0	20.0	23.0	18.0	24.0	16.0	-7.0	-2.0	10.0	N/A	18.0	N/A	-2.0	N/A
GNP DEFLATOR (1982=100)	116.1	117.2	118.3	119.6	121.0	122.5	124.1	125.9	127.7	129.6	131.5	133.4	119.6	4.1	125.9	5.2	133.4	6.0
% Change, annual rate	4.2	3.8	3.8	4.5	4.7	5.0	5.4	5.8	6.0	6.2	6.0	5.8						
CONSUMER PRICE INDEX (1967=100)	335.0	339.0	342.4	346.5	350.8	355.4	360.2	365.5	371.1	376.9	382.7	388.3	346.5	4.8	365.5	5.5	388.3	6.2
% Change, annual rate	5.3	4.9	4.1	4.9	5.0	5.3	5.6	6.0	6.2	6.5	6.2	6.0						
AUTO SALES (Millions, annual rate)	9.5	10.0	11.7	10.1	10.5	10.5	10.8	10.1	9.6	9.3	8.7	8.5	10.3 *	-9.8	10.5 *	1.5	9.0 *	-13.8
HOUSING STARTS (Millions, annual rate)	1.79	1.62	1.61	1.60	1.60	1.58	1.57	1.50	1.38	1.35	1.37	1.50	1.65 *	-8.4	1.56 *	-5.5	1.40 *	-10.4
INDUSTRIAL PRODUCTION (1977=100)	127.0	128.2	129.9	131.4	133.1	134.5	135.7	136.6	136.9	136.4	134.3	132.7	131.4	4.3	136.6	3.9	132.7	-2.9
% Change, annual rate	3.2	3.7	5.5	4.7	5.1	4.4	3.5	2.8	0.7	-1.4	-5.9	-4.8						
NONFARM EMPLOYMENT (Millions)	101.1	101.7	102.3	103.1	103.8	104.5	105.2	105.8	106.3	106.6	106.5	106.3	103.1	2.7	105.8	2.6	106.3	0.5
UNEMPLOYMENT RATE, ALL WORKERS (Percent)	6.6	6.1	6.0	5.9	5.8	5.8	5.7	5.8	6.0	6.2	6.6	7.0	5.9	N/A	5.8	N/A	7.0	N/A
CORPORATE OPERATING PROFITS (Billions of \$, annual rate)	284.0	296.5	298.0	300.0	305.0	307.0	308.0	309.0	309.0	306.0	302.0	299.0	300.0	6.7	309.0	3.0	299.0	-3.2
% Change over year ago	2.1	5.0	4.1	6.7	3.7	3.5	3.4	3.0	1.3	-0.3	-1.9	-3.2						
NET CASH FLOW (Billions of \$, annual rate)	378.7	384.6	386.5	391.0	393.0	397.0	398.0	399.0	399.0	396.0	392.0	389.0	391.0	3.8	399.0	2.0	389.0	-2.5
% Change over year ago	3.9	5.9	4.2	3.8	3.8	3.2	3.0	2.0	1.5	-0.3	-1.5	-2.5						
MONETARY BASE (Billions of \$, a.r.)	243.7	247.8	250.8	254.8	259.5	263.3	267.8	272.7	276.0	277.4	280.8	285.6	254.8	7.6	272.7	7.0	285.6	4.7
% Change, annual rate	11.8	7.0	5.0	6.5	7.5	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; e = estimate.

\*Annual total; N/A = Not applicable.

**Tables**

H. Erich HEINEMANN  
Moseley Securities Corporation

11-Sep-87

Table 1 - Part 1

## Federal Reserve Action and Monetary Growth

(\$ Billions)

Date	(1) Monetary Base	(2) Currency	(3) Total Adjusted Bank Reserves	(4) Demand Deposits	(5) Savings & Small Time Deposits*	(6) Large Time Deposits	(7) Non- deposit Liabil.	(8) Foreign Deposits	(9) Treasury Deposits	(10) Total Deposits
Jan 1985	218.6	159.5	59.1	397.4	787.8	267.1	171.1	10.9	18.5	1652.0
Feb	221.2	160.6	60.6	403.8	795.2	267.4	175.6	10.8	15.8	1668.6
Mar	221.5	161.3	60.2	406.3	799.3	272.2	178.3	9.7	12.8	1678.6
Apr	222.1	161.9	60.2	409.2	802.6	276.8	170.6	9.6	15.4	1684.2
May	224.2	163.1	61.1	413.5	806.6	274.8	173.0	10.1	20.9	1698.9
Jun	225.7	164.5	61.2	420.3	816.9	272.9	170.1	10.0	14.9	1705.1
Jul	227.4	165.3	62.1	425.0	822.8	270.3	168.0	10.2	23.1	1719.4
Aug	229.6	166.9	62.7	431.3	826.0	272.6	173.0	10.1	13.4	1726.4
Sep	230.8	167.8	63.0	437.8	828.7	276.6	174.5	10.7	16.9	1745.2
Oct	232.0	168.7	63.3	439.5	831.6	280.3	173.8	10.5	5.4	1741.1
Nov	233.0	169.9	63.1	443.7	836.1	282.3	176.3	10.6	7.8	1756.8
Dec	234.9	170.6	64.3	450.5	841.0	284.1	179.0	10.7	14.5	1779.8
Jan 1986	235.7	171.8	63.9	451.2	847.6	292.9	178.6	11.0	24.1	1805.4
Feb	237.7	172.7	65.0	453.4	849.1	294.8	183.4	10.1	24.3	1815.1
Mar	238.7	173.8	64.9	460.6	854.0	292.7	187.3	10.1	15.8	1820.5
Apr	239.9	174.4	65.5	467.6	859.7	293.5	185.3	10.6	17.9	1834.6
May	242.3	175.8	66.5	477.7	862.8	289.9	184.1	10.8	21.7	1847.0
Jun	243.4	176.7	66.7	484.6	869.0	289.4	180.1	11.1	16.1	1850.3
Jul	245.7	177.6	68.1	492.7	873.8	289.5	183.2	11.6	16.8	1867.6
Aug	247.7	179.0	68.7	501.6	878.8	290.1	185.9	11.2	11.1	1878.7
Sep	248.7	179.7	69.0	506.9	884.1	289.8	189.8	11.7	18.2	1900.5
Oct	250.8	181.2	69.6	513.8	888.4	288.3	189.8	11.8	15.2	1907.3
Nov	252.8	182.4	70.4	523.7	892.0	290.0	192.9	11.7	15.3	1925.6
Dec	255.3	183.5	71.8	540.6	898.2	291.8	195.2	11.7	19.2	1956.7
Jan 1987	258.9	186.0	72.9	545.2	906.2	295.7	201.7	12.2	27.5	1988.5
Feb	259.0	187.2	71.8	543.7	905.5	296.0	200.8	11.6	28.5	1986.1
Mar	260.1	187.7	72.4	545.0	906.5	299.0	197.4	11.2	17.1	1976.2
Apr	262.2	188.9	73.3	554.6	905.1	305.9	195.8	11.6	21.6	1994.6
May	263.4	190.2	73.2	556.1	900.5	310.7	199.6	11.7	30.8	2009.4
Jun	263.4	191.1	72.3	548.6	903.2	314.9	199.6	11.8	25.4	2003.5
Jul	264.3	192.1	72.2	548.7	905.2	313.5	193.8	11.7	26.6	1999.5
Aug P	266.2	193.2	73.0	550.8	907.3	313.6	205.1	11.4	21.6	2009.8

\* Includes Money Market Deposit Accounts

\*\* (4+5+6+7+8+9)

Source: Federal Reserve Board; Heinemann Economic Research

Table 1 - Part 2

## Federal Reserve Action and Monetary Growth

Date	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Adjusted Reserve Ratio	Currency Ratio	Savings & Small Time Deposit Ratio	Large Time Deposit Ratio	Non- deposit Liabil. Ratio	Foreign Deposit Ratio	Treasury Deposit Ratio	Money Multi- plier
	(3/10)	(2/4)	(5/4)	(6/4)	(7/4)	(8/4)	(9/4)	(2+4/1)
Jan 1985	0.0358	0.4014	1.9824	0.6721	0.4305	0.0274	0.0466	2.5476
Feb	0.0363	0.3977	1.9693	0.6622	0.4349	0.0267	0.0391	2.5515
Mar	0.0359	0.3970	1.9673	0.6699	0.4388	0.0239	0.0315	2.5625
Apr	0.0357	0.3957	1.9614	0.6764	0.4169	0.0235	0.0376	2.5714
May	0.0360	0.3944	1.9507	0.6646	0.4184	0.0244	0.0505	2.5718
Jun	0.0359	0.3914	1.9436	0.6493	0.4047	0.0238	0.0355	2.5911
Jul	0.0361	0.3889	1.9360	0.6360	0.3953	0.0240	0.0544	2.5959
Aug	0.0363	0.3870	1.9151	0.6320	0.4011	0.0234	0.0311	2.6054
Sep	0.0361	0.3833	1.8929	0.6318	0.3986	0.0244	0.0386	2.6239
Oct	0.0364	0.3838	1.8922	0.6378	0.3954	0.0239	0.0123	2.6216
Nov	0.0359	0.3829	1.8844	0.6362	0.3973	0.0239	0.0176	2.6335
Dec	0.0361	0.3787	1.8668	0.6306	0.3973	0.0238	0.0322	2.6441
Jan 1986	0.0354	0.3808	1.8785	0.6492	0.3958	0.0244	0.0534	2.6432
Feb	0.0358	0.3809	1.8727	0.6502	0.4845	0.0223	0.0536	2.6340
Mar	0.0356	0.3773	1.8541	0.6355	0.4066	0.0219	0.0343	2.6577
Apr	0.0357	0.3730	1.8385	0.6277	0.3963	0.0227	0.0383	2.6761
May	0.0360	0.3680	1.8062	0.6069	0.3854	0.0226	0.0454	2.6971
Jun	0.0360	0.3646	1.7932	0.5972	0.3716	0.0229	0.0332	2.7169
Jul	0.0365	0.3605	1.7735	0.5876	0.3718	0.0235	0.0341	2.7281
Aug	0.0366	0.3569	1.7520	0.5783	0.3706	0.0223	0.0221	2.7477
Sep	0.0363	0.3545	1.7441	0.5717	0.3744	0.0231	0.0359	2.7608
Oct	0.0365	0.3527	1.7291	0.5611	0.3694	0.0230	0.0296	2.7711
Nov	0.0366	0.3483	1.7033	0.5538	0.3683	0.0223	0.0292	2.7931
Dec	0.0367	0.3394	1.6615	0.5398	0.3611	0.0216	0.0355	2.8363
Jan 1987	0.0367	0.3412	1.6621	0.5424	0.3700	0.0224	0.0504	2.8243
Feb	0.0362	0.3443	1.6654	0.5444	0.3693	0.0213	0.0524	2.8220
Mar	0.0366	0.3444	1.6633	0.5486	0.3622	0.0206	0.0314	2.8170
Apr	0.0367	0.3406	1.6320	0.5516	0.3530	0.0209	0.0389	2.8356
May	0.0364	0.3420	1.6193	0.5587	0.3589	0.0210	0.0554	2.8333
Jun	0.0361	0.3483	1.6464	0.5740	0.3638	0.0215	0.0463	2.8083
Jul	0.0361	0.3501	1.6497	0.5714	0.3532	0.0213	0.0485	2.8029
Aug P	0.0363	0.3508	1.6472	0.5694	0.3724	0.0207	0.0392	2.7949

Source: Federal Reserve Board; Heinemann Economic Research

Table 1 - Part 3

## Federal Reserve Action and Monetary Growth

This is accounted for by changes in the:

Date	Monetary Growth (M-1)	Federal Reserve Actions (Monetary Base Growth)	Contribution of the Money Multiplier	This is accounted for by changes in the:						
				Adjusted Reserve Ratio	Currency Ratio	Savings & Small Time Deposit Ratio	Large Time Deposit Ratio	Non-Deposit Liability Ratio	Foreign Deposit Ratio	Treasury Deposit Ratio
Jan 1985	10.5	11.0	-0.6	-1.4	1.8	-1.0	1.2	0.3	0.0	-1.4
Feb	17.4	15.2	2.2	-5.1	5.1	1.1	0.8	-0.3	0.1	0.6
Mar	7.0	1.6	5.4	4.3	1.0	0.2	-0.6	-0.3	0.2	0.6
Apr	7.7	3.3	4.4	1.1	1.9	0.5	-0.5	1.8	0.0	-0.5
May	12.2	12.0	0.2	-1.8	1.5	0.8	0.9	-0.1	-0.1	-0.9
Jun	18.5	8.3	10.1	0.7	4.8	0.6	1.4	1.2	0.1	1.4
Jul	11.9	9.4	2.5	-2.1	3.6	0.6	1.1	0.8	-0.0	-1.6
Aug	17.3	12.2	5.0	-2.0	3.1	1.9	0.4	-0.5	0.1	2.1
Sep	15.9	6.5	9.4	2.2	5.8	2.0	0.0	0.2	-0.1	-0.7
Oct	5.3	6.4	-1.1	-2.6	-0.9	0.1	-0.5	0.3	0.1	2.4
Nov	11.2	5.3	5.9	4.3	1.4	0.7	0.1	-0.2	0.0	-0.5
Dec	15.7	10.2	5.5	-2.0	6.7	1.6	0.5	0.0	0.0	-1.3
Jan 1986	3.7	4.2	-0.4	27.7	-11.5	-3.8	-6.1	0.5	-0.2	-7.0
Feb	6.1	10.7	-4.5	-4.1	-0.2	0.5	-0.1	-0.8	0.2	-0.0
Mar	17.1	5.2	12.0	1.6	5.7	1.7	1.3	-0.2	0.0	1.7
Apr	15.4	6.2	9.2	-0.5	7.1	1.4	0.7	0.9	-0.1	-0.4
May	23.7	12.7	11.1	-3.1	8.7	3.1	2.0	1.0	0.0	-0.7
Jun	15.3	5.6	9.7	-0.4	5.7	1.2	0.9	1.3	-0.0	1.1
Jul	17.6	11.9	5.7	-4.0	7.1	1.9	0.9	-0.0	-0.1	-0.1
Aug	20.1	10.2	9.9	-1.1	6.4	2.1	0.9	0.1	0.1	1.2
Sep	11.1	5.0	6.2	2.6	3.9	0.7	0.6	-0.4	-0.1	-1.3
Oct	15.7	10.6	5.1	-1.9	3.3	1.5	1.1	0.5	0.0	0.6
Nov	20.9	10.0	10.9	-0.7	8.1	2.6	0.7	0.1	0.1	0.0
Dec	35.3	12.5	22.7	-1.4	18.0	4.5	1.5	0.8	0.1	-0.7
Jan 1987	12.4	18.3	-5.9	0.4	-3.2	-0.1	-0.3	-1.0	-0.1	-1.6
Feb	-0.5	0.5	-1.0	6.4	-6.7	-0.4	-0.3	0.1	0.1	-0.2
Mar	3.0	5.2	-2.2	-4.8	-0.2	0.2	-0.4	0.7	0.1	2.1
Apr	19.2	10.1	9.1	-1.1	7.1	3.3	-0.3	0.9	-0.0	-0.8
May	4.6	5.6	-1.0	3.5	-2.7	1.4	-0.8	-0.6	-0.0	-1.8
Jun	-10.1	0.0	-10.1	3.2	-9.8	-2.5	-1.4	-0.5	-0.0	0.8
Jul	1.8	4.2	-2.4	-0.2	-2.9	-0.3	0.3	1.0	0.0	-0.2
Aug P	5.3	9.0	-3.7	-2.1	-1.1	0.2	0.2	-1.9	0.1	0.9
	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983
	9.56	9.35	0.21	2.29	-0.80	-2.10	1.21	-0.45	0.03	0.02
	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984
	5.87	7.15	-1.28	-0.01	-0.65	-0.41	-0.49	0.30	0.00	-0.03
	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985
	12.54	8.47	4.07	-0.37	2.98	0.75	0.39	0.26	0.03	0.03
	1986	1986	1986	1986	1986	1986	1986	1986	1986	1986
	16.84	8.73	8.11	1.21	5.18	1.46	0.37	0.32	0.01	-0.44
	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987
	4.47	6.61	-2.15	0.65	-2.45	0.23	-0.37	-0.14	0.01	-0.09

Source: Federal Reserve Board; Heinemann Economic Research

Table 1 - Part 3

## Federal Reserve Action and Monetary Growth

Date	THREE-MONTH MOVING AVERAGES									
	Monetary Growth (M-1)	Federal Reserve Actions (Monetary Base Growth)	Contribution of the Money Multiplier	Adjusted Reserve Ratio	Currency Ratio	Savings & Small Time Deposit Ratio	Large Time Deposit Ratio	Non-Deposit Liability Ratio	Foreign Deposit Ratio	Treasury Deposit Ratio
Jan 1985	9.43	6.53	2.90	1.63	1.83	-0.90	0.75	0.13	-0.01	-0.53
Feb	12.49	9.70	2.79	-0.80	3.30	-0.27	0.80	0.10	0.05	-0.40
Mar	11.63	9.31	2.32	-0.73	2.62	0.06	0.44	-0.13	0.11	-0.06
Apr	10.70	6.73	3.97	0.13	2.66	0.57	-0.12	0.39	0.11	0.24
May	8.95	5.63	3.32	1.21	1.47	0.48	-0.10	0.46	0.07	-0.27
Jun	12.77	7.86	4.91	0.02	2.73	0.63	0.57	0.98	0.01	-0.07
Jul	14.18	9.90	4.28	-1.07	3.30	0.69	1.12	0.64	-0.01	-0.39
Aug	15.88	10.00	5.88	-1.14	3.84	1.07	0.96	0.50	0.03	0.63
Sep	15.03	9.38	5.65	-0.66	4.17	1.52	0.51	0.17	-0.02	-0.04
Oct	12.82	8.37	4.45	-0.80	2.67	1.33	-0.05	-0.01	0.00	1.30
Nov	10.79	6.06	4.73	1.31	2.09	0.92	-0.13	0.12	-0.01	0.44
Dec	10.72	7.32	3.40	-0.10	2.41	0.77	0.03	0.04	0.02	0.23
Jan 1986	10.21	6.57	3.64	4.97	-1.14	-0.53	-1.81	0.11	-0.06	-2.90
Feb	8.52	8.36	0.16	7.16	-1.68	-0.59	-1.89	-0.09	-0.00	-2.75
Mar	9.00	6.67	2.33	8.38	-2.00	-0.55	-1.61	-0.16	0.00	-1.74
Apr	12.87	7.35	5.53	-1.02	4.20	1.20	0.64	-0.01	0.05	0.46
May	18.74	8.02	10.72	-0.67	7.16	2.07	1.34	0.59	-0.01	0.24
Jun	18.14	8.16	9.98	-1.35	7.14	1.91	1.20	1.08	-0.03	0.03
Jul	18.89	10.07	8.81	-2.52	7.14	2.06	1.26	0.77	-0.03	0.13
Aug	17.66	9.25	8.41	-1.84	6.39	1.74	0.91	0.46	0.01	0.75
Sep	16.27	9.04	7.23	-0.84	5.82	1.58	0.81	-0.09	-0.00	-0.06
Oct	15.63	8.60	7.04	-0.12	4.54	1.46	0.87	0.09	0.02	0.18
Nov	15.92	8.52	7.40	0.00	5.09	1.62	0.81	0.08	0.00	-0.21
Dec	23.97	11.05	12.92	-1.33	9.77	2.88	1.09	0.46	0.05	0.00
Jan 1987	22.88	13.61	9.27	-0.59	7.60	2.35	0.65	-0.03	0.02	-0.75
Feb	15.73	10.43	5.30	1.78	2.70	1.34	0.32	-0.04	0.04	-0.84
Mar	4.98	7.99	-3.02	0.66	-3.36	-0.09	-0.32	-0.05	0.04	0.09
Apr	7.23	5.27	1.96	0.16	0.10	1.02	-0.33	0.58	0.06	0.37
May	8.93	6.99	1.94	-0.82	1.43	1.62	-0.50	0.34	0.01	-0.13
Jun	4.57	5.25	-0.69	1.83	-1.77	0.72	-0.83	-0.05	-0.03	-0.56
Jul	-1.23	3.27	-4.50	2.14	-5.12	-0.47	-0.64	-0.03	-0.01	-0.38
Aug P	-1.00	4.38	-5.39	0.30	-4.61	-0.85	-0.32	-0.43	0.01	0.52

Source: Federal Reserve Board; Heinemann Economic Research



Federal Reserve Action and Monetary Growth

(Memo)

	Reserve Growth Rate Month to Month	Reserve Growth Three-month Moving Average
Jan 1985	20.22	6.75
Feb	35.09	17.76
Mar	-7.64	15.89
Apr	0.00	9.15
May	19.49	3.95
Jun	1.98	7.16
Jul	19.15	13.54
Aug	12.23	11.12
Sep	5.90	12.42
Oct	5.87	8.00
Nov	-3.73	2.68
Dec	25.37	9.17
Jan 1986	-7.21	4.81
Feb	22.73	13.63
Mar	-1.83	4.56
Apr	11.68	10.86
May	19.94	9.93
Jun	3.67	11.76
Jul	28.31	17.31
Aug	11.10	14.36
Sep	5.37	14.93
Oct	10.95	9.14
Nov	14.70	10.34
Dec	26.65	17.43
Jan 1987	20.02	20.46
Feb	-16.68	10.00
Mar	10.50	4.61
Apr	15.98	3.27
May	-1.62	8.29
Jun	-13.80	0.19
Jul	-1.65	-5.69
Aug P	14.14	-0.44
	1983	
	7.17	
	1984	
	8.93	
	1985	
	11.16	
	1986	
	12.17	
	1987	
	3.36	
	1987	
	3.36	

Source: Federal Reserve Board: Hein