Prefatory Note

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[1] In some cases, original copies needed to be photocopied before being scanned into electronic format. All scanned images were deskewed (to remove the effects of printer- and scanner-introduced tilting) and lightly cleaned (to remove dark spots caused by staple holes, hole punches, and other blemishes caused after initial printing).

[2] A two-step process was used. An advanced optimal character recognition computer program (OCR) first created electronic text from the document image. Where the OCR results were inconclusive, staff checked and corrected the text as necessary. Please note that the numbers and text in charts and tables were not reliably recognized by the OCR process and were not checked or corrected by staff.

MONETARY POLICY ALTERNATIVES

PREPARED FOR THE FEDERAL OPEN MARKET COMMITTEE
BY THE STAFF OF THE BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

Strictly Confidential (F.R.) January 28, 2000
Class I -- FOMC

MONETARY POLICY ALTERNATIVES

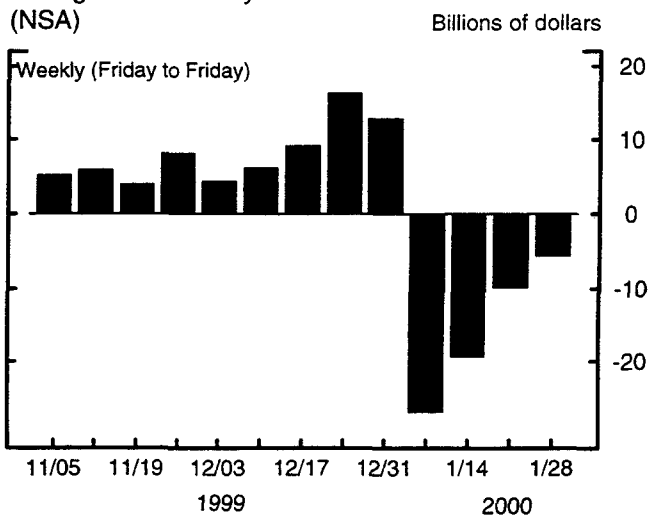
Recent Developments

(1) In the days immediately after the December FOMC meeting, the Trading Desk continued to conduct a large volume of open market operations, particularly forward and term repurchase agreements, that brought total repurchase agreements outstanding to $141 billion by the end of the year. These operations were necessary to offset reserve drains induced by buildups in currency in circulation, the Treasury's balance at the Federal Reserve, and the pool of temporary investment orders from foreign central banks. On several days before year-end, the federal funds rate was below target when the Desk entered the market, leading some observers to conjecture that the Federal Reserve was "flooding the market with liquidity" as insurance against potential Y2K problems. On these days, the funds rate tended to firm in late trading when aggregate reserve supply proved to be less plentiful than market participants had thought. Since the turn of the year, a bit more than three-quarters of the Y2K bulge in currency has flowed back to the Federal Reserve and other factors have returned to more typical levels. The Desk mopped up these additions to reserves by allowing repurchase agreements to mature without replacement and by arranging several matched sale-purchase transactions. Operating balances reached very low levels on some days, and funds rate volatility was elevated, but, in general, the effective rate has been close to the target since the turn of the year.[1] Borrowing from the Special Liquidity Facility was

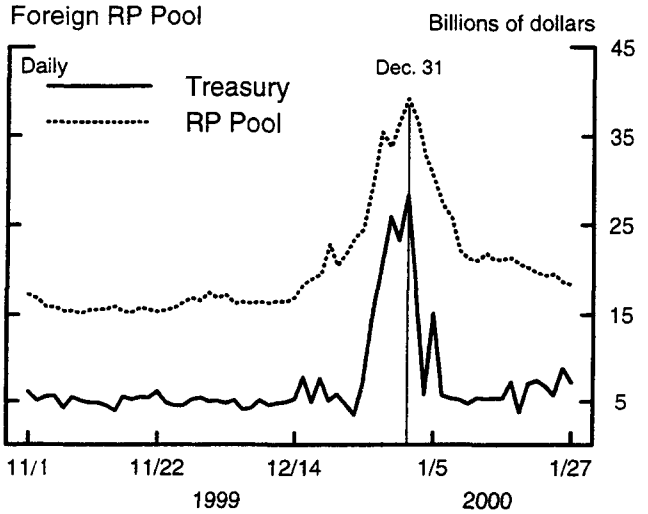
1. Over the entire intermeeting period, the effective funds rate averaged 5.29 percent.

Chart 1

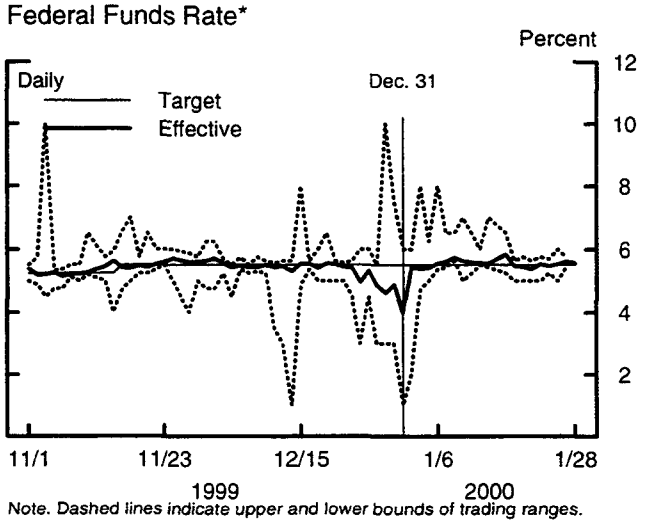
Changes in Currency in Circulation (NSA)



Treasury Balance at the Federal Reserve and Foreign RP Pool

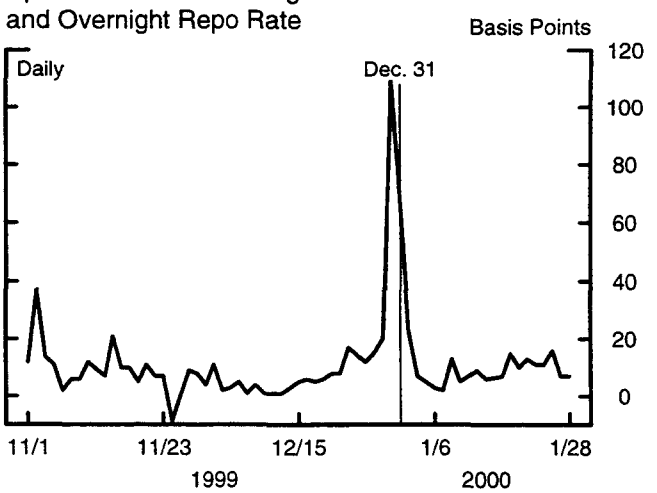


Federal Funds Rate*

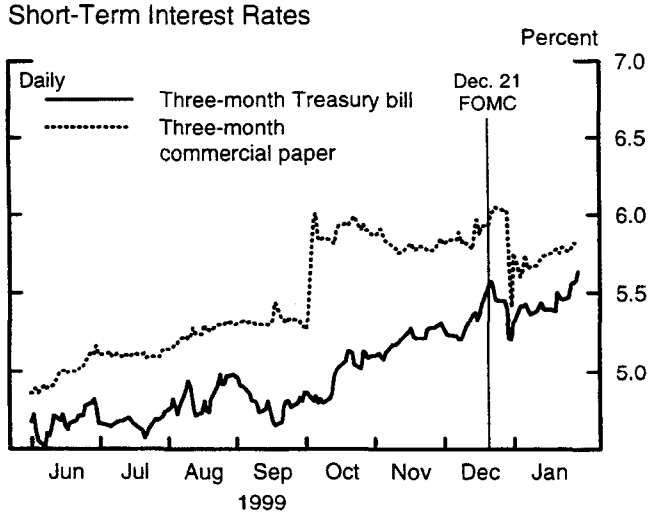


Note. Dashed lines indicate upper and lower bounds of trading ranges.

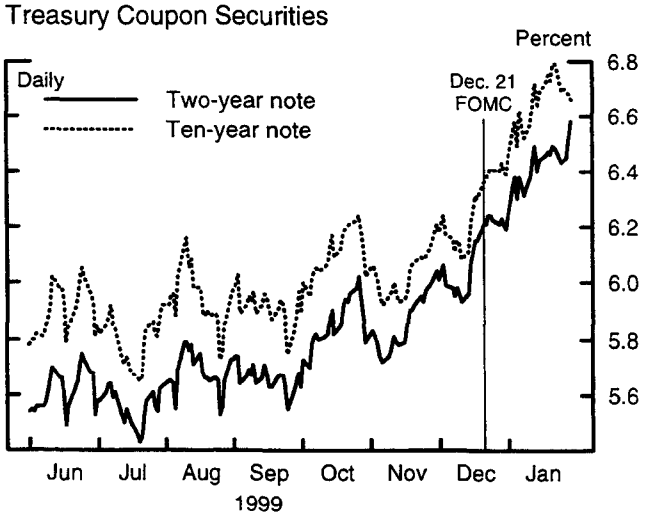
Spread Between Morning Federal Funds Rate and Overnight Repo Rate



Short-Term Interest Rates



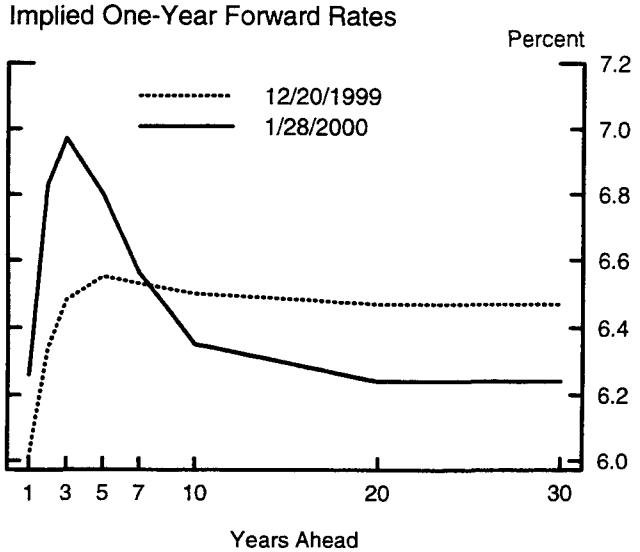
Treasury Coupon Securities



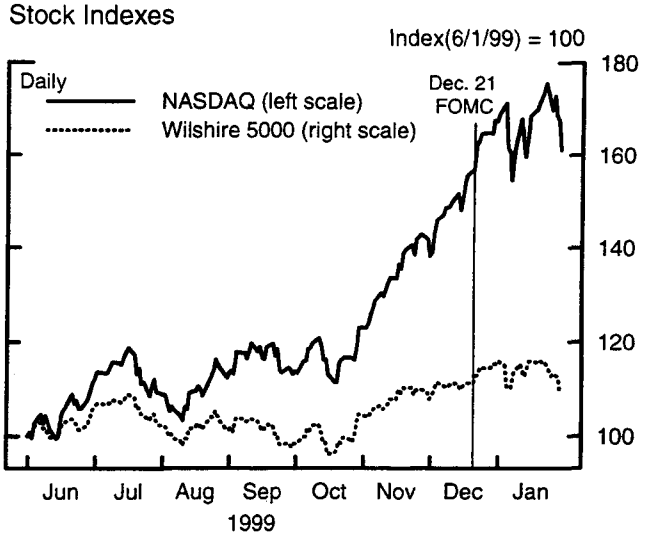
MFMA:ECA

Chart 2

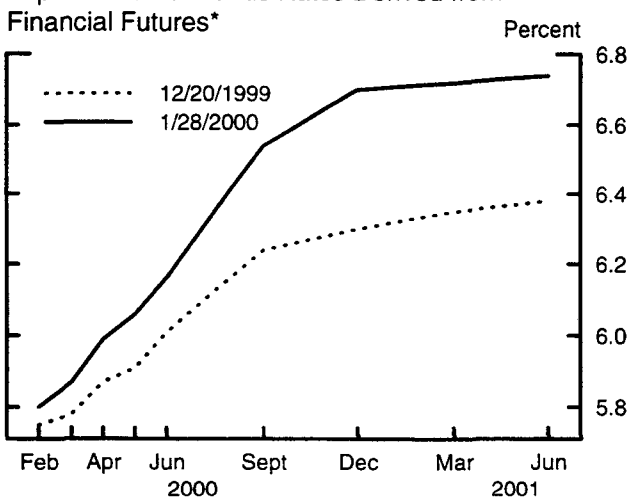
Implied One-Year Forward Rates



Stock Indexes

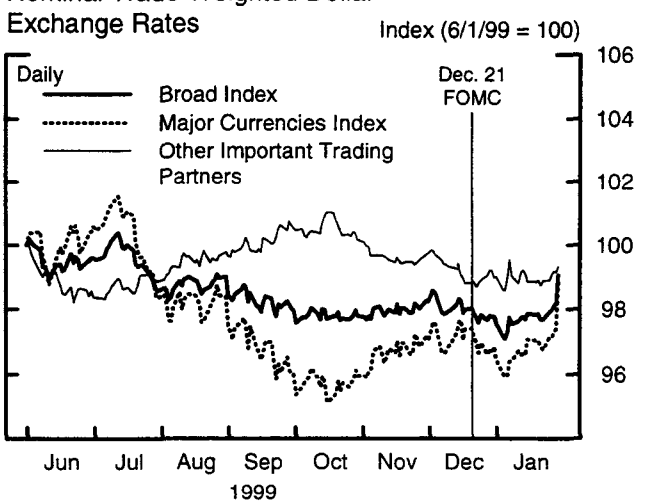


Implied Federal Funds Rates Derived from Financial Futures*

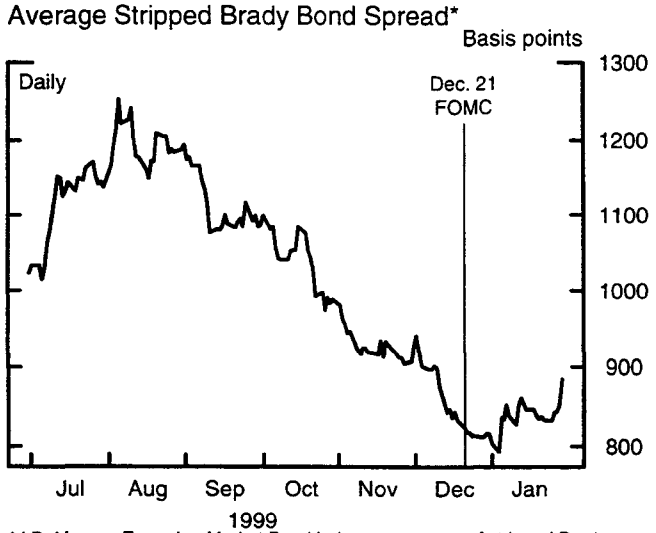


*Estimates from federal funds and eurodollar futures rates with an allowance for term premia and other adjustments.

Nominal Trade-Weighted Dollar Exchange Rates

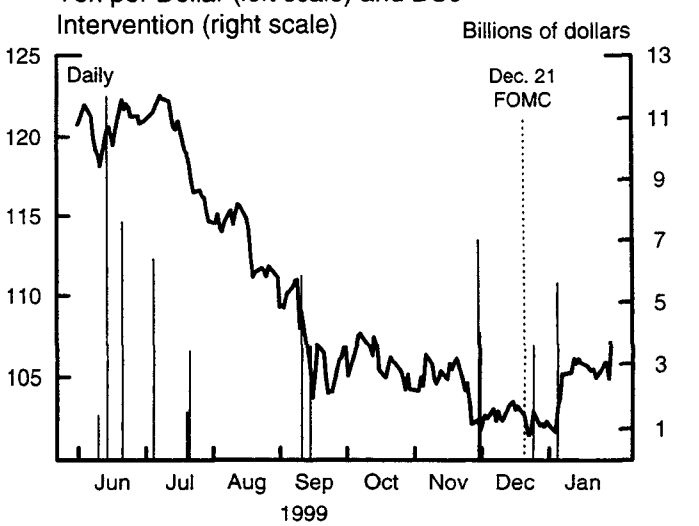


Average Stripped Brady Bond Spread*



*J.P. Morgan Emerging Market Bond Index, an average of stripped Brady bond yield spreads over Treasuries for ten emerging market countries.

Yen per Dollar (left scale) and BOJ Intervention (right scale)



MFMA:ECA

substantial on only two days over the intermeeting period, and none of the options auctioned under the Special Financing Facility was exercised. In general, financial markets weathered the turn of the year well, reflecting in part the cumulative effect of Federal Reserve initiatives to stave off potential Y2K dislocations. Although the RP rate on Treasury collateral dipped well below the funds rate and bid-asked spreads in the RP and funds market spiked around year-end, they quickly returned to more normal configurations. Activity in the markets for Treasury and corporate securities dropped as year-end approached and subsequently recovered, but the magnitude of the swings did not differ much from other year-end periods.

(2) Market participants generally anticipated both the FOMC's decision at the December meeting to leave the stance of policy unchanged and the announcement's implication that the Committee would be inclined to tighten in February; hence, yields on coupon securities showed little change that day. Against the background of the Federal Reserve's expression of concern about the unsustainable pace of economic expansion and the uneventful passing of the century date change, evidence that aggregate demand retained considerable momentum pressured market interest rates higher over most of the intermeeting period. Today, after publication of unexpectedly high readings on compensation and GDP inflation, most Treasury yields initially rose and private security prices tumbled. However, as risk spreads widened, the dollar strengthened, and equity prices fell, something of a flight to quality ensued and Treasury yields reversed course. On balance, yields on Treasury notes have risen 30 to 40 basis points since the last FOMC meeting, while the yield on the thirty-year bond is unchanged, and the yield curve now slopes downward

past the five-year maturity. Expectations of changes in relative supplies associated with agency issuance and the Treasury buyback program and technical factors relating to efforts to rebalance portfolios contributed to the pivoting of the yield curve. Even with today's widening of risk spreads, yields on investment grade corporate bonds rose less than Treasury yields, especially after market participants saw that the century date change had passed without serious dislocations. Most risk spreads have now more than reversed their runup last summer, though they generally remain well above their levels prior to autumn of 1998.[2] Stock prices were quite volatile over the intermeeting period, with tech stocks and other shares often exhibiting disparate movements day-by-day. Reflecting the countervailing influences of stronger-than-expected earnings but generally rising interest rates, broad stock price indexes fell slightly on balance while tech-heavy indexes rose sharply.

(3) The foreign exchange value of the dollar had shown little net change over the intermeeting period against indexes of both major foreign currencies and those of other important trading partners. Today, however, the dollar appreciated 1-1/2 percent against major foreign currencies, as expectations built for more substantial Federal Reserve tightening. On net over the intermeeting period, the dollar gained 4-1/4 percent against the yen and 3 percent relative to the euro, but it depreciated around 1 percent vis-a-vis the British pound and 2 percent against the Canadian dollar. Long-term interest rates in industrial countries–with the notable exception of Japan–rose appreciably, boosted by

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2. However, banks report continued net tightening in terms and standards for business loans.

evidence that the economic expansion in Europe had found firmer footing. Against that backdrop, market participants became increasingly confident that policy tightening would be forthcoming. Indeed, judging by money market futures, expectations are for official rate hikes by the European Central Bank of about 1 percentage point over the next year, only a little less than for the United States. The Bank of England actually tightened, citing concerns about inflation pressures as justification for a 1/4 percentage point increase in its repurchase rate on January 13. In Japan, in sharp contrast, market participants apparently saw little news in recent weeks to lead them to believe that the Bank of Japan will change its zero-interest-rate policy any time soon as economic recovery there continues to proceed in fits and starts. Japanese long-term yields edged lower over the intermeeting period, supporting the dollar. Japanese monetary authorities intervened to weaken the yen on two days early in the period.

; U.S. monetary authorities did not intervene. Financial market conditions in emerging market economies generally improved further over the intermeeting period, with sovereign debt spreads narrowing and equity prices rising.

(4) M2 growth rose to a 7-1/4 percent annual rate in December and edged up further to an 8-1/4 percent pace in January.[3] Growth over the two months was above that expected at the time of the December Committee meeting. Extra demands for liquidity and

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3. Money stock data incorporate revisions from the annual benchmark and seasonal review and are strictly confidential until their release on February 3.

safety may have added a little to M2 growth in December and, through the monthly averaging process, to January as well. However, there were more substantial, though largely offsetting, influences on M2 components. Currency in the hands of the public expanded rapidly in the second half of December, and, as depositors exchanged money in the bank for money in their pockets, liquid deposits in M2 weakened. In January, the public ran down its currency holdings, but at a gradual rate, and liquid deposits have rebounded in recent weeks.

(5) M3 was more affected by Y2K positioning than M2. Issuance of large time deposits exploded in the fourth quarter of 1999 for several reasons: Banks wanted to build up their liquid assets, many faced very high credit demands that needed to be funded, and institutional depositors saw banks as safe harbors in which to ride out the century date change. In addition, institutional money funds surged because firms viewed them as convenient parking places for some of their extra precautionary liquid balances. Overall, M3 growth reached an annual rate of 16-1/2 percent in December. A pronounced deceleration in large time deposits helped bring the growth of M3 in January down to 8-3/4 percent. Banks have seen demands for credit ease considerably in January, especially in the components (business and security loans) most likely to have been affected by Y2K.[4]

(6) Total domestic nonfinancial debt is estimated to have grown 6-1/4 percent in the fourth quarter of 1999, including a growth rate of 7 percent in December. To some

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4. Responses to the January Senior Loan Officer Survey suggest that the buildup in security loans in late 1999 was the result of securities dealers turning to banks as the cost of issuing commercial paper climbed and as other institutional lenders pulled back from this market temporarily. For business loans, respondent banks tended to downweight Y2K as a reason for the strength late last year, referring instead to merger and acquisition financing and investment expenditures.

extent, borrowing was boosted late in the year by desires to build liquid assets. This was clearly the case for the federal sector, as the runoff in debt came to a temporary halt in December to allow the Treasury to build up its cash balance. Paydowns resumed in January and included the redemption of $54 billion in cash management bills. Nonfederal debt is estimated to have increased at an 8-1/2 percent annual rate in December, in line with its rate of growth over the second half of 1999. Thus far this year, nonfinancial businesses have returned to credit markets albeit somewhat tentatively to bond markets, as issuers have pulled back in response to the rise in bond yields. Households appear to have taken on consumer debt at a more rapid pace in December, in line with reports of exceptionally strong holiday sales, and commercial bank data for January indicate that consumer loans are still expanding briskly. Home mortgage debt apparently has continued to grow rapidly in recent months despite an increase of more than a percentage point in mortgage interest rates over the past year. Responses to the January Senior Loan Officer Survey, however, provided some evidence of slowing demand for home mortgages.

MONEY, CREDIT, AND RESERVE AGGREGATES
(Seasonally adjusted annual percentage rates of growth)

	Dec.	Jan.	1998:Q4 to 1999:Q4	1999:Q4 to Jan.
Money and Credit Aggregates				
M1	15.8	1.0	1.8	7.2
Adjusted for sweeps	14.2	1.5	5.0	6.9
M2	7.2	8.2	6.2	7.3
M3	16.6	8.8	7.6	12.4
Domestic nonfinancial debt	6.9	--	6.6	--
Federal	0.8	--	-2.5	--
Nonfederal	8.5	--	9.4	--
Bank credit	20.2	0.7	4.1	10.0
Adjusted[1]	19.7	2.8	5.4	10.9
Reserve Measures				
Nonborrowed reserves	7.4	54.0	-7.9	31.2
Total reserves	9.9	55.1	-7.6	32.3
Adjusted for sweeps	9.6	30.7	2.3	20.0
Monetary base	44.2	18.8	12.4	28.5
Adjusted for sweeps	42.1	17.9	12.6	27.1
Memo: (millions of dollars)				
Adjustment plus seasonal plus SLF borrowing	320	372	--	--
Excess reserves	1311	2043	--	--

NOTE: Monthly reserve measures, including excess reserves and borrowing, are calculated by prorating averages for two-week reserve maintenance periods that overlap months. Reserve data incorporate adjustments for discontinuities associated with changes in reserve requirements. The above monetary data incorporate revisions associated with the annual benchmark and seasonal review and are strictly confidential until released in early February.

1. Adjusted to remove the effects of mark-to-market accounting rules (FIN 39 and FASB 115).

Longer-Term Strategies

(7) This section considers alternative longer-term strategies for monetary policy and examines some aspects of conducting monetary policy in a setting of elevated uncertainty about the supply side of the economy.

(8) The first set of scenarios, presented in Chart 3, starts with a baseline that judgmentally extends the Greenbook forecast. Then, the FRB/US model is used to examine policies designed to achieve alternative rates of inflation over the longer run.[5] On the supply side of the economy, in all three scenarios the long-run NAIRU is about 5-1/4 percent and growth of potential output is initially around 4 percent, as in the Greenbook. However, labor productivity growth begins to slow at mid-decade as the pace of capital accumulation (and the rate of increase in services that capital provides) moderates.[6]

(9) Among the factors affecting aggregate demand, the federal budget surplus as a percent of nominal GDP is assumed to decline slowly on a NIPA basis from a peak of a bit

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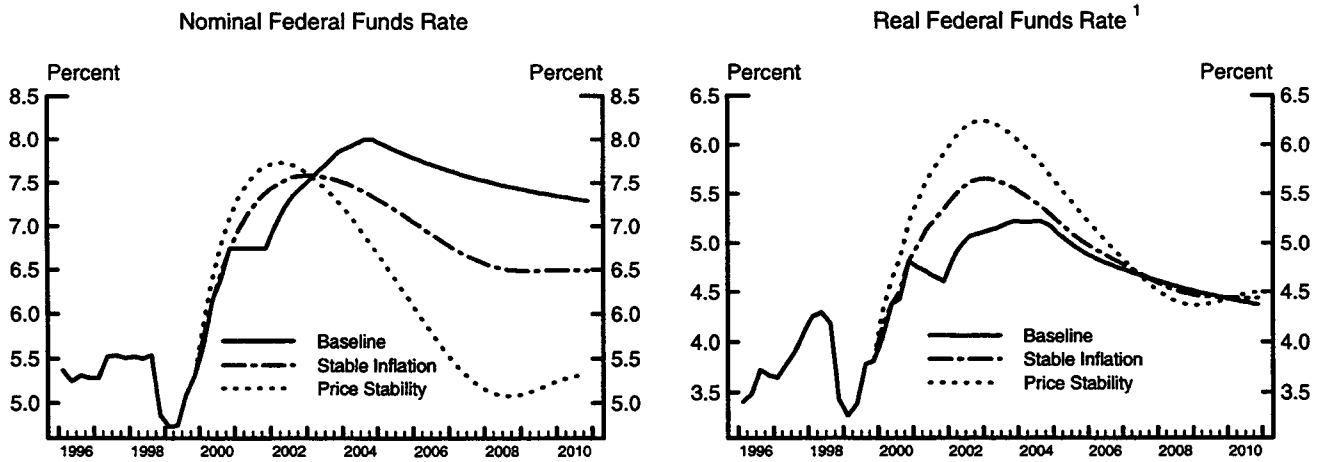
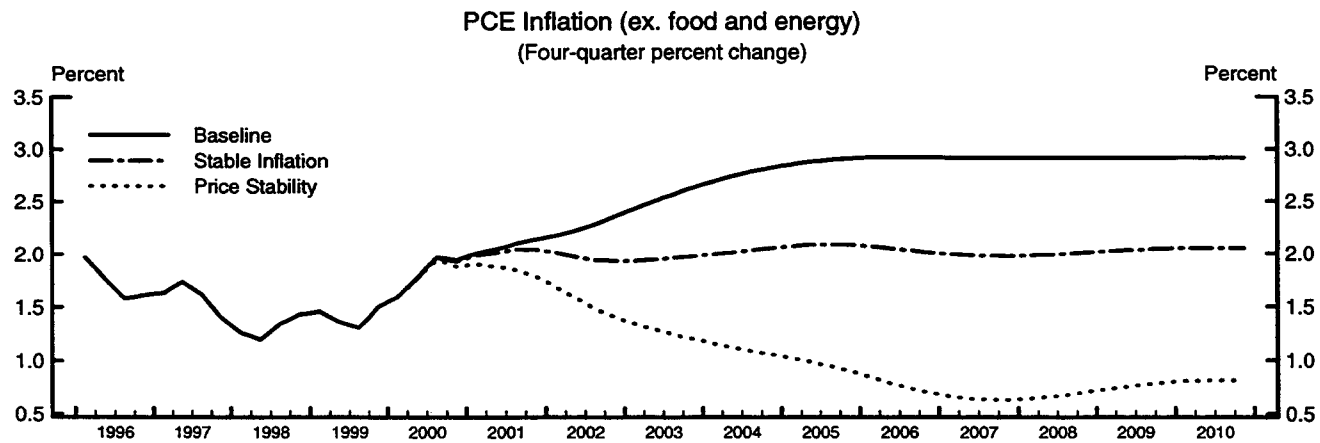
5. In the version of the model used for these simulations, expectations of inflation and other variables are formed in a forward-looking manner, but with incomplete knowledge of the structure of the model. Under this expectational mechanism, the model has a long-run sacrifice ratio of about 3-3/4. That is, the equivalent of a 3-3/4 percentage point increase in the unemployment rate sustained over a year would eventually yield a 1 percentage point lower rate of inflation.

6. The standard growth theory embodied in the staff model implies that the long-run sustainable growth rate of the capital stock depends on the growth rates of three factors—the working-age population, total factor productivity, and the relative price of capital goods. The capital stock, in turn, provides a flow of capital services that helps to determine labor productivity. Extrapolating recent trends of the key factors implies that growth in capital services is likely to slow from the 7 percent rate projected for the near term to a figure closer to 5 percent in the long run.

Chart 3

Alternative Strategies for Monetary Policy





1. The real federal funds rate is calculated as the quarterly nominal funds rate minus the four-quarter percent change in the PCE chain-weight price index excluding food and energy.

less than 2-1/2 percent next year to about 1-1/2 percent at the end of the decade.[7] Household demand is affected importantly by a projected decrease in the ratio of household wealth to GDP. In part, this occurs because the personal saving rate is currently too low to maintain wealth-to-income ratios absent rising asset prices. In addition, the value of corporate equity falls relative to GDP owing to higher real interest rates, slowing productivity growth, and a decline in the profit share of output. Ultimately, as household wealth declines relative to income, the personal saving rate rebounds to 4 percent by the end of the decade. Growth of foreign activity is about in line with that of the U.S. economy. Because the income elasticity of imports in the United States is much higher than in its trading partners, the U.S. current account deficit would continue to widen without significant dollar depreciation. As a result, portfolio balance considerations are assumed to lead to a modest secular depreciation of the real foreign exchange value of the dollar over the remainder of the decade, at about the same annual rate built into the Greenbook for 2001. This depreciation damps but does not halt the widening of the deficit.

(10) Although dollar depreciation and the decline in the federal budget surplus put upward pressure on equilibrium interest rates, those effects are more than offset by a rising personal saving rate and slowing productivity growth in the last half of the decade. Over the next few years, however, the equilibrium rate remains at an exceptionally high level,

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7. Given the prospects for productivity growth embodied in the baseline, this path for declining government saving seems reasonable in that it is consistent with both eliminating the federal debt early in the next decade, in line with the Administration's announced goals, and addressing concerns about the long-range financing of Social Security.

having been elevated by the acceleration in productivity and wealth-induced declines in the saving rate in recent years.

(11) In the **baseline scenario**, shown by the solid lines in Chart 3, core PCE inflation continues to rise beyond the Greenbook horizon, as the unemployment rate is a percentage point below the NAIRU at the beginning of 2002. The Committee is assumed to lean against this upward drift in inflation by tightening policy further to slowly push the unemployment rate up to the NAIRU by mid-decade. This policy entails raising the nominal federal funds rate to 8 percent by the end of 2004, an action that pushes the real funds rate up to 5-1/4 percent—a little beyond the 5 percent equilibrium real rate.[8] Consequently, the unemployment rate increases to the NAIRU in 2006, allowing inflation to stabilize at just under 3 percent.

(12) In the **stable inflation** scenario, shown by the dot-dashed lines, the Committee seeks to maintain core PCE inflation close to its current rate of 2 percent. Continuing to increase the funds rate in 2001 by almost a further percentage point—rather than leaving it unchanged, as in the Greenbook forecast—accomplishes this objective. This preemptive action raises the real rate and weakens aggregate spending enough to boost the unemployment rate somewhat above the long-run NAIRU. Such slack is needed for a while to offset the inflationary impetus of the initial leveling off, and later moderation, in productivity growth.

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8. In the charts, inflation is measured by the four-quarter change in the core PCE chain-weight price index, and past movements in this index are used to proxy for inflation expectations in the calculations of the real federal funds rate.

(13) The **price stability** scenario, shown by the dotted lines, brings core PCE inflation down to 3/4 percent – close to the estimated measurement bias in this price index. To achieve price stability, the Committee is seen to start raising the nominal funds rate immediately, to a peak of about 7-3/4 percent by late next year. This policy yields a much steeper and higher trajectory of real interest rates, pushing the unemployment rate up to 6-1/2 percent by the middle of the decade. Although GDP growth slows to below trend, the economy does not come close to falling into recession in this scenario; the faster growth of potential that has developed in recent years means that a substantial rise in the unemployment rate can occur even with a significantly positive pace of economic expansion. As inflation approaches its target, policy eases and real interest rates drift back down to their equilibrium level, leading to a drift down in unemployment back to the NAIRU.

(14) In the stable-inflation and price-stability scenarios, the Committee is assumed to choose a smooth trajectory for the nominal federal funds rate that minimizes the squared deviations of the expected paths of future inflation from its target rate and of unemployment from the NAIRU. In this process, the current funds rate is set based on estimates of the NAIRU and productivity growth going forward (as well as on forecasts of other factors). However, given the experience of the past several years, both of these supply-side estimates are subject to outsized uncertainty. The Committee might respond to this heightened uncertainty by placing less emphasis on forecasts and by downweighting the importance of economic indicators whose interpretation is contingent on knowledge of the NAIRU or trend productivity growth.

(15) Chart 4 shows that under the circumstances portrayed in the Greenbook, a policy looking only at recent inflation developments can do reasonably well at stabilizing the economy, although not as well as one using forecasts of economic conditions based on accurate assessments of the supply side. With the **realized-inflation rule** (shown by the dotted lines), the Committee is seen as changing the nominal federal funds rate in response to the realized change in inflation and to deviations of current inflation from a long-run target of 2 percent.[9] The **forecast-based strategy** (the solid lines) is the same as the "stable inflation" scenario of Chart 3, and is re-labeled to highlight its dependence on forecasts of future conditions that in addition are assumed to be accurate. Because under the realized-inflation rule the policymaker does not use as much information about the state of the economy, that rule produces greater fluctuations in inflation and unemployment, but the differences are contained and do not persist. To do even this well, however, the funds rate must react very strongly to inflation data. In the rule shown, the nominal funds rate is more than twice as sensitive in the short run to a change in inflation as it is in the standard Taylor rule.

(16) It is also useful to examine how such a strategy performs in a variety of situations in which developments do not conform with expectations. Charts 5, 6, and 7

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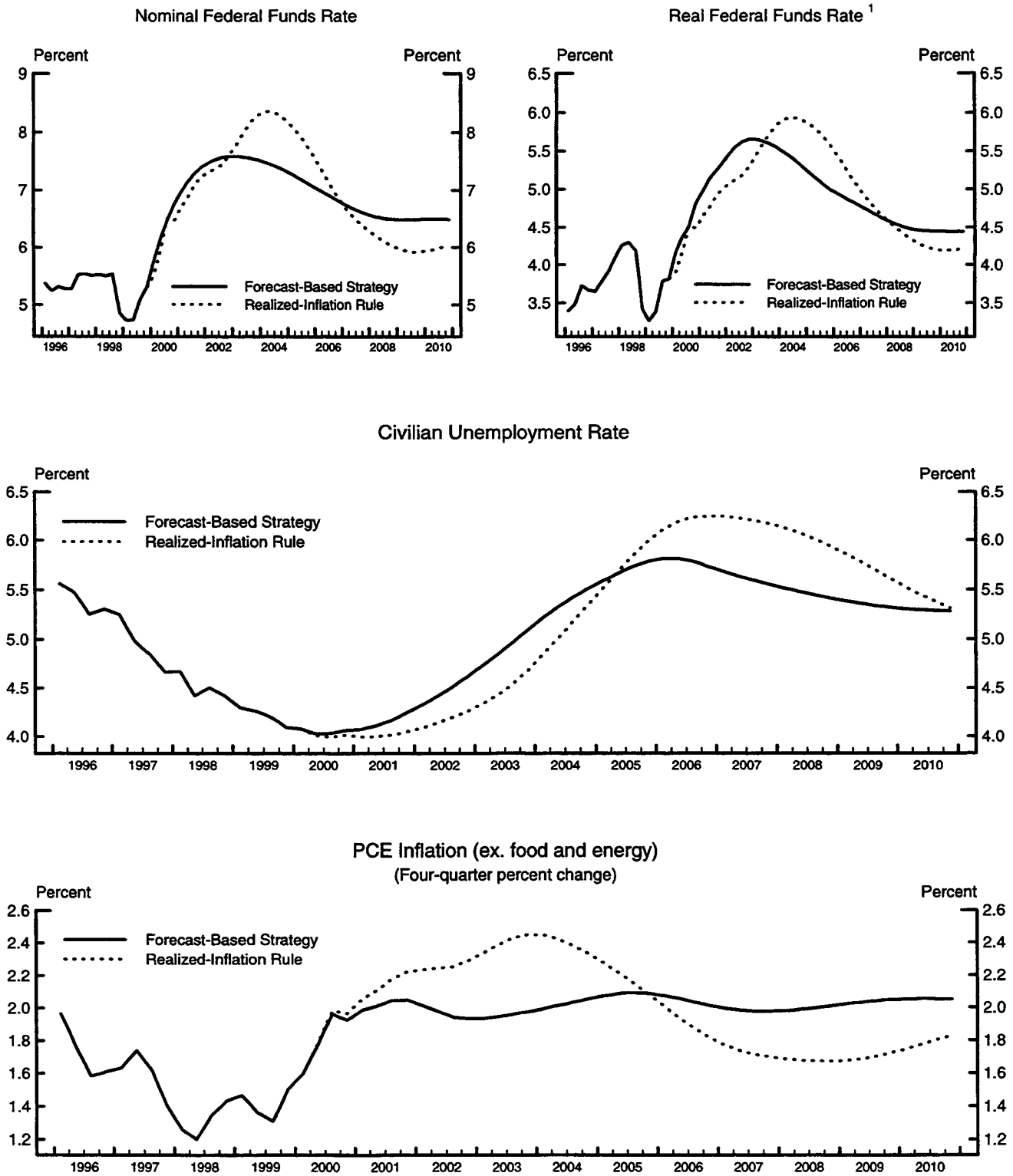
9. Specifically, the funds rate is set according to the rule $\Delta r_t = 3\,\Delta\pi_t + .2\,(\pi_t - \pi^*)$, where Δr is the quarterly change in the nominal funds rate, π is the four-quarter rate of core PCE price inflation, and π^* is the target rate of inflation. The change in the inflation rate is included in the rule so that, for example, when inflation is above target and rising the nominal funds rate will rise by more than if inflation were at the same level but falling. Unlike the Taylor rule, this rule determines the change in, not the level of, the federal funds rate—a feature that frees the policymaker from needing to know the real equilibrium funds rate.

Chart 4

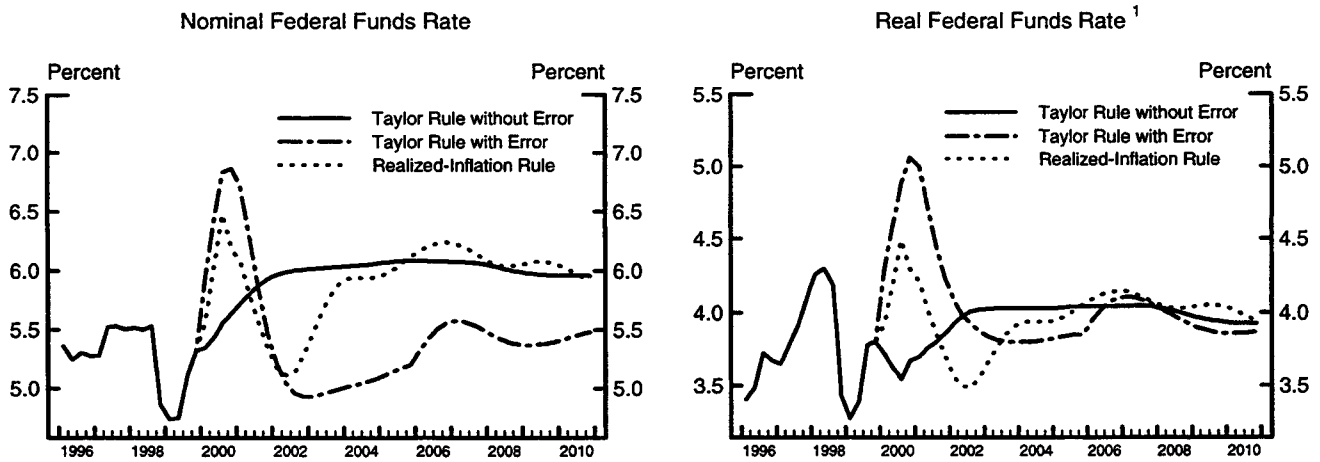
Policy Based on Realized Inflation Versus Expected Future Conditions

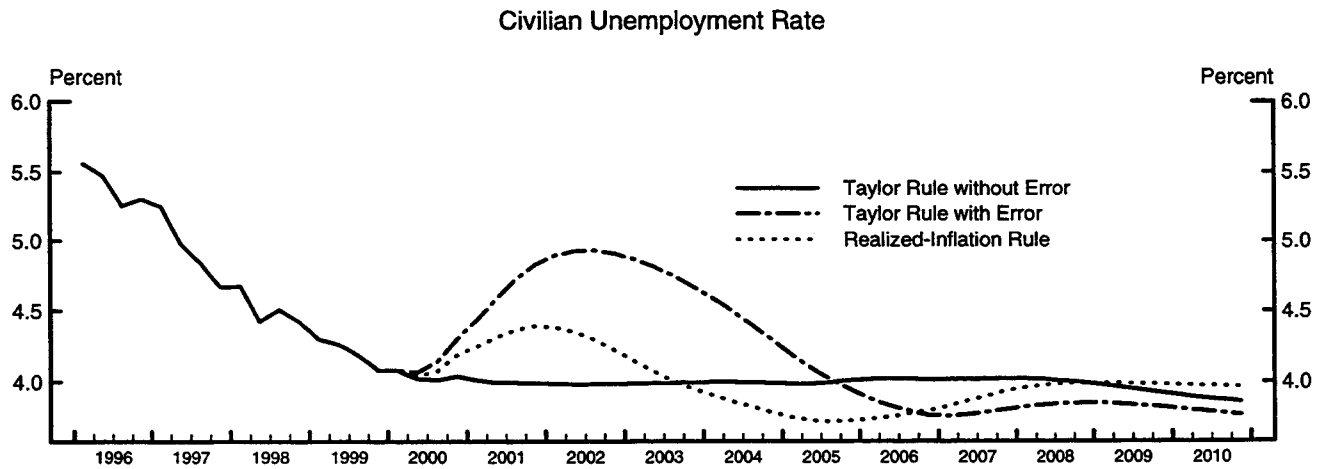


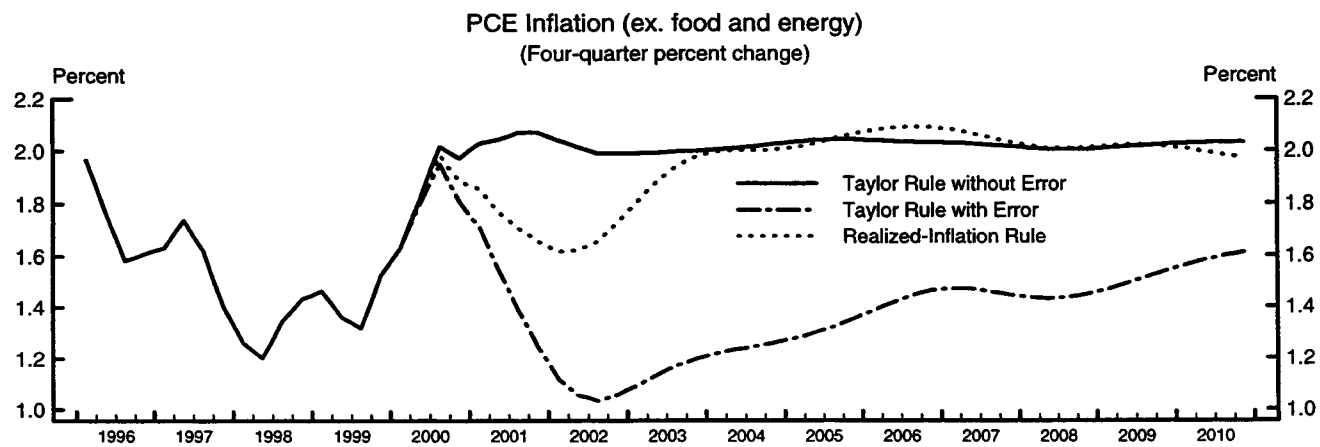
1. The real federal funds rate is calculated as the quarterly nominal funds rate minus the four-quarter percent change in the PCE chain-weight price index excluding food and energy.

Chart 5

Low NAIRU World

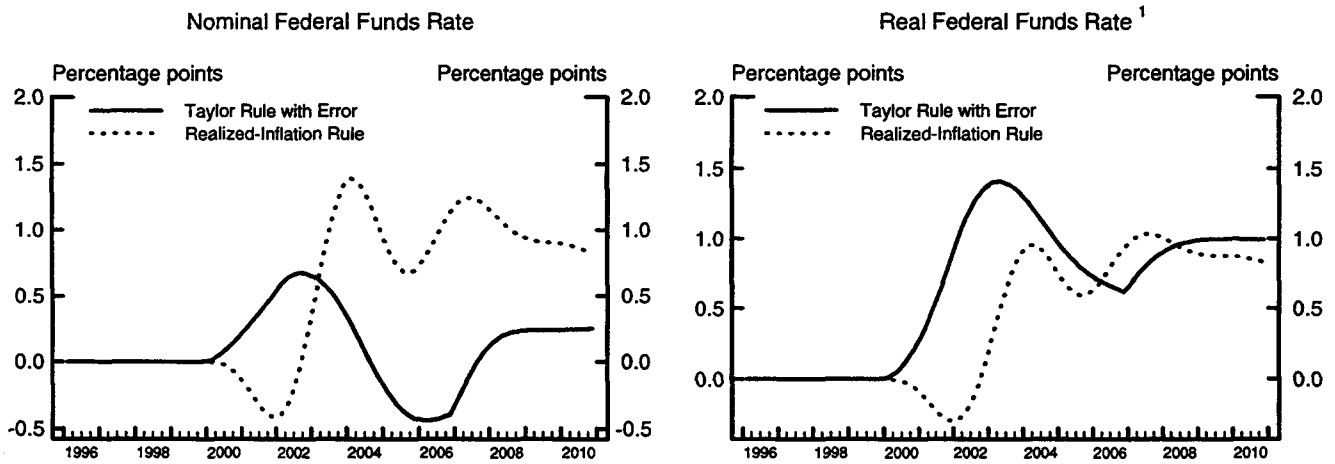


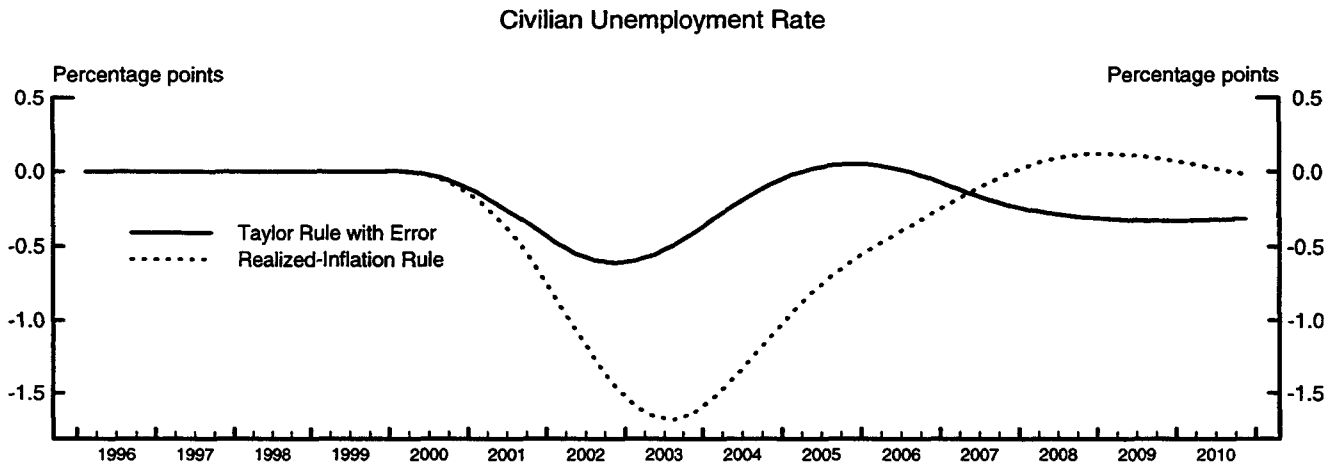


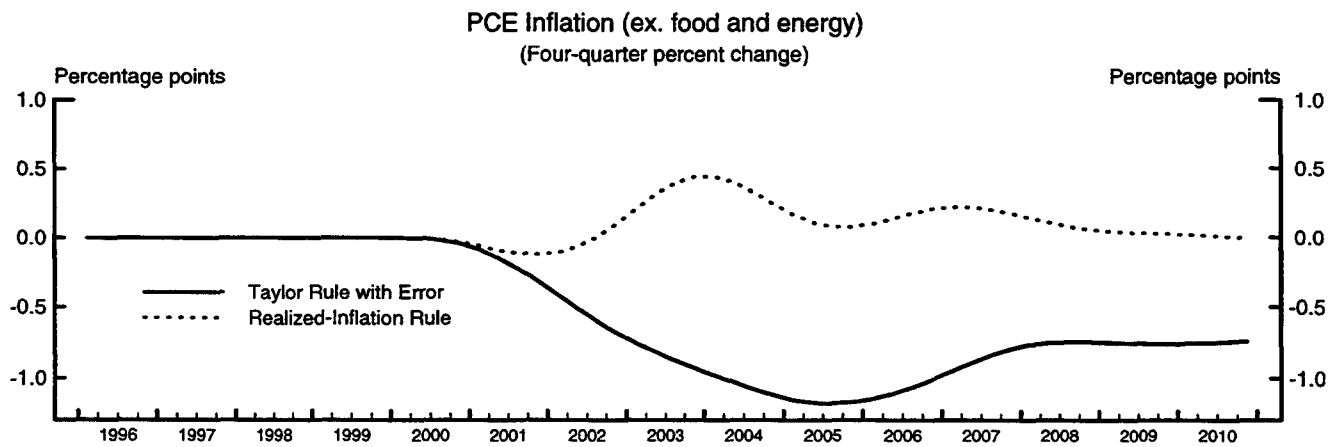


1. The real federal funds rate is calculated as the quarterly nominal funds rate minus the four-quarter percent change in the PCE chain-weight price index excluding food and energy.

Chart 6
Faster Productivity Growth
(deviations from baseline scenario)

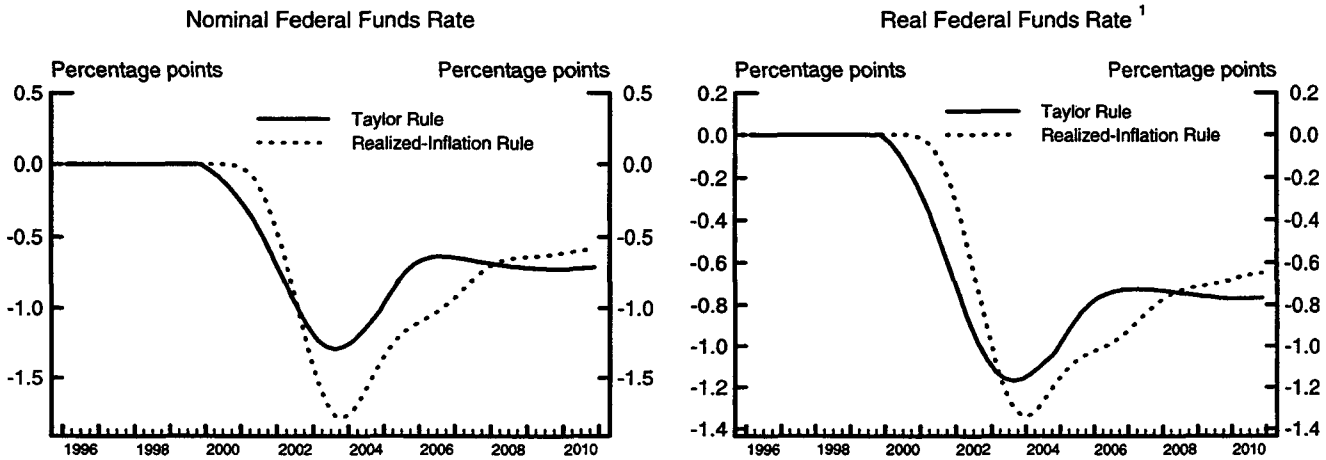


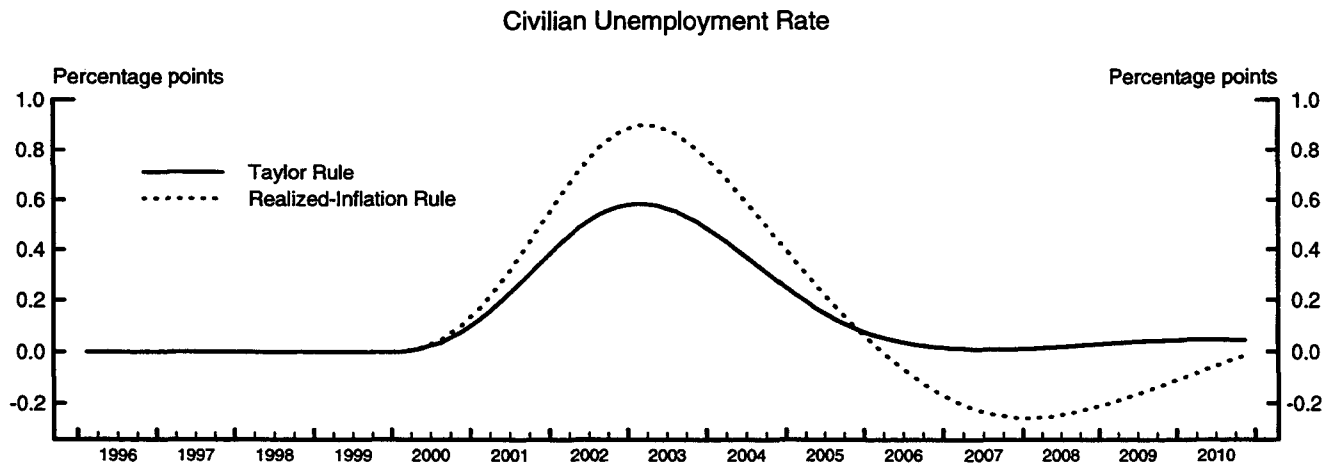


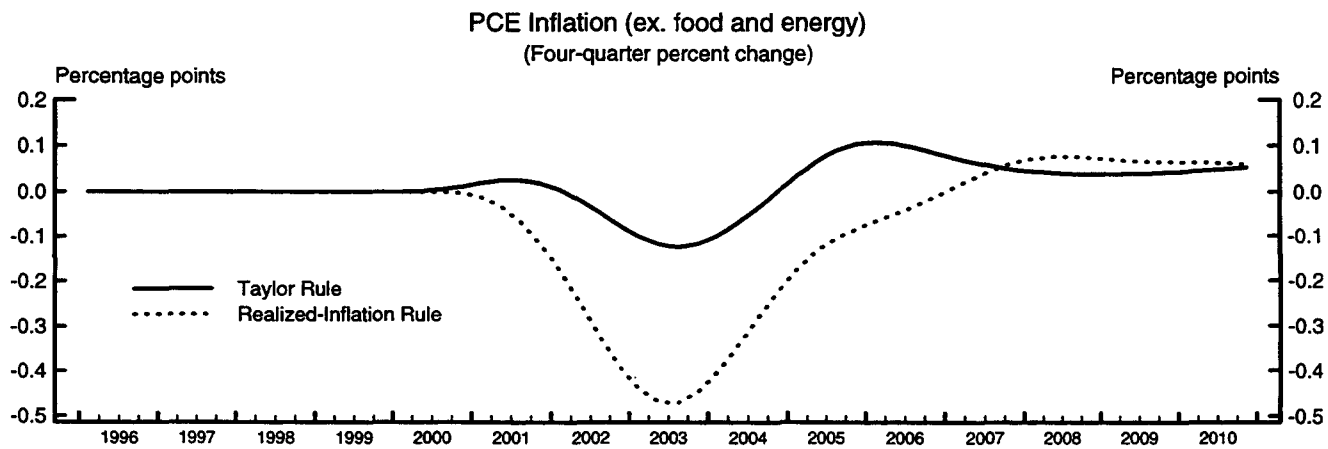


1. The real federal funds rate is calculated as the quarterly nominal funds rate minus the four-quarter percent change in the PCE chain-weight price index excluding food and energy.

Chart 7
Stock Market Decline
(deviations from baseline scenario)







1. The real federal funds rate is calculated as the quarterly nominal funds rate minus the four-quarter percent change in the PCE chain-weight price index excluding food and energy.

compare the behavior of the economy in three such situations under the realized-inflation rule and under the Taylor rule. The Taylor rule also relies on current inflation data, but in addition includes responses to the perceived current value of the output gap and the estimated equilibrium real interest rate.

(17) Chart 5 portrays a situation in which the current NAIRU is, and for some time has been, 4 percent. A policymaker who knew the true values of the NAIRU and potential GDP could do quite well by responding to movements in both output and inflation, as indicated by the solid lines showing the performance of the Taylor rule without measurement error. In contrast, the dot-dashed lines illustrate a situation in which the policymaker incorrectly estimates the NAIRU to be 5-1/4 percent, but gradually lowers this estimate to 4 percent as inflation persistently comes in below expectations.[10] Initially, owing to the misestimation of the NAIRU, the policymaker tightens inappropriately to raise real interest rates and unemployment to their perceived equilibrium levels. The resultant overshoot in unemployment and undershoot in inflation is only slowly eliminated. As indicated by the dotted line, the realized-inflation rule also would prescribe a substantial increase in the funds rate this year, because of the ½ percentage point pickup in core inflation. However, as time passes and inflation declines, responding to actual inflation would lead to a fairly prompt reversal of policy, and the unemployment rate could thereby be kept much closer to 4 percent and inflation held more tightly in the vicinity of 2 percent compared to the Taylor rule with error.

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10. Such a policymaker also would begin with an estimate of the equilibrium real funds rate that is too high. As with the NAIRU, the estimated equilibrium real rate would be revised down over time as inflation came in lower than expected.

(18) Aside from questions about the sustainable level of unemployment, the Committee also must wrestle with how best to discern and respond to changes in potential growth. Chart 6 considers a situation in which productivity growth turns out to be a percentage point faster than the staff's projection; results are reported as deviations from the baseline scenario of Chart 3, in order to better illustrate the effects of the productivity surprise. The realized-inflation rule (the dotted lines) allows the gains of the productivity acceleration to be taken in the form of lower unemployment for several years. With time, however, tighter labor market conditions cause inflation to begin to rise, and these developments lead in turn to higher interest rates.[11] By contrast, when policy is based on the Taylor rule and the increase in productivity growth is perceived only gradually (the solid lines), policymakers misjudge the inflation implications of the strength in aggregate demand spurred by the higher growth of productivity and they raise the funds rate more quickly (particularly in real terms). The Taylor rule causes the initial productivity surprise to primarily lower inflation rather than the unemployment rate. Only as policymakers gradually learn that the acceleration in productivity is permanent and adjust their estimates of the output gap are they able to bring inflation back to its desired level.[12,13]

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11. According to a wide variety of models, an increase in the trend growth rate of the economy eventually leads to an upward shift in the equilibrium real interest rate. This shift is greater than one-for-one in the FRB/US model; the exact magnitude of the shift depends on a variety of factors, including the response of government spending to the change in potential output, and the degree to which foreign economies also experience a pick-up in growth.

12. Thus, targeting only inflation, and not also the deviation of output from potential (or unemployment from the NAIRU) looks attractive in the case of a beneficial supply shock. With an adverse supply shock, targeting inflation would cause the shock to have more of its effect on lowering output, relative to a rule that tried to stabilize both inflation and

(19) Of course, not all the uncertainty about the outlook concerns the supply side; the Committee is also likely to face swings in aggregate demand not associated with productivity shocks. In Chart 7, we consider a gradual but prolonged slide in the stock market.[14] As indicated by the dotted lines, the realized-inflation rule does not lead to as quick a response of interest rates to the downturn in aggregate demand as does the Taylor rule; instead, policymakers wait until the weakness in output shows up as lower inflation. As a result, unemployment rises almost a percentage point relative to baseline, leading to a shortfall of inflation with respect to the target rate. By contrast, the Taylor rule (the solid lines) prompts a response to the weakness in output, and therefore more quickly stabilizes both unemployment and inflation.

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output—such as the Taylor rule.

13. Despite the length of time required for policymakers to gauge fully the extent of the productivity acceleration (seven years), errors in the measurement of the output gap are relatively small, and peak at less than 3 percentage points.

14. The shock is a 2 percentage point rise in the equity premium, spread over this year and next. On an ex ante basis, such a shock would produce a 40 percent decline in equity prices. However, associated changes in the long-run level of real interest rates reduce the ex post fall in the stock market to 25 percent.

Projections and Ranges for Money and Debt

(20) The growth rates of the monetary and debt aggregates in 1999 and projected for 2000 are shown in the table below, along with those for nominal GDP. A discussion of alternative ranges for money and debt growth in 2000 begins in paragraph 25.

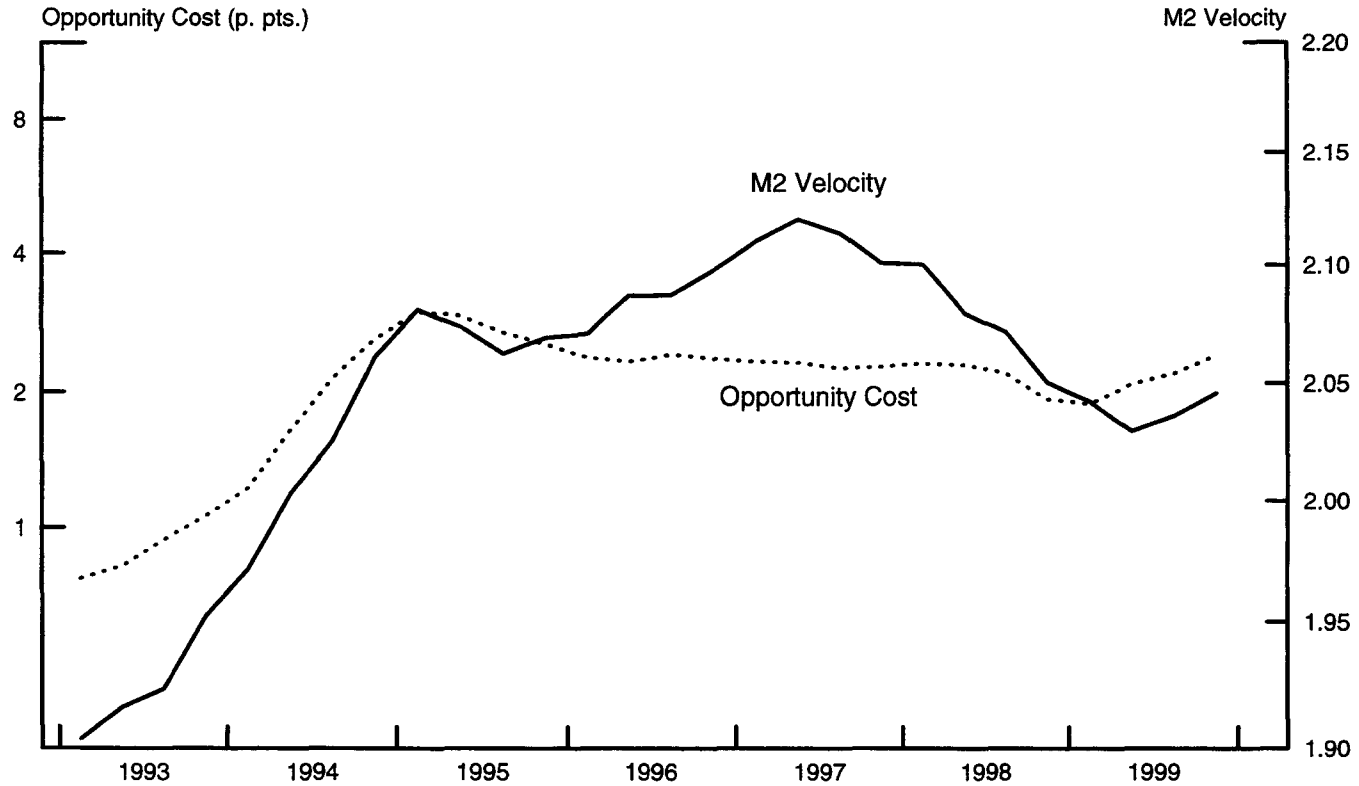
Growth of Money and Debt
(percent)

	1999 (Actual)	2000 (Projected)	Memo: 1999 Ranges
M2	6.2	4¾	1 to 5
M3	7.6	6¼	2 to 6
Debt	6.6	5¼	3 to 7
Memo: Nominal GDP	6	6	

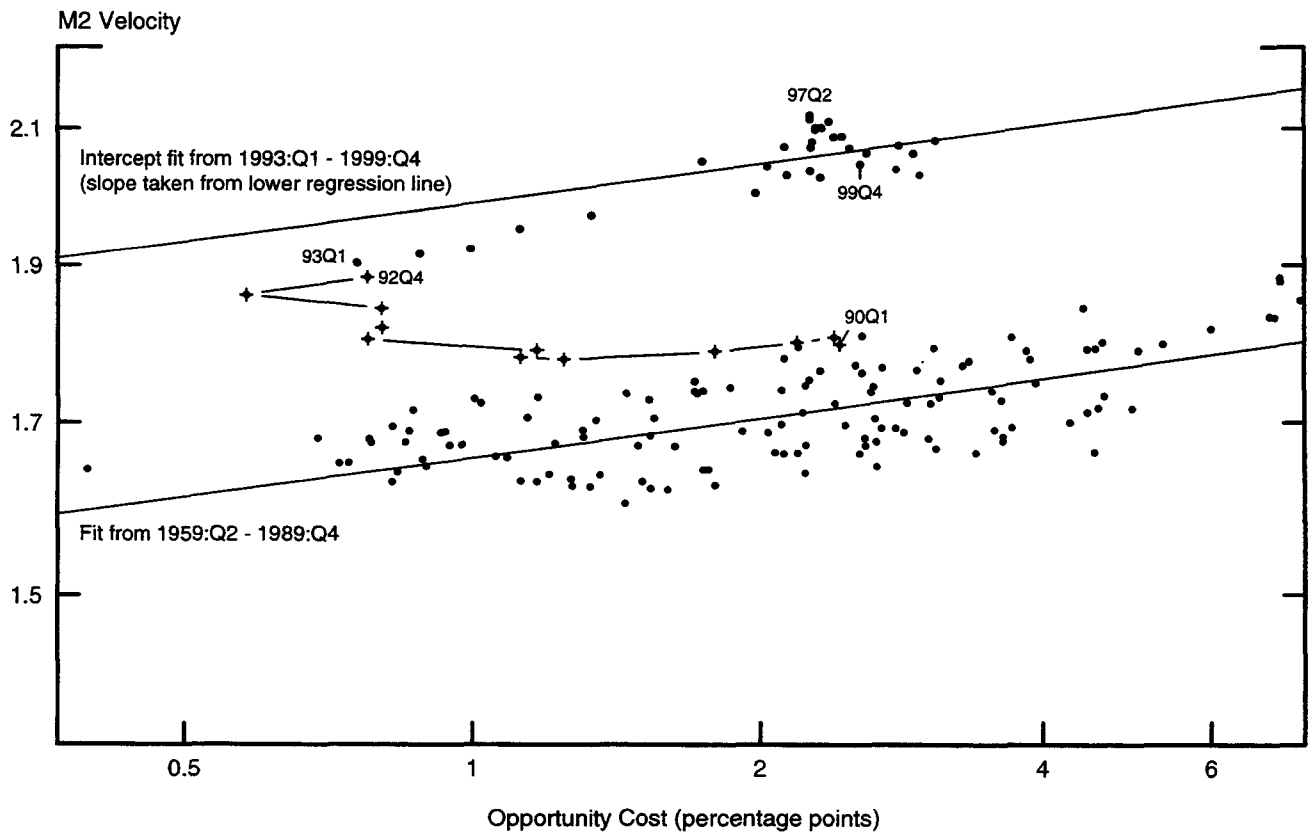
(21) M2 grew 6¼ percent over 1999, and its velocity declined slightly. Although M2 velocity tracked the rise in its opportunity cost rather well over the second half of the year, as shown in chart 8, that conformance with historical relationships followed a period when movements in velocity were not so readily explained. From the end of 1995 through mid-1999, velocity rose and then declined, despite rather stable opportunity costs. The demand for M2 assets over that period is not fully understood, but we believe that it was importantly affected by interactions with household stock market investments. Increases in velocity up to mid-1997 were associated with strong flows into stock mutual funds, suggesting substitution of equity investments for M2 assets. As capital gains boosted stock market wealth over the next two years, however, flows into stock mutual funds slowed

Chart 8: M2 Velocity and Opportunity Costs

(ratio scales)



Note: The scales are set to match the estimation results shown below. Opportunity cost is a two-quarter moving average of the three-month Treasury bill rate less a weighted average of the interest rates on M2 components.



noticeably, and M2 strengthened relative to income, perhaps reflecting some portfolio rebalancing by households.[15] Whatever the causes, as shown in the lower panel, those departures of velocity from what would be predicted by opportunity costs are much smaller than in the early 1990s. As regards M3, growth for the year came to 7-1/2 percent boosted to some extent by a Y2K-related surge in institutional money funds and large time deposits.

(22) M2 growth is expected to moderate substantially in 2000--to 4¾ percent--despite projected growth of nominal GDP remaining at about 6 percent. The slowing in M2 growth owes importantly to the staff's assumption of an increase in the federal funds rate of 1¼ percentage point over this year, which should help to induce a rise in M2 velocity of about 1¼ percent. The increase in M2 is a little more than would be predicted by historical relationships between opportunity costs and velocity; the forecast assumes a little support for M2 demand owing to disappointing returns for investors in the stock market this year, which could prompt some shifts to M2 assets.

(23) M3 is expected to decelerate more than M2 and post 6¼ percent growth in 2000, reflecting in part the unwinding of the Y2K effects on the broader aggregate. In particular, the growth of institutional money funds should slow substantially as the buildup of corporate liquidity in late 1999 dissipates and as investors find yields on market instruments to be more attractive than the lagging returns on such funds. Managed liabilities of banks in M3 should grow more slowly this year as well, as banks pare back the extraordinary Y2K-related pace of issuance of the fourth quarter. Nevertheless, despite

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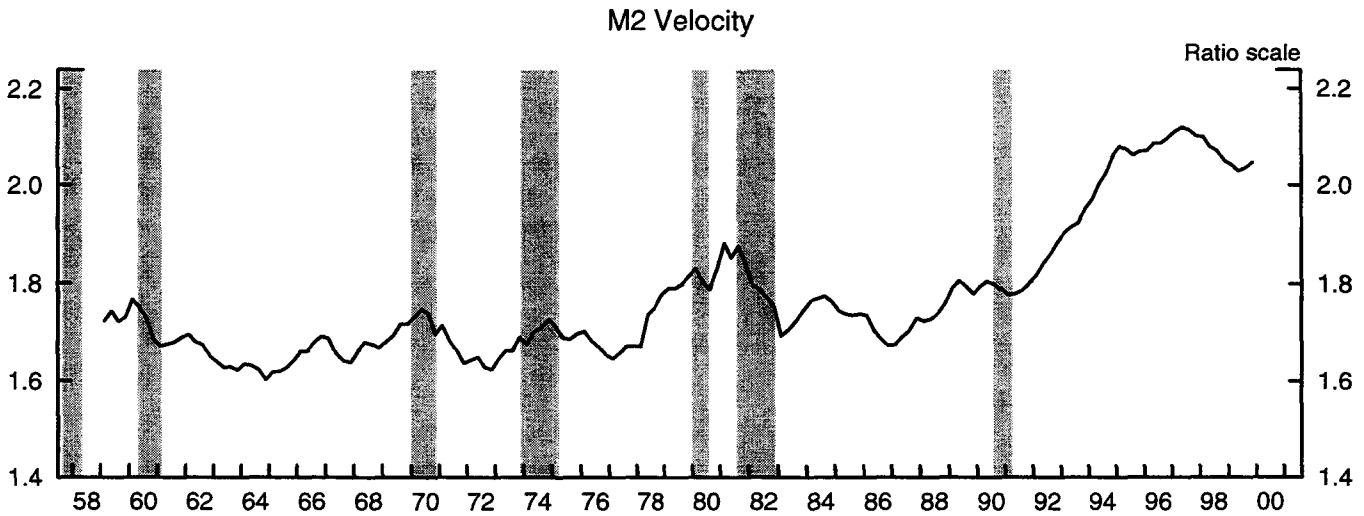
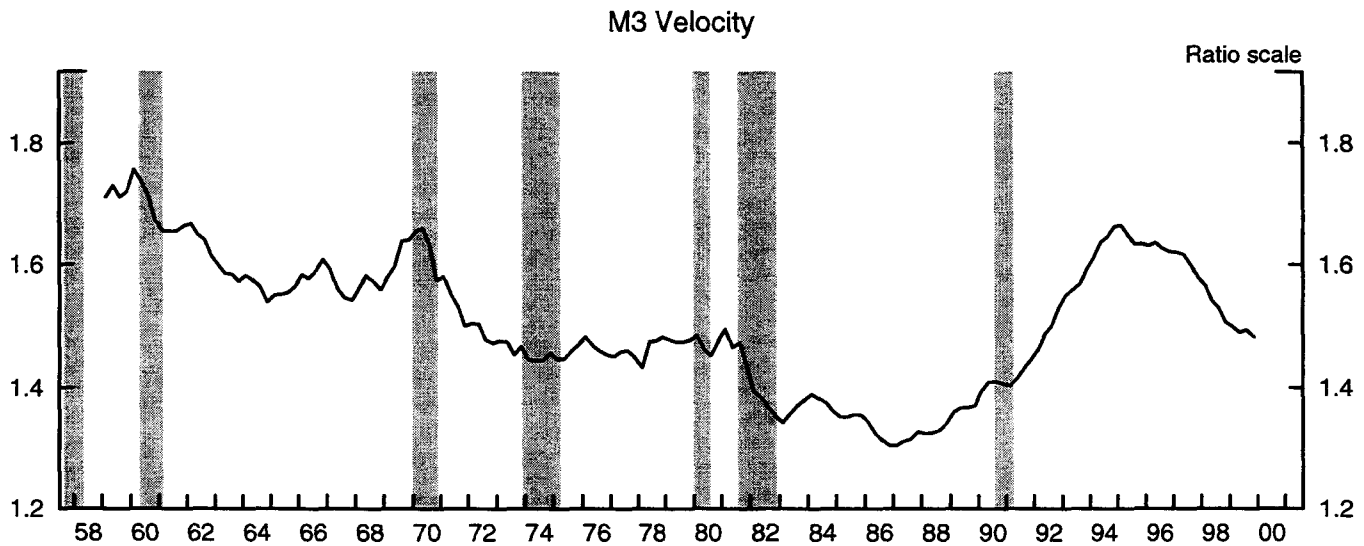
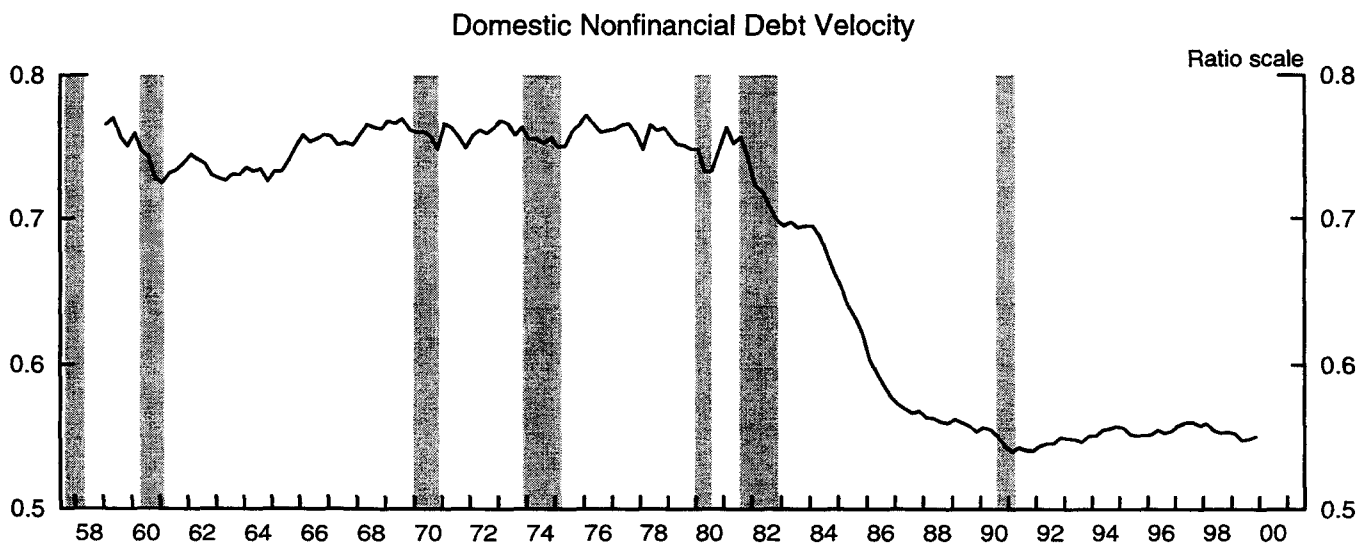
15. The estimated net cash flows from households into stock mutual funds, excluding retirement accounts, amounted to $102 billion in the year and a half ending in June 1997 and $52 billion in the subsequent year and a half.

Chart 9







Note: Recession shading.

some increase in real interest rates and a slightly more conservative lending stance by banks and other depositories, bank lending is expected to pick up markedly this year, contributing to the faster growth of M3 than of GDP.

(24) After growing 6½ percent in 1999, the debt of domestic nonfinancial sectors is projected to increase 5¼ percent this year, somewhat below the anticipated growth of nominal GDP. Only a small portion of the deceleration owes to the unwinding of extra borrowing late in 1999 associated with Y2K. More fundamentally, rising government surpluses induce faster paydowns of Treasury debt, and some moderation in private spending slows nonfederal debt growth to a still rapid 8¼ percent. Moreover, both equity retirements and the accumulation of liquid assets held by businesses are projected to moderate from their rapid rates of increase in 1999, holding down business credit demands. Offsetting these influences in part is the widening gap between capital expenditures and internal funds, as investment remains strong while profit growth slows. Household debt growth is expected to ease somewhat after its surge toward the end of 1999, as spending on big ticket items is restrained by higher interest rates and lower realized returns on equity investments. While banks may tighten up a bit further on lending terms and conditions, credit costs to private borrowers are unlikely to rise by much more than benchmark yields.

Ranges for Money and Debt

(25) The ranges for money and debt in 2000 that the Committee selected on a provisional basis last July are presented below, along with an alternative that adjusts the money ranges for faster growth of potential GDP. As in other recent years, the Committee chose provisional ranges for the monetary aggregates in 2000 that it saw as benchmarks for

money growth under conditions of long-term price stability and historically typical velocity trends, while the range for domestic nonfinancial debt was better aligned with projected growth of that aggregate in 2000. The provisional range for debt, at 3 to 7 percent, is centered not far from the staff's projection for debt growth in 2000, and therefore no alternative setting for that range is offered for consideration.[16] The provisional ranges, listed as alternative I, are the same set that has been in place since the middle of 1995. The Committee may wish once again to retain these ranges as an implicit indication to the public of the low weight it places on the monetary and debt aggregates in formulating monetary policy. The existing ranges might also be chosen if the increases in productivity observed in recent years were seen as likely to be transitory.

Alternative Ranges for Money and Debt in 2000
(percent)

	Alt. I Provisional	Alt. II	Memo: Projected Growth
M2	1 to 5	2 to 6	4¾
M3	2 to 6	3 to 7	6¼
Debt	3 to 7	3 to 7	5¼

16. If the Committee chose to reinterpret the range for debt as a price stability range, parallel with the treatment for the monetary ranges, it would have several choices, depending on how it interpreted history. It could set a range for debt that was about a percentage point faster than its expected growth of nominal GDP at price stability, reflecting the decline in debt velocity on balance since 1959. However, debt velocity has been rather flat outside of the 1980s, so a price stability range for the debt aggregate could alternatively be centered on the expected steady state growth of nominal GDP, as is the case for M2.

(26) If, however, the faster productivity growth of recent years is expected to persist or even pick up further, the ranges in use since the mid-1990s would no longer be centered around money growth expected when prices were stable. In alternative II, the ranges for M2 and M3 are adjusted upward to allow for faster growth of potential output. When the Committee shifted to using price stability ranges in the mid-1990s, the staff's estimate of potential output growth was about 2¼ percent and there was thought to be perhaps a percentage point of upward bias in the implicit GDP deflator. Over the last four years, however, the staff estimates that potential GDP growth has averaged about 3½ percent, while the bias in the implicit deflator is now about ½ percentage point. Potential GDP growth is deduced from estimates of structural productivity growth averaging 2½ percent, plus about 1 percent growth in labor inputs.[17,18] The midpoints of the ranges in alternative II are consistent with these estimates of recent potential output growth and residual bias in the implicit GDP deflator, assuming historically typical velocity behavior. With stable velocity, M2 would be expected to grow at the implied 4 percent pace of

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17. While actual nonfarm business productivity has grown at an average 2¾ percent rate over the last four years, about ¼ percentage point has been cyclical, according to staff estimates. Differences in the growth rates of output and hours in the nonfarm business sector versus the overall economy require a downward adjustment of 0.1 percentage point in arriving at potential GDP growth.

18. Similar estimates for potential GDP expansion over the last four years can be derived using Okun's law: Actual GDP has grown an average 4¼ percent and the unemployment rate has fallen 0.4 percentage point per annum on balance since 1996. Estimates of Okun's law over recent decades imply that the difference between actual and potential output growth is twice the rate of decline in the unemployment rate, or ¾ percentage point, implying potential output growth of 3½ percent over the period.

nominal GDP. The range for M3 would be a percentage point higher than that for M2, reflecting the faster average growth of the broader aggregate over history.[19]

(27) For a variety of reasons, however, desired steady state growth of the monetary aggregates might be faster than the midpoints of the ranges in alternative II. The staff estimates that, owing to accelerating productivity, the growth of potential GDP will be yet more elevated going forward--4 percent over this year and next. Moreover, the Committee may believe that a small positive true inflation rate is desirable in the long run because of possible nominal rigidities in the economy or because of potential risks to the ability of policy to react forcefully to economic weakness if the nominal federal funds rate were close to the lower bound of zero.[20] The Committee may view a small positive true inflation rate as still consistent with effective price stability in that such a rate may be sufficiently low as to have no influence on the decision-making of households and businesses. If the Committee did decide to adjust the monetary ranges up by a percentage point or more, the Humphrey Hawkins report and testimony could clarify that no greater weight was intended to be placed on the aggregates in the formulation of policy. The July 1999 Humphrey Hawkins report noted that such an adjustment might be needed if faster productivity growth persisted.

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19. The velocity of M3 has been rather unstable and its long-run trend difficult to assess (chart 7). M3 has grown faster than M2 on average since 1959; this divergence has been evident in recent years as well and is projected to continue over the forecast period. However, it is unclear why nominal magnitudes would grow at divergent rates over the very long run, and the price stability range for M3 might ultimately have to be aligned to that for M2.

20. This latter concern may have become less of a risk of late because of apparent increases in the equilibrium real funds rate, likely associated with faster productivity growth.

Short-Run Policy Alternatives

(28) In view of continued and surprising vigor in incoming spending data and a slightly higher projected path for equity prices, the staff has again notched up its assessment of the underlying strength of aggregate demand. At the same time, the forecasts for productivity growth and expansion of potential GDP have been revised up a touch. The staff has assumed that the FOMC will respond to inflationary pressures by raising the federal funds rate 1-1/4 percentage points, ½ percentage points more than in the December Greenbook. These firming actions are assumed to occur a bit sooner than currently built into the yield curve and are expected to be accompanied by an edging higher of long-term yields and a plateauing of equity prices not much above current levels. The growth of real GDP is now projected at 4 percent in 2000 and 3-3/4 percent in 2001, compared with 3-3/4 percent for both years in the last Greenbook. The unemployment rate is seen as remaining around 4 percent over the forecast period. This degree of pressure on resources is expected to lead to a noticeable acceleration of core consumer prices, with the PCE chain price index excluding food and energy projected to be rising at a 2-1/4 percent rate in the second half of 2001, compared with 1-1/2 percent during 1999. Foreign economies are projected to continue growing briskly, prompting increases in official interest rates in many major trading partners this year that about match those assumed for the United States. As a result, the foreign exchange value of the dollar is expected to hold around current levels through 2000 before depreciating moderately next year as U.S. interest rates flatten out and swelling volumes of dollar-denominated debt associated with a high and rising current account deficit weigh on international investment portfolios.

(29) This bluebook proposes three short-run monetary policy alternatives for the Committee's consideration at this meeting: an unchanged stance of monetary policy (alternative B); a 25 basis point firming of the federal funds rate (alternative C); and a 50 basis point tightening (alternative D).

(30) Despite the significant inflation risk embodied in the staff forecast and identified in the Federal Reserve's announcement following the December meeting, the Committee might not yet be convinced that policy action is necessary and hence might be inclined to choose **alternative B**. Even though labor markets have remained tight for some time, readings on core prices generally have been well behaved, excepting the pickup in various NIPA inflation measures for the fourth quarter reported today. While these reports may be disquieting, the four-quarter changes in these measures remain moderate. Taken together with other price reports, the recent behavior of core inflation may still be consistent with trend productivity growth that is strong enough, or a natural rate of unemployment that is low enough, to restrain inflation for considerably longer than in the staff forecast. In light of this possibility, the Committee may wish to wait awhile in order better to assess the extent of inflationary pressures. If the Committee were to keep the stance of policy unchanged, however, it presumably would want to accompany announcement of that choice with a statement, under its new policy, that "the risks are weighted mainly toward conditions that may generate heightened inflation pressures in the foreseeable future," given the high rate of labor utilization and the continued strength in demand that could push that rate even higher.

(31) In view of the macroeconomic situation and recent Federal Reserve statements, market participants uniformly seem to expect a tightening of monetary policy at this meeting, with considerable weight currently being placed on a 25 basis point move and some probability on a 50 basis point increase. In these circumstances, implementation of the unchanged money market conditions of alternative B, even if accompanied by a statement that the balance of risks remains tilted to the upside, would confuse investors. Nonetheless, financial markets, especially for equities, would rally if investors trimmed their expectations of the extent of cumulative monetary tightening. Short-term market interest rates would drop nearly 1/4 percentage point, and the dollar would weaken on foreign exchange markets.

(32) The announcement following the December meeting indicated that the FOMC was concerned that a continuation of rapid demand growth could lead to an escalation of inflation pressures. If anything, the upside risks to the economy and inflation seem to have intensified over the intermeeting period, perhaps inclining the Committee toward the 25 basis point firming of policy of **alternative C**. Indeed, those risks would mount should financial markets rally as a result of policy inaction. And although productivity may still be accelerating, the momentum of spending risks outstripping the expansion in available labor, exacerbating strains in already-taut labor markets. The staff's assessment is that considerable policy firming will be necessary to contain inflation. Even if the Committee finds this assessment plausible, it still may want to proceed incrementally, as it typically has done, because of uncertainty about the response of financial markets to its actions, about the sensitivity of spending to financial market conditions, and about the

reaction of inflation to labor market conditions. Moreover, long-term inflation expectations remain damped, suggesting that a rapid shift in the stance of policy is not essential at this point. Still, the Committee may wish to express the view that, even after the 100 basis points of cumulative tightening since mid-1999, the risks remain tilted toward increased inflation pressures.

(33) Investors appear to be anticipating a 25 basis point firming and a statement that the balance of risks is weighted toward inflation. As a result, these choices would likely result in little change in market prices. As this is the first Committee meeting under the new disclosure policy, however, an assessment of the market reaction is somewhat more uncertain than usual. There is a good chance that market participants would read the announcement as suggesting that another firming could well be in the offing, but such an expectation is already consistent with current readings on federal funds futures rates, which imply a near-certainty of another 25 basis point move at the March meeting.

(34) If the Committee sees recent data as tending to confirm that substantial monetary restraint will need to be applied over the next year or so to keep inflation in check, as implied by the staff forecast, it might choose the 50 basis point tightening of policy contemplated in **alternative D**. In this circumstance, the Committee might see advantages to moving well along in the process relatively quickly, to minimize the odds that inflation expectations begin to rise and to reduce the probability that a protracted period of tightening will be required. And, it might also want to adopt a statement that it saw the risks as still being tilted toward higher inflation, which would convey a sense that further policy tightening might well be needed. On the other hand, if the Committee thought that a

prompt 50 basis point adjustment had a reasonable chance of being sufficient to contain inflation to a satisfactory level, at least for some time, it presumably would indicate, under the formula laid out in its new disclosure policy, that "the Committee believes that the risks are balanced with respect to prospects for" "its long-run goals of price stability and sustainable economic growth."

(35) The 50 basis point tightening at this meeting contemplated under alternative D is not fully incorporated in market prices, and thus implementation of this alternative would probably result in nearly a quarter-point rise in money market yields. The effects on longer-term yields and on equity prices would probably be conditioned importantly by the FOMC's statement regarding the balance of risks. With a statement of symmetric risks "for the foreseeable future," any drop in bond prices might be damped as the effects of the tighter-than-expected stance of policy over the near term are partly offset by some flattening of investors' expectations of policy tightening after March. If the FOMC instead chose to link its tightening action with wording indicating that it saw the balance of risks as still tilted toward inflation, market participants would likely revise upward their expected path of Federal Reserve tightening. Hence, bond and stock markets would probably sell off, and the dollar would appreciate on foreign exchange markets.

(36) Under the unchanged money market conditions of alternative B, M2 growth is projected to pick up a bit, to a 6 percent annual rate over the December to June period, from the 5-1/2 percent rate from September to December, despite a small drag from the unwinding of Y2K effects. M2 would be somewhat above its provisional 1 to 5 percent annual range in June. M3 is expected to decelerate sharply, to a 5-1/4 percent rate over the

December to June period from the 14 percent pace of September to December. Adjusted for Y2K influences, M3 growth is expected to be about the same in the two periods. M3 also would be above its provisional 2 to 6 percent annual range in June. Growth of the debt of domestic nonfinancial sectors is expected to slow, dropping to a 5-1/4 percent rate over the December to June interval from the 6 percent pace between September and December, leaving this aggregate a bit above the middle of its provisional 3 to 7 percent annual range in June.

Directive and Balance of Risks Language

(37) Presented below for the members' consideration is draft wording relating to (1) the Committee's ranges for the aggregates in 2000 that will constitute the first paragraph of the new abbreviated directive, (2) the sentence comprising the second or operational paragraph of the directive concerning the objective for the federal funds rate, and (3) the "balance of risks" sentence to be included in the press release issued after the meeting (not part of the directive).

I. Growth Ranges for 2000

The wording shown below incorporates changes in the last sentence (relating to prices) that were proposed in Governor Ferguson's memo of December 17, 1999.

> The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. In furtherance of these objectives, the Committee at this meeting established ranges for growth of M2 and M3 of __ to __ ~~1 to 5~~ percent and __ to __ ~~2 to 6~~ percent respectively, measured from the fourth quarter of 1999 to the fourth quarter of 2000. The range for growth of total domestic nonfinancial debt was set at __ to __ ~~3 to 7~~ percent for the year. The behavior of the monetary aggregates will continue to be evaluated in the light of movements in their velocities and developments in prices, the economy, and financial markets.

II. Operational Paragraph Sentence

To further the Committee's long-run objectives of price stability and sustainable economic growth, the Committee in the immediate future seeks conditions in reserve markets consistent with maintaining/INCREASING/DECREASING the federal funds rate at/TO an average of around __ ~~5-1/2~~ percent.

III. "Balance of Risks" Sentence

Against the background of its long-run goals of price stability and sustainable economic growth and of the information currently available, the Committee believes that the risks are [balanced with respect to prospects for both goals] [weighted mainly toward conditions that may generate heightened inflation pressures] [weighted mainly toward conditions that may generate economic weakness] in the foreseeable future.

Alternative Growth Rates for Key Monetary and Credit Aggregates

		M2			M3			Debt
		Alt. B	Alt. C	Alt. D	Alt. B	Alt. C	Alt. D	All Alternatives
Monthly Growth Rates								
Nov-99		4.9	4.9	4.9	14.8	14.8	14.8	4.9
Dec-99		7.2	7.2	7.2	16.6	16.6	16.6	6.9
Jan-00		8.2	8.2	8.2	8.8	8.8	8.8	6.0
Feb-00		4.8	4.5	4.2	-0.4	-0.6	-0.7	4.2
Mar-00		5.5	4.8	4.1	4.3	4.0	3.6	5.9
Apr-00		7.7	6.9	6.1	7.6	7.2	6.8	5.4
May-00		3.9	3.2	2.5	5.0	4.7	4.4	4.5
Jun-00		5.7	5.1	4.6	6.0	5.8	5.6	5.4
Quarterly Averages								
1999 Q2		6.0	6.0	6.0	6.0	6.0	6.0	6.9
1999 Q3		5.5	5.5	5.5	5.3	5.3	5.3	6.0
1999 Q4		5.2	5.2	5.2	10.3	10.3	10.3	6.3
2000 Q1		6.6	6.4	6.3	8.7	8.6	8.5	5.7
2000 Q2		5.9	5.2	4.5	5.3	4.9	4.6	5.2
Growth Rate								
From	To							
Sep-99	Dec-99	5.5	5.5	5.5	13.9	13.9	13.9	6.0
Dec-99	Jun-00	6.0	5.5	5.0	5.3	5.0	4.8	5.3
Jan-00	Jun-00	5.6	4.9	4.3	4.5	4.3	4.0	5.1
1999 Q4	Mar-00	6.3	6.0	5.8	7.2	7.1	7.0	5.6
1999 Q4	Jun-00	6.1	5.7	5.2	6.9	6.7	6.4	5.4
1997 Q4	1998 Q4	8.5	8.5	8.5	10.9	10.9	10.9	6.7
1998 Q4	1999 Q4	6.2	6.2	6.2	7.6	7.6	7.6	6.6
1999 Annual Ranges:			1 to 5			2 to 6		3 to 7
2000 Annual Ranges: (provisional)			1 to 5			2 to 6		3 to 7

Chart 10

Actual and Projected M2

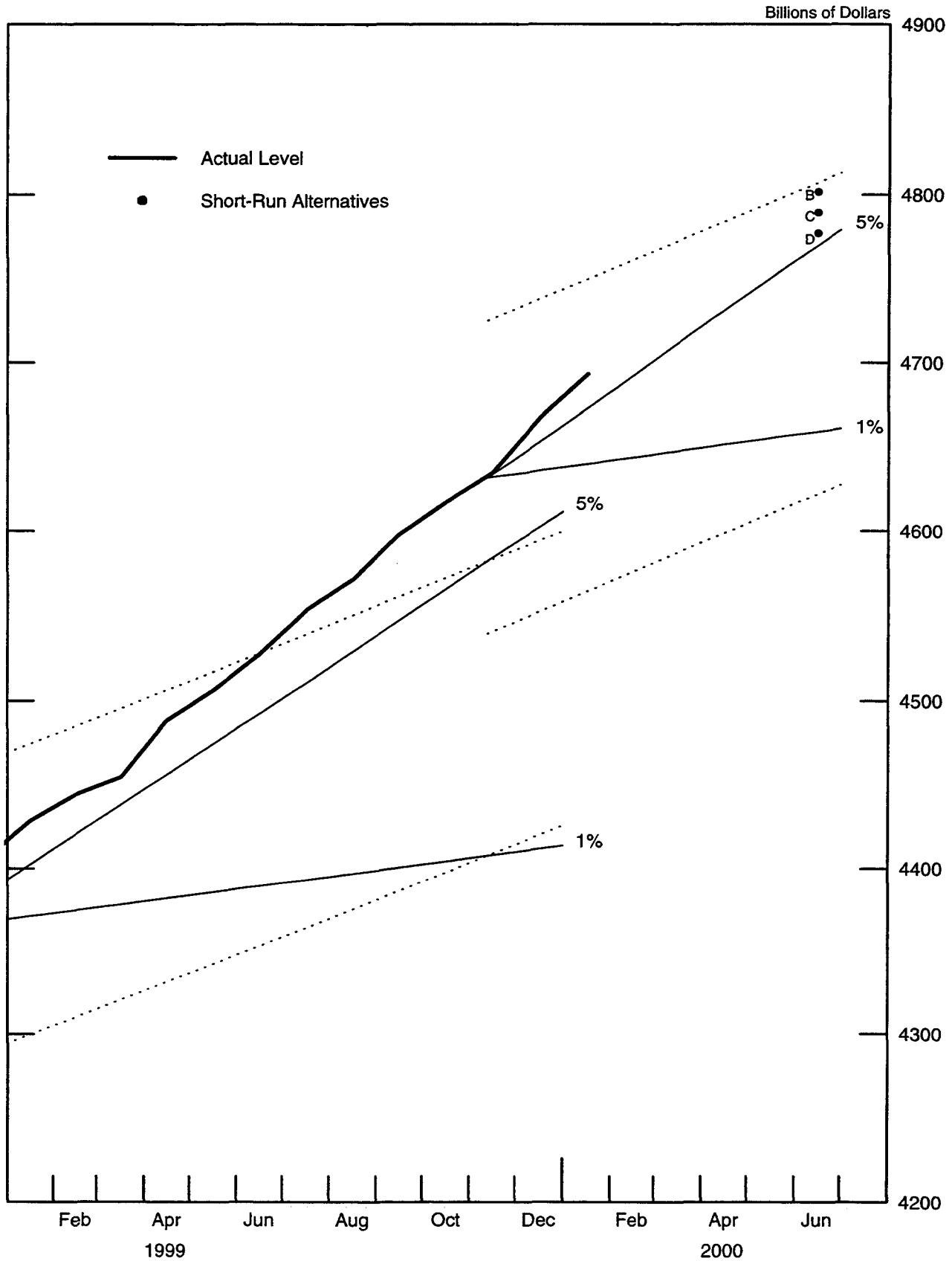

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Chart 11

Actual and Projected M3

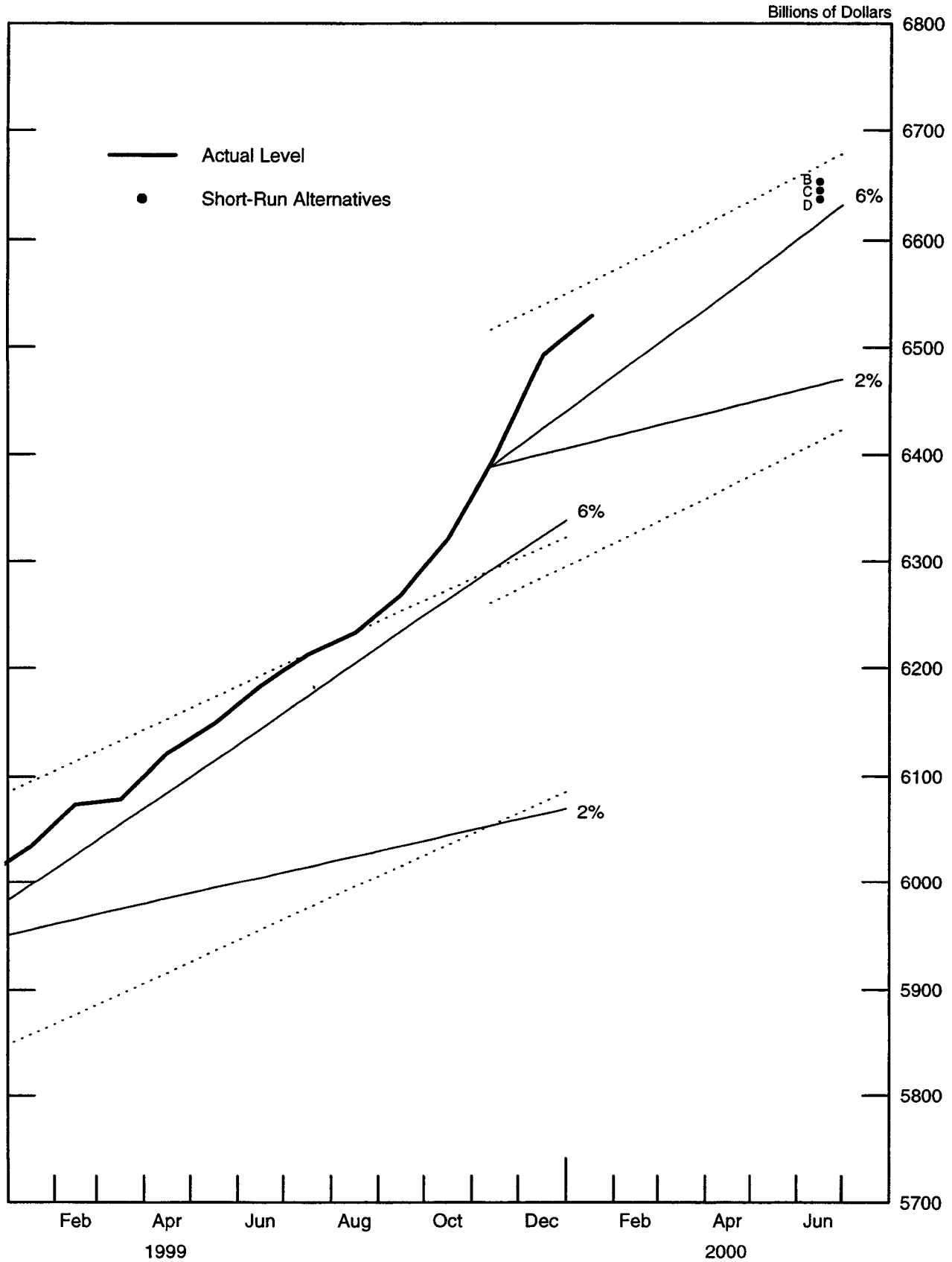

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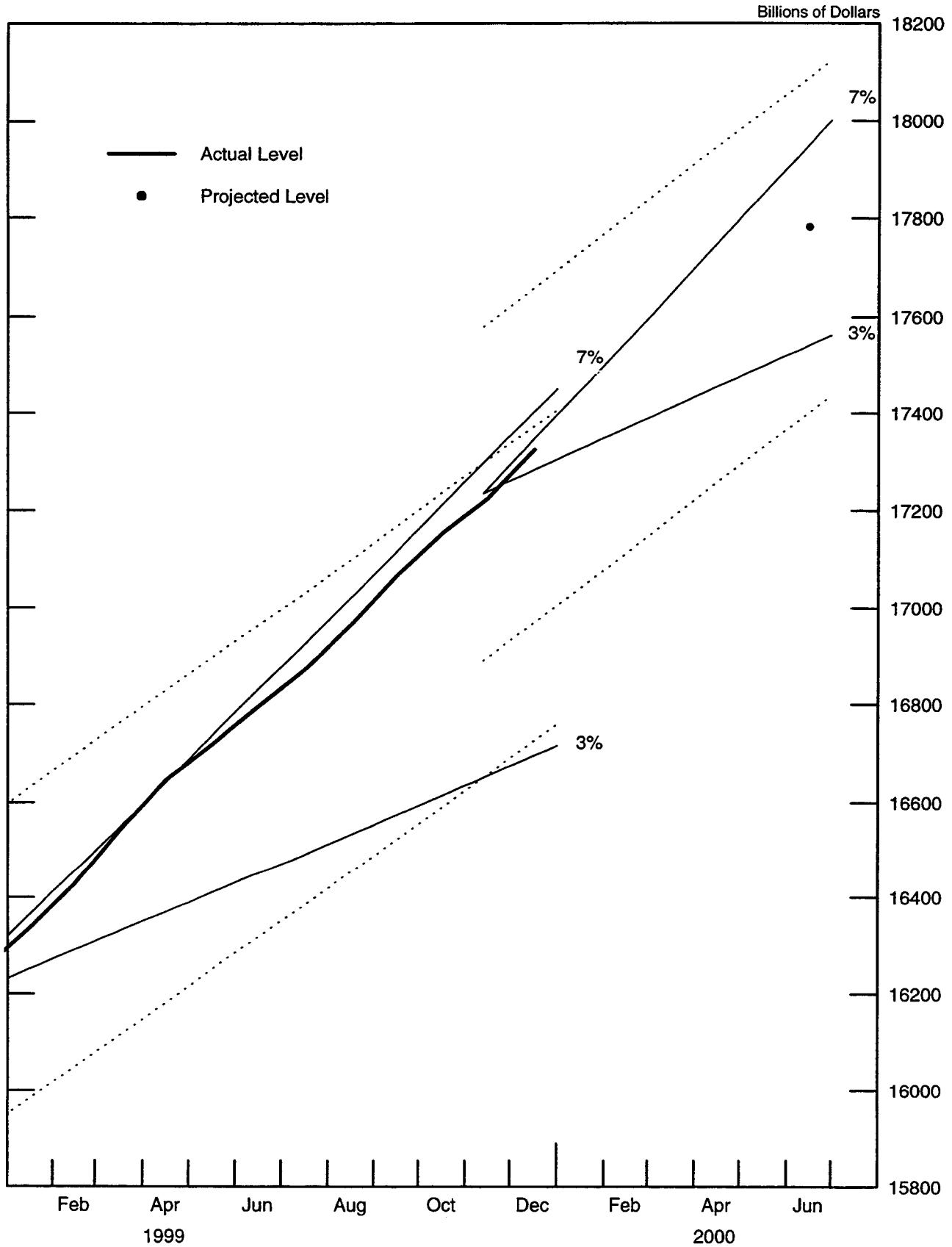
Chart 12.

Actual and Projected Debt



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Appendix A

ADOPTED LONGER-RUN RANGES FOR THE MONETARY AND CREDIT AGGREGATES

(percent annual rates)

	M1		M2		M3		Domestic Non-financial Debt[1]	
QIV 1979 - QIV 1980	4 - 6.5	(7.3)[2,3]	6 - 9	(9.8)	6.5 - 9.5	(9.9)	6 - 9	(7.9)
QIV 1980 - QIV 1981	3.5 - 6	(2.3)[2,4]	6 - 9	(9.4)	6.5 - 9.5	(11.4)	6 - 9	(8.8)[5]
QIV 1981 - QIV 1982	2.5 - 5.5	(8.5)[2]	6 - 9	(9.2)	6.5 - 9.5	(10.1)	6 - 9[6]	(7.1)[5]
QIV 1982 - QIV 1983	5 - 9[7]	(7.2)	7 - 10[8]	(8.3)	6.5 - 9.5	(9.7)	8.5 - 11.5	(10.5)
QIV 1983 - QIV 1984	4 - 8	(5.2)	6 - 9	(7.7)	6 - 9	(10.5)	8 - 11	(13.4)
QIV 1984 - QIV 1985	3 - 8[9]	(12.7)	6 - 9	(8.6)	6 - 9.5	(7.4)	9 - 12	(13.5)
QIV 1985 - QIV 1986	3 - 8	(15.2)	6 - 9	(8.9)	6 - 9	(8.8)	8 - 11	(12.9)
QIV 1986 - QIV 1987	n.s.[10]	(6.2)	5.5 - 8.5	(4.0)	5.5 - 8.5	(5.4)	8 - 11	(9.6)
QIV 1987 - QIV 1988	n.s.	(4.3)	4 - 8	(5.3)	4 - 8	(6.2)	7 - 11	(8.7)
QIV 1988 - QIV 1989	n.s.	(0.6)	3 - 7	(4.6)	3.5 - 7.5	(3.3)	6.5 - 10.5	(8.1)
QIV 1989 - QIV 1990	n.s.	(4.2)	3 - 7	(3.9)	1 - 5[11]	(1.8)	5 - 9	(6.9)
QIV 1990 - QIV 1991	n.s.	(8.0)	2.5 - 6.5	(3.1)	1 - 5	(1.3)	4.5 - 8.5	(4.5)
QIV 1991 - QIV 1992	n.s.	(14.3)	2.5 - 6.5	(1.9)	1 - 5	(0.5)	4.5 - 8.5	(4.6)
QIV 1992 - QIV 1993	n.s.	(10.5)	1 - 5[12]	(1.4)	0 - 4[12]	(0.6)	4 - 8[12]	(4.9)
QIV 1993 - QIV 1994	n.s.	(2.3)	1 - 5	(1.0)	0 - 4	(1.4)	4 - 8	(5.3)
QIV 1994 - QIV 1995	n.s.	(-1.8)	1 - 5	(4.2)	2 - 6[13]	(6.1)	3 - 7	(5.3)
QIV 1995 - QIV 1996	n.s.	(-4.6)	1 - 5	(4.6)	2 - 6	(6.8)	3 - 7	(5.0)
QIV 1996 - QIV 1997	n.s.	(-1.2)	1 - 5	(5.6)	2 - 6	(8.7)	3 - 7	(4.7)
QIV 1997 - QIV 1998	n.s.	(1.8)	1 - 5	(8.5)	2 - 6	(11.0)	3 - 7	(6.3)
QIV 1998 - QIV 1999	n.s.	(1.8)	1 - 5	(6.2)	2 - 6	(7.6)	3 - 7	(6.6)

NOTE: Numbers in parentheses are actual growth rates as reported at end of policy period in February Monetary Policy Report to Congress. Subsequent revisions to historical data (not reflected above) have altered growth rates by up to a few tenths of a percentage point.

n.s. -- not specified.

Footnotes on following page

1. Targets are for bank credit until 1983; from 1983 onward targets are for domestic nonfinancial sector debt.

2. The figures shown reflect target and actual growth of M1-B in 1980 and shift-adjusted M1-B in 1981. M1-B was relabeled M1 in January 1982. The targeted growth for M1-A was 3-1/2 to 6 percent in 1980 (actual growth was 5.0 percent); in 1981 targeted growth for shift-adjusted M1-A was 3 to 5-1/2 percent (actual growth was 1.3 percent).

3. When these ranges were set, shifts into other checkable deposits in 1980 were expected to have only a limited effect on growth of M1-A and M1-B. As the year progressed, however, banks offered other checkable deposits more actively, and more funds than expected were directed to these accounts. Such shifts are estimated to have decreased M1-A growth and increased M1-B growth each by at least ½ percentage point more than had been anticipated.

4. Adjusted for the effects of shifts out of demand deposits and savings deposits. At the February FOMC meeting, the target ranges for observed M1-A and M1-B in 1981 on an unadjusted basis, expected to be consistent with the adjusted ranges, were -(4-1/2) to -2 and 6 to 8-1/2 percent, respectively. Actual M1-B growth (not shift adjusted) was 5.0 percent.

5. Adjusted for shifts of assets from domestic banking offices to International Banking Facilities.

6. Range for bank credit is annualized growth from the December 1981 - January 1982 average level through the fourth quarter of 1982.

7. Base period, adopted at the July 1983 FOMC meeting, is 1983 QII. At the February 1983 meeting, the FOMC had adopted a 1982 QIV to 1983 QIV target range for M1 of 4 to 8 percent.

8. Base period is the February-March 1983 average.

9. Base period, adopted at the July 1985 FOMC meeting, is 1985 QII. At the February 1983 meeting, the FOMC had adopted a 1984 QIV to 1985 QIV target range for M1 of 4 to 7 percent.

10. No range for M1 has been specified since the February 1987 FOMC meeting because of uncertainties about its underlying relationship to the behavior of the economy and its sensitivity to economic and financial circumstances.

11. At the February 1990 meeting, the FOMC specified a range of 2-1/2 to 6-1/2 percent. This range was lowered to 1 to 5 percent at the July 1990 meeting.

12. At the February 1993 meeting, the FOMC specified a range of 2 to 6 percent for M2, ½ to 4-1/2 percent for M3, and 4-1/2 to 8-1/2 percent for domestic nonfinancial debt. These ranges were lowered to 1 to 5 percent for M2, 0 to 4 percent for M3, and 4 to 8 percent for domestic nonfinancial debt at the July 1993 meeting.

13. At the February 1995 FOMC meeting, the FOMC specified a range of 0 to 4 percent. This range was raised to 2 to 6 percent at the July 1995 meeting.

1/28/00 (MRA)

SELECTED INTEREST RATES
(percent)

January 31, 2000

	Short-term						Long-term									
	Federal funds	Treasury bills secondary market			CDs secondary market	Comm. paper	U.S. government constant maturity yields				Indexed yields		Moody's Baa	Municipal Bond Buyer	Conventional home mortgages primary market	
		3-month	6-month	1-year	3-month	1-month	3-year	5-year	10-year	30-year	5-year	10-year			Fixed-rate	ARM
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
98 -- High	5.87	5.24	5.24	5.23	5.74	5.71	5.70	5.72	5.75	6.05	3.93	3.82	7.42	5.52	7.22	5.71
-- Low	4.56	3.84	3.94	3.84	5.13	4.84	4.15	4.17	4.41	4.88	3.44	3.55	7.01	5.09	6.49	5.35
99 -- High	5.59	5.38	5.56	5.62	6.16	6.33	6.26	6.33	6.41	6.46	4.03	4.33	8.44	6.23	8.15	6.64
-- Low	4.42	4.20	4.30	4.29	4.86	4.76	4.58	4.56	4.67	5.12	3.61	3.76	7.24	5.17	6.74	5.56
Monthly																
Jan 99	4.63	4.34	4.33	4.31	4.89	4.80	4.61	4.60	4.72	5.16	3.73	3.81	7.29	5.23	6.79	5.60
Feb 99	4.76	4.44	4.44	4.48	4.90	4.80	4.90	4.91	5.00	5.37	3.70	3.79	7.39	5.27	6.81	5.65
Mar 99	4.81	4.44	4.47	4.53	4.91	4.82	5.11	5.14	5.23	5.58	3.84	3.90	7.53	5.31	7.04	5.77
Apr 99	4.74	4.29	4.37	4.45	4.88	4.79	5.03	5.08	5.18	5.55	3.72	3.90	7.48	5.29	6.92	5.60
May 99	4.74	4.50	4.56	4.60	4.92	4.79	5.33	5.44	5.54	5.81	3.65	3.85	7.72	5.37	7.15	5.72
Jun 99	4.76	4.57	4.82	4.82	5.13	4.95	5.70	5.81	5.90	6.04	3.78	3.94	8.02	5.53	7.55	5.91
Jul 99	4.99	4.55	4.58	4.75	5.24	5.06	5.62	5.68	5.79	5.98	3.94	4.01	7.95	5.61	7.63	5.99
Aug 99	5.07	4.72	4.87	4.91	5.41	5.18	5.77	5.84	5.94	6.07	3.96	4.03	8.15	5.81	7.94	6.18
Sep 99	5.22	4.68	4.88	4.96	5.50	5.28	5.75	5.80	5.92	6.07	3.89	4.05	8.20	5.92	7.82	6.20
Oct 99	5.20	4.86	4.98	5.12	6.13	5.28	5.94	6.03	6.11	6.26	3.85	4.12	8.38	6.12	7.85	6.27
Nov 99	5.42	5.07	5.20	5.24	6.00	5.37	5.92	5.97	6.03	6.15	3.87	4.10	8.15	6.10	7.74	6.36
Dec 99	5.30	5.20	5.44	5.51	6.05	5.97	6.14	6.19	6.28	6.35	3.99	4.25	8.19	6.18	7.91	6.53
Weekly																
Nov 26 99	5.57	5.12	5.27	5.33	5.96	5.47	6.00	6.03	6.10	6.22	3.91	4.11	8.12	6.11	7.75	6.45
Dec 3 99	5.59	5.13	5.33	5.39	6.00	5.63	6.08	6.13	6.20	6.30	3.93	4.15	8.17	6.14	7.84	6.49
Dec 10 99	5.44	5.09	5.33	5.37	6.03	5.88	6.00	6.03	6.13	6.22	3.94	4.17	8.08	6.13	7.84	6.45
Dec 17 99	5.44	5.23	5.48	5.51	6.08	6.16	6.11	6.14	6.24	6.32	3.98	4.24	8.17	6.17	7.86	6.49
Dec 24 99	5.38	5.38	5.56	5.62	6.16	6.33	6.26	6.30	6.39	6.46	4.03	4.33	8.29	6.22	7.96	6.64
Dec 31 99	4.80	5.17	5.47	5.60	6.00	5.71	6.26	6.33	6.41	6.46	4.03	4.32	8.24	6.23	8.06	6.56
Jan 7 00	5.05	5.26	5.48	5.68	5.93	5.54	6.39	6.46	6.56	6.58	4.04	4.35	8.25	6.25	8.15	6.60
Jan 14 00	5.62	5.26	5.43	5.74	5.96	5.56	6.48	6.56	6.66	6.66	4.05	4.38	8.37	6.29	8.18	6.61
Jan 21 00	5.54	5.31	5.53	5.76	5.95	5.61	6.53	6.65	6.77	6.73	4.09	4.39	8.44	6.35	8.26	6.56
Jan 28 00	5.49	5.41	5.55	5.73	5.94	5.63	6.54	6.63	6.68	6.57	4.06	4.32	--	6.34	8.25	6.65
Daily																
Jan 12 00	5.59	5.29	5.45	5.78	5.96	5.58	6.53	6.63	6.72	6.71	4.04	4.37	8.40	--	--	--
Jan 13 00	5.58	5.25	5.42	5.73	5.95	5.58	6.45	6.54	6.63	6.65	4.04	4.35	8.38	--	--	--
Jan 14 00	5.56	5.25	5.44	5.76	5.94	5.56	6.49	6.59	6.69	6.69	4.08	4.38	8.42	--	--	--
Jan 17 00	5.56	--	--	--	--	--	--	--	--	--	4.09	4.39	--	--	--	--
Jan 18 00	5.83	5.24	5.43	5.77	5.95	5.59	6.53	6.65	6.75	6.75	4.09	4.39	8.47	--	--	--
Jan 19 00	5.47	5.35	5.53	5.75	5.95	5.62	6.51	6.62	6.73	6.72	4.11	4.40	8.43	--	--	--
Jan 20 00	5.44	5.32	5.58	5.76	5.95	5.61	6.55	6.67	6.79	6.74	4.09	4.39	8.45	--	--	--
Jan 21 00	5.36	5.31	5.57	5.75	5.94	5.62	6.54	6.67	6.79	6.71	4.08	4.36	8.42	--	--	--
Jan 24 00	5.53	5.32	5.57	5.75	5.94	5.63	6.48	6.59	6.69	6.65	4.07	4.36	8.36	--	--	--
Jan 25 00	5.46	5.40	5.53	5.75	5.94	5.60	6.50	6.60	6.70	6.64	--	--	8.33	--	--	--
Jan 26 00	5.52	5.41	5.53	5.76	5.93	5.65	6.51	6.62	6.69	6.60	4.07	4.32	8.28	--	--	--
Jan 27 00	5.61	5.42	5.54	5.79	5.94	5.64	6.58	6.67	6.68	6.53	4.07	4.32	8.23	--	--	--
Jan 28 00	5.57 p	5.48	5.60	5.60	5.96	--	6.62	6.68	6.66	6.45	4.06	4.31	--	--	--	--

NOTE: Weekly data for columns 1 through 13 are week-ending averages. As of September 1997, data in column 6 are interpolated from data on certain commercial paper trades settled by the Depository Trust Company; prior to that, they reflect an average of offering rates placed by several leading dealers. Column 14 is the Bond Buyer revenue index, which is a 1-day quote for Thursday. Column 15 is the average contract rate on new commitments for fixed-rate mortgages (FRMs) with 80 percent loan-to-value ratios at major institutional lenders. Column 16 is the average initial contract rate on new commitments for 1-year, adjustable-rate mortgages (ARMs) at major institutional lenders offering both FRMs and ARMs with the same number of discount points.

p - preliminary data

MFMA:IXA

Strictly Confidential (FR)-
Class II FOMC

January 31, 2000

Money and Debt Aggregates

Seasonally adjusted

Period	Money stock measures					Domestic nonfinancial debt		
	M1	M2	nontransactions components		M3	U. S. government[1]	other[1]	total[1]
			In M2	In M3 only				
	1	2	3	4	5	6	7	8
Annual growth rates(%):								
Annually (Q4 to Q4)								
1997	-1.2	5.6	8.4	19.9	8.9	0.8	6.7	5.2
1998	2.2	8.5	10.8	18.3	10.9	-1.1	9.3	6.7
1999	1.8	6.2	7.7	11.6	7.6			
Quarterly(average)								
1999-Q1	1.9	7.5	9.3	10.1	8.2	-3.1	9.6	6.7
Q2	2.2	6.0	7.3	5.9	6.0	-2.3	9.7	6.9
Q3	-2.0	5.5	7.9	4.7	5.3	-0.3	7.7	6.0
Q4	4.9	5.2	5.3	24.2	10.3			
Monthly								
1999-Jan.	-1.5	6.9	9.7	4.9	6.4	-2.6	9.1	6.4
Feb.	-1.9	6.9	9.7	17.9	9.8	-6.1	10.4	6.7
Mar.	7.8	4.3	3.1	-4.3	1.9	0.0	10.9	8.4
Apr.	6.3	7.2	7.5	6.6	7.1	-1.7	10.2	7.5
May	-5.9	6.1	10.0	7.3	6.4	-5.1	8.3	5.3
June	-1.7	4.8	6.9	9.6	6.1	0.3	6.9	5.5
July	-0.9	6.0	8.1	2.0	4.9	1.4	6.8	5.6
Aug.	-1.2	5.1	7.1	1.7	4.2	1.0	8.3	6.7
Sep.	-3.1	5.6	8.3	6.5	5.8	-4.2	10.1	7.0
Oct.	5.7	4.5	4.1	24.6	9.8	-5.8	9.5	6.2
Nov.	9.0	4.9	3.6	41.6	14.8	-7.7	8.4	4.9
Dec.	15.8	7.2	4.5	41.3	16.6			
2000-Jan. pe	1	8	11	11	9			
Levels ($billions):								
Monthly								
1999-Aug.	1098.3	4572.9	3474.5	1661.6	6234.5	3711.0	13256.8	16967.9
Sep.	1095.5	4594.1	3498.6	1670.6	6264.8	3698.1	13368.7	17066.8
Oct.	1100.7	4611.2	3510.5	1704.9	6316.1	3680.1	13474.8	17155.0
Nov.	1109.0	4630.0	3520.9	1764.0	6394.0	3656.5	13568.6	17225.1
Dec.	1123.6	4657.7	3534.1	1824.7	6482.4			
Weekly								
1999-Dec. 6	1111.0	4639.9	3529.0	1776.3	6416.3			
13	1110.7	4650.2	3539.5	1813.8	6463.9			
20	1120.9	4663.2	3542.3	1828.8	6492.0			
27	1135.7	4665.5	3529.8	1850.8	6516.4			
2000-Jan. 3	1148.3	4672.1	3523.8	1864.4	6536.5			
10p	1116.7	4677.0	3560.3	1832.5	6509.5			
17p	1118.7	4678.2	3559.5	1840.7	6518.9			

1. Debt data are on a monthly average basis, derived by averaging end-of-month levels of adjacent months, and have been adjusted to remove discontinuities.

p preliminary

January 28, 2000

NET CHANGES IN SYSTEM HOLDINGS OF SECURITES[1]
Millions of dollars, not seasonally adjusted

Period	Treasury bills			Treasury coupons						Federal agencies redemptions (-)	Net change outright holdings total	Net RPs
	Net purchases[2]	Redemptions (-)	Net change	Net purchases				Redemptions (-)	Net Change			
					1-5	5-10	over 10					
1997	9,147	---	9,147	5,549	20,080	3,449	5,897	1,996	32,979	1,540	40,586	-5,202
1998	3,550	2,000	1,550	6,297	12,901	2,294	4,884	2,676	23,699	322	24,902	-11,981
1999	---	---	---	11,895	19,731	4,303	9,428	1,429	43,928	157	43,771	-1,599
1998 ---Q1	---	2,000	-2,000	1,501	2,262	283	743	478	4,311	60	2,251	-12,184
---Q2	3,550	---	3,550	1,369	2,993	495	---	286	4,571	99	8,022	-13,549
---Q3	---	---	---	2,024	4,524	654	1,769	1,311	7,659	98	7,536	-10,034
---Q4	---	---	---	1,403	3,122	862	2,372	602	7,158	65	7,093	-9,477
1999 ---Q1	---	---	---	3,163	5,180	681	3,019	492	11,551	27	11,524	-8,004
---Q2	---	---	---	3,978	8,751	2,594	3,152	726	17,749	52	17,697	-10,271
---Q3	---	---	---	2,341	1,272	447	1,075	41	5,094	21	5,073	-8,257
---Q4	---	---	---	2,414	4,528	581	2,182	170	9,535	57	9,478	22,883
1999 January	---	---	---	---	---	---	615	492	123	2	121	-7,799
February	---	---	---	2,103	2,752	335	---	---	5,190	---	5,190	-10,380
March	---	---	---	1,060	2,428	346	2,404	---	6,238	25	6,213	-7,243
April	---	---	---	1,677	3,362	945	262	726	5,520	---	5,520	-8,603
May	---	---	---	1,421	4,442	1,584	2,890	---	10,337	---	10,337	-10,368
June	---	---	---	880	948	65	---	---	1,893	52	1,841	-12,644
July	---	---	---	951	---	---	---	41	910	10	900	-11,355
August	---	---	---	429	1,272	447	1,075	---	3,223	11	3,212	-10,868
September	---	---	---	960	---	---	---	---	960	---	960	-4,894
October	---	---	---	---	---	---	---	170	-170	50	-220	-30
November	---	---	---	964	1,014	---	925	---	2,903	7	2,896	17,495
December	---	---	---	1,450	3,514	581	1,257	---	6,802	---	6,802	46,578
Weekly												
October 27	---	---	---	---	---	---	---	---	---	10	-10	373
November 3	---	---	---	---	---	---	---	---	---	---	---	7,313
10	---	---	---	---	---	---	---	---	---	7	-7	8,703
17	---	---	---	964	---	---	---	---	964	---	964	18,106
24	---	---	---	---	1,014	---	925	---	1,939	---	1,939	19,496
December 1	---	---	---	---	---	---	---	---	---	---	---	29,351
8	---	---	---	---	---	---	875	---	875	---	875	29,293
15	---	---	---	---	1,257	581	382	---	2,220	---	2,220	36,513
22	---	---	---	1,450	1,372	---	---	---	2,822	---	2,822	43,994
29	---	---	---	---	885	---	---	---	885	---	885	65,181
January 5	---	---	---	---	---	---	---	---	---	---	---	83,870
12	---	---	---	---	---	---	---	---	---	---	---	31,582
19	---	---	---	---	---	---	---	390	-390	---	-390	14,583
26	---	---	---	---	350	619	---	---	969	6	963	5,266
Memo: LEVEL (bil. $)												
January 26			215.7	60.7	124.3	50.7	66.3		302.0		517.9	2.6

1. Change from end-of-period to end-of-period.
2. Outright transactions in market and with foreign accounts.
3. Outright transactions in market and with foreign accounts, and short-term notes acquired in exchange for maturing bills. Excludes maturity shifts and rollovers of maturing issues.
4. Reflects net change in redemptions (-) of Treasury and agency securities.
5. Includes change in RPs (+) and matched sale-purchase transactions (-).