## Prefatory Note

The attached document represents the most complete and accurate version available based on original copies culled from the files of the FOMC Secretariat at the Board of Governors of the Federal Reserve System. This electronic document was created through a comprehensive digitization process which included identifying the bestpreserved paper copies, scanning those copies, ${ }^{1}$ and then making the scanned versions text-searchable. ${ }^{2}$ Though a stringent quality assurance process was employed, some imperfections may remain.

Please note that this document may contain occasional gaps in the text. These gaps are the result of a redaction process that removed information obtained on a confidential basis. All redacted passages are exempt from disclosure under applicable provisions of the Freedom of Information Act.

[^0]January 29,1999

## Monetary Policy Alternatives

## MONETARY POLICY ALTERNATIVES

## Recent Developments

(1) The decision to leave the intended level of the federal funds rate unchanged at the

December FOMC meeting was widely expected and produced little reaction in financial
markets. ${ }^{1}$ Since then, long-term Treasury rates have moved up a little, on balance (Chart 1);
apparently, incoming data suggesting stronger-than-expected economic growth more than offset a tendency for developments in Brazil to spur safe-haven demands for dollar assets or to generate expectations of some spillover directly into the U.S. economy. Federal funds and eurodollar futures rates also edged up over the intermeeting period and now suggest investors see little possibility of an ease at the February meeting but still place some odds on easing by mid-year. Short-term interest rates moved down over the intermeeting period. Private yields for lowerrated firms fell as much as 1 percentage point as the influence of year-end pressures disappeared; Treasury bill rates, which edged lower, may have been depressed by the Treasury's unanticipated cut-back in bill issuance as well as purchases by Japanese authorities in association with

1. The trading level of the federal funds rate averaged 4.58 percent over the intermeeting period, below the 4-3/4 percent intended level. Undershoots in the first two maintenance periods were related to the Desk's efforts to minimize year-end pressures. Banks exhibited extra caution in the days leading up to the year-end, bidding aggressively for funds early in the day. The Desk met these higher demands, but at times the additional reserves supplied led to very low funds rates late in the day. On the last day of the year (and the first day of a maintenance period), excess reserves stood at an extremely high $\$ 12.7$ billion. The Desk's subsequent efforts to reduce reserves following the long New Year weekend were frustrated by several days of unanticipated weather-related float. In the event, year-end firmness in the reserves market was well below market expectations and low also relative to the experience of recent years. In the early weeks of the year, the low levels of operating balances constrained the size of daily reserve deficiencies the Desk was willing to engineer, though these deficiencies at times were near record levels.


Federal Funds Futures



Selected Long-Term Interest Rates


Change In Implied One-Year Forward Rates
Since 12/21/1998
Basis Points


Nominal Trade-Weighted Dollar
Exchange Rates Index $(5 / 1 / 98=100)$

intervention. Broad indexes of equity prices have increased considerably since the last meeting, supported in part by unexpectedly good earnings reports for the fourth quarter. The performance of shares of technology firms was particularly strong.
(2) Despite developments in Brazil, most measures of domestic credit market stress either stabilized or showed some further improvement over the intermeeting period. Yield spreads for corporate bonds over Treasuries narrowed slightly further but remain well above the low levels of recent years (Chart 2). Rate spreads in the commercial paper market, which had been boosted considerably by year-end pressures, essentially returned to levels prevailing before the Russian default. Implied volatilities on longer- and shorter-term debt instruments also have moved down on net over the intermeeting period. Responses to the January bank lending officer survey suggest that a much smaller proportion of domestic banks were tightening lending standards over the past couple of months than in the fall, although the number of foreign banks tightening standards remained quite high in the recent period; both sets of banks reported some further tightening of lending terms.
(3) Since the December FOMC meeting, the exchange value of the dollar is about unchanged on balance, as measured by the major currencies index, but has risen 1-1/2 percent versus the currencies of a broad group that also includes other important trading partners. The sharp increases in Japanese government bond yields in late December may have contributed to a rise in the yen against the dollar to a level not seen in over two years, prompting the Japanese authorities to intervene in mid-January. The dollar appreciated over 4 percent relative to the yen immediately following the intervention, and it has drifted higher since then, ending the intermeeting period about unchanged. The euro depreciated more than 2-1/2 percent on balance

Short-Term Interest

Rate Spreads*

"Three-month eurodollar spreao is relative to the three-month Treasury bill rate.
One-month commercial paper spread is relative to the one-month repo rate.
On-the-Run Premiums for Treasury Securities*
Thirty-year Bond
Basis Points

*Spreads of next-to-most-recently over most-recently issued security. Note. The new thirty-year Treasury security was issued on $11 / 16$.


Bond Yield Spreads*

*High yield spread is relative to the seven-year treasury yield.
BBB corporate spread is relative to the ten-year Treasury yield.


Average Stripped Brady Bond Spread* Basis Points

*J.P. Morgan Emerging Market Bond Index, an average of stripped Brady bond yield spreads over Treasuries for 10 emerging market countries.
since trading in the currency began on January 4, as data releases confirmed a slowdown in growth and the lack of inflationary pressures in many parts of the euro area, particularly in Germany. The Bank of England lowered its repo rate 25 basis points on January 7, surprising most market analysts, who had not expected another cut so soon, and the dollar appreciated about 2 percent with respect to sterling.

The Desk did not intervene on behalf of the System or the Treasury.
(4) Prices of emerging market financial assets were importantly influenced by events in Brazil. The declaration on January 6 by the state of Menas Gerais of a moratorium in its debt payments to the central government, a relatively minor event in its own right, crystallized fears that the Brazilian central government would be unable to accomplish the deep fiscal reforms seen as the only sustainable solution to its financial problems. Faced by continuing outflows of capital, Brazilian authorities were eventually forced to let the real float. The initial reaction was euphoric in Brazilian stock and bond markets, but in subsequent days, the real depreciated further and capital outflows continued despite rising domestic short-term interest rates. On balance over the intermeeting period, the real depreciated about 40 percent, equity prices rose 14 percent, and Brady bond yield spreads widened about 275 basis points. The perceived risk of contagion to the rest of Latin America was evidenced by increases in the Brady yield spreads for other Latin American countries ranging from 40 to 250 basis points, increases in domestic interest rates, and a 3-3/4 percent appreciation of the dollar versus the Mexican peso. In addition, the widely publicized announcement by Argentina that it was considering a full dollarization of its economy was seen, at least in part, as an attempt to insulate its currency board regime from
the Brazilian crisis. The impact of the Brazilian crisis was also felt in emerging Asia, with rumors of possible devaluations in Hong Kong and China resurfacing in foreign exchange markets. Nonetheless, changes in interest rates, stock prices, and currency values were mixed in the region over the intermeeting period as weakness in the latter part of the period offset strength earlier in the period in many economies.
(5) M2 and M3 advanced in December at rates of 10-1/4 and 11-1/2 percent, respectively, extending the rapid growth that began in the fall and leaving expansion during the fourth quarter the fastest quarterly advance of the year for both aggregates. ${ }^{2}$ The liquid components of M2 and M3, especially money market funds, were particularly strong, both in the month and over the quarter. Money growth likely has been bolstered by the effects of the recent policy easings on opportunity costs, strong nominal GDP, and perhaps as well continued heightened demands for liquid and safe assets. The velocities of M2 and M3 in the fourth quarter fell at the fastest rates in many years--and, in the case of M 2 , faster than would have been predicted based on historical relationships with opportunity costs. Monetary growth has moderated appreciably so far in the new year, and, averaging over December and January, both aggregates have slowed, as expected in the last bluebook.
(6) The growth of the total debt of the nonfederal sectors remained rapid over the fourth quarter, averaging 9 percent. In the household sector, strong spending on durable goods and housing in an environment of low interest rates has generated robust demands for consumer and residential mortgage credit. Businesses, too, have borrowed heavily in recent months to fund
2. Data on the monetary aggregates reflect the benchmark and seasonal revisions to be published in early February.
both continued rapid growth in capital outlays in the face of sluggish profit growth and large cash-financed equity retirements. Although spreads on corporate bonds remain wide, markets are receptive, dealers are more willing to take positions, and, outside the junk bond sector, yield levels are no higher than earlier last year. Investment-grade bond issuance of nonfinancial firms surged in November and remained strong in December before moderating a bit in January. A considerable part of these longer-term funds has been used to pay down short-term debt, including commercial paper and bank loans, which boomed in the fall when longer-term capital markets were disrupted. The recovery of junk bond issuance that began in November has extended into the new year, including a sharp rise in its lower-tier component. State and local borrowing stayed brisk through year-end, spurred by new spending projects and pre-funding to take advantage of low interest rates. The federal government continued to pay down debt, holding total nonfinancial sector debt growth to about a 6-1/4 percent rate over the fourth quarter.

MONEY, CREDIT, AND RESERVE AGGREGATES
(Seasonally adjusted annual percentage rates of growth)
1997:Q4
to
Nov. Dec. Jan. 1998:Q4

Money and Credit Aggregates

| M1 | 9.4 | 4.5 | -5.5 | 1.8 |
| :--- | ---: | ---: | ---: | ---: |
| Adjusted for sweeps | 9.6 | 6.9 | -3.2 | 6.0 |
| M2 | 10.9 | 10.3 | 6.1 | 8.7 |
| M3 | 14.1 | 11.5 | 4.3 | 11.1 |
|  |  |  |  |  |
| Domestic nonfinancial debt | 6.6 | 6.1 | n.a. | 6.3 |
| $\quad$ Federal | -0.5 | -0.4 | n.a. | -1.2 |
| $\quad$ Nonfederal | 8.8 | 8.2 | n.a. | 8.8 |
| Bank credit $^{\text {Adjusted }}{ }^{\text { }}$ |  |  |  |  |
|  | 10.6 | 5.6 | -3.4 | 11.2 |
|  | 17.8 | 4.1 | -2.0 | 10.4 |

## Reserve Measures

| Nonborrowed reserves | 7.5 | 8.1 | -2.9 | -3.4 |
| :--- | ---: | ---: | ---: | ---: |
| Total reserves | 5.0 | 9.0 | -0.9 | -3.6 |
| $\quad$ Adjusted for sweeps | 7.2 | 11.6 | 1.4 | 6.1 |
| $\quad$ Monetary base | 8.8 | 8.3 | 13.4 | 7.1 |
| $\quad$ Adjusted for sweeps | 8.9 | 8.7 | 12.9 | 8.0 |

Memo: (millions of dollars)

| Adjustment plus seasonal borrowing | 84 | 117 | 192 | -- |
| :--- | :---: | :---: | :---: | :---: |
| Excess reserves | 1624 | 1583 | 1542 | -- |

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 highlights some important risks to the outlook. The staff FRB/US model is used to extend the Greenbook forecast for a number of years and to examine both a policy designed to achieve price stability and the effects of alternative assumptions about important features of aggregate demand and supply.
(8) Under the baseline scenario, monetary policy firms in the years beyond the Greenbook horizon in order bring the unemployment rate gradually up to the NAIRU. ${ }^{3}$ In the baseline, many of the forces at work over 1999 and 2000 persist in the following years and cap the rise in inflation. On the supply side of the economy, the relative price of oil rises slowly, potential GDP expands at a 2-3/4 percent rate, and the long-run NAIRU remains at the staff's current estimate of a little under 5-1/2 percent--though, over the intermediate term in the baseline the effective NAIRU is a bit higher to offset the inflationary impetus of a falling dollar. Among the factors influencing aggregate demand, the federal budget surplus as a percent of nominal GDP averages around its level in 2000 , and the stock of federal debt falls from 45 percent to almost 10 percent of nominal GDP over the next ten years. The relatively moderate rate of decline in the ratio of stock-market wealth to nominal GDP over the Greenbook forecast period is extended through 2003, but the ratio then stabilizes at a level equal to that of mid-1997.
3. 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 underlying structure of the economy. Under this expectations mechanism, the model has a sacrifice ratio over five years of about 2-1/2: That is, the equivalent of a $2-1 / 2$ percentage point increase in the unemployment rate sustained for a year would eventually imply a 1 percentage point lower inflation rate.

Foreign real GDP growth is assumed to pick up to almost 3-3/4 percent in 2001 and thereafter. The foreign exchange value of the dollar, using the broad index, depreciates in real terms by about $1-1 / 2$ percent per year over the Greenbook forecast period on average, but at a 5 percent annual rate over the extended forecast horizon. This depreciation causes the current account deficit to level off in the out years, albeit at about 5 percent of nominal GDP. ${ }^{4}$
(9) In the baseline scenario, shown by the solid lines in Chart 3, core PCE inflation rises over the Greenbook forecast period and beyond. ${ }^{5}$ The unemployment rate is about a full percentage point below the NAIRU at the beginning of 2001 , oil prices are on the upswing, and the dollar continues to depreciate. The Committee is assumed to start tightening immediately after the Greenbook horizon, raising the nominal federal funds rate to nearly 6-1/2 percent in 2002, a level sufficient to halt the rise in inflation at 2-3/4 percent. The funds rate falls subsequently, but like the unemployment rate, to a level somewhat above its long-run equilibrium path in order to offset the price effects of the continuing depreciation of the dollar. The alternative strategy, shown by the dotted lines, is designed to achieve price stability--
4. After having increased over the past few years owing to rising equity prices and persistent strength in aggregate demand, the equilibrium real funds rate in the baseline simulation is on a slight downward trend going forward. In this projection, declines in the ratios of total outstanding equity and federal debt to GDP and an increase in net indebtedness to foreigners (implying more of total wealth is owned by nonresidents) lower the national wealth-to-income ratio. This decline induces households to raise their saving rate, thereby reducing the equilibrium real funds rate. The real depreciation of the dollar provides only a partial offset.
5. In the charts, inflation is measured by the core PCE chain-weight price index, and past movements in this index are used to proxy for inflation expectations in calculations of the real funds rate. Core PCE inflation (on a $\mathrm{Q} 4 / \mathrm{Q} 4$ basis) was $1-1 / 4$ percentage points below inflation measured by the core CPI in 1998. This gap is expected to narrow to about 75 basis points by 2000, in part because of methodological changes to be incorporated into the CPI in 1999.

## Alternative Strategies for Monetary Policy



## Civilian Unemployment Rate



PCE Inflation (ex. food and energy)
(Four-quarter percent change)

Percent


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.
defined as core PCE inflation of $3 / 4$ percent, most of which is accounted for by measurement bias. This strategy calls for the Committee to begin tightening early in 1999 to head off some of the intensifying inflationary pressures in the Greenbook forecast. ${ }^{6}$ This prompt response allows the rise in the nominal funds rate to be gradual and moderate, amounting to about a percentage point over the next three years, although some of that increase occurs after unemployment turns up and inflation turns down. Achieving price stability requires pushing up the real federal funds rate and the unemployment rate to rather high levels for some time because labor markets remain strained for the first several years and there are ongoing adverse supply developments over the entire period.
(10) The persistent favorable surprises in inflation witnessed over recent years can be explained in a Phillips curve framework by some combination of an unanticipated step-down in the NAIRU and favorable shocks to prices and labor compensation. The simulations shown in Chart 4 look at the implications for monetary policy of some variations from the assumptions in the baseline forecast about these factors. The lower NAIRU scenario (the dot-dash lines) assumes that the natural rate of unemployment fell to $4-1 / 2$ percent in the mid-1990s, implying that the recent slowdown in inflation has resulted more from a changed labor market structure and less from temporary price shocks than in the staff analysis. With the lower NAIRU, the labor
2. In this and most of the following scenarios, the Committee is assumed to respond to deviations from the baseline by following the Taylor rule for setting the nominal funds rate. In that rule, the funds rate is set equal to an estimate of the real equilibrium funds rate plus an inflation premium, measured by actual inflation, plus policy responses of $1 / 2$ times the current output gap (in percent terms) and $1 / 2$ times the current deviation of inflation from its target. In our implementation of this rule, inflation is measured as the four-quarter percent change in the total PCE chain-weight price index. For this price stability scenario, the shift to the lower inflation target is phased in over two years.

Chart 4
Supply-Side Risks


Civilian Unemployment Rate


PCE Inflation (ex. food and energy)
(Four-quarter percent change)


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.
market is currently close to balance, the real funds rate is now at its natural rate, and the Committee can cap core PCE inflation at about 2 percent going forward by having the nominal funds rate parallel the slight downward trajectory of the equilibrium real funds rate. In contrast to this favorable outcome, the adverse price shocks scenario (shown by the dotted lines) examines a situation in which the staff analysis of inflation has been essentially correct, but previous beneficial price shocks reverse by more than in the baseline. Specifically, this simulation is based on the assumption that oil prices climb $\$ 5$ above their baseline level by the end of 1999 and maintain this gap in real terms thereafter, and the costs of employee benefits rise at a pace 1 percentage point faster than in the baseline over the next four years. ${ }^{7}$ In response to higher total PCE inflation, which rises more rapidly than core inflation because of the effect of energy costs, the Committee (following the Taylor rule) raises the federal funds rate starting in early 1999. The policy response to adverse price shocks under the Taylor rule means that both inflation and unemployment run above the baseline for a while--in effect, the obverse of the previous few years, when favorable price developments were taken in both lower inflation and lower unemployment.
(11) Spending on producers' durable equipment in 1998 was considerably stronger than forecast by the staff one year ago. Chart 5 presents domestic demand risk scenarios keyed off alternatives to the baseline path for investment demand. The stronger demand scenario, shown by the dotted lines, embodies additional--but gradually diminishing--investment surprises
2. Over time, wage gains might be expected to moderate to offset the higher growth of benefits. However, the historical relationship is at times loose, in that episodes of unusual growth in benefits lasting several years have not always been mirrored by compensating changes in wages.

## Chart 5

Domestic Demand Risks


PCE Inflation (ex. food and energy)
(Four-quarter percent change)


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.
in 1999 and beyond that have the cumulative effect of raising the stock of producers' durable equipment 7 percent above the baseline. This increase in the capital stock ultimately boosts the levels of labor productivity and output in the nonfarm sector about 1 percent. Over the near term, however, the resulting increment to aggregate supply falls considerably short of the stimulus to demand. Although the unemployment rate falls, inflationary pressures are contained by the uptick in productivity and the prompt response of the Federal Reserve. The Committee is assumed to start tightening early in 1999 and to raise the federal funds rate to 7 percent by 2002 in order to keep inflation at 2-3/4 percent in the long run. The weaker demand scenario (shown by the dot-dash lines) interprets a portion of the investment surge of recent years, not as an indication of a permanent increase in desired capital stocks relative to their baseline levels, but as a reflection of overly optimistic firms. In this scenario, firms reassess their capital stock needs and scale back the pace of accumulation over the next few years. With aggregate demand softer, the Committee, following the Taylor rule, would substantially reduce the funds rate in 1999 and 2000. Thereafter, as the downward demand shock wears off and the fundamental imbalances present in the baseline show through in rising inflation, the Committee begins to firm policy in parallel with the baseline path.
(12) The staff has built into the baseline a gradual depreciation of the dollar that limits the deterioration of the current account and the rate of increase in the net foreign indebtedness of the United States. However, exchange-rate adjustments are typically not so gradual, and Chart 6 presents a weaker dollar scenario in which the depreciation of the dollar that is assumed over the baseline horizon is more front-loaded: The dollar depreciates very sharply by the end of 2000 , but converges with the falling baseline path by 2010. The depreciation of the dollar

## Chart 6

## U.S. Dollar Depreciation



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.
imparts both an aggregate demand shock--as the relative price change spurs demand for U.S. goods--and a price shock--as the prices of imports and import-competing products rise. The Committee, seeing both lower unemployment and higher inflation, raises the nominal funds rate sooner and by more than in the baseline. But even this tightening, implied by the Taylor rule, still allows a larger pickup in inflation over the next few years.

## Ranges for Money and Debt

(13) The ranges for money and debt in 1999 that the Committee selected on a provisional basis last July are presented below. As in other recent years, the Committee chose ranges for the monetary aggregates that it viewed to be consistent with long-term price stability and historically typical velocity trends; those selections have not necessarily reflected its expectations for actual money growth over the coming year that might accompany a desired path for nominal GDP. The Committee has judged velocities of the monetary aggregates to be so unpredictable over annual periods that it could not form reliable expectations for the coming year's monetary growth and, hence, could not place special weight in policy decisions on deviations of growth from those expectations. While the Committee also has not paid particular attention to growth of domestic nonfinancial debt, the range it has chosen for this aggregate has been aligned with expectations for actual growth over the year ahead rather than with growth consistent with price stability. Apart from cyclical variations and a protracted downward shift in the 1980 s, debt velocity has been fairly stable over long periods of time. Should the Committee wish to align the debt range with expected growth under price stability and stable debt velocity, that range presumably would be centered in the neighborhood of 3 percent--the same as for M2-given the staff estimate of potential real GDP growth of 2-3/4 percent and an upward bias in the GDP deflator of around $1 / 2$ percent. The table below also gives staff projections for money and debt in 1999, which are explained in the text that follows and may provide reference points--even if somewhat unreliable--to assess money and debt growth as the year progresses.

| Money and debt growth <br> (in percent) |  |  |
| :---: | :---: | :---: |
| 1998 | 1999 | Provisional |
| (Actual) | (Projected) | 1999 ranges |

M2
M3
Debt
Memo:

## Nominal

 GDP8.7
11.1
6.3
5.1

4
(14) The behavior of the monetary aggregates last year provided some mixed readings on their value as indicators of economic performance. Velocity fell sharply, unexpectedly, and for reasons that are not fully understood. The Committee looked past accelerating money late in the year when it eased policy in the wake of the market turbulence that followed the Russian default. The Committee recognized that a good part of that money growth reflected the market turmoil, which itself had the potential for adverse consequences for the domestic economy. Nonetheless, some of the unexpected strength in money last year was associated with unanticipated strength in the economy, even though the miss in money was far larger than that in nominal GDP. This experience suggests that the aggregates may have retained some value as signals, perhaps because some of the factors contributing to the rapid growth in money, such as lower interest rates and rising stock market wealth, also contributed to the strength in aggregate demand. Even the rapid money growth associated with market turbulence may have been



Chart 8


Domestic Non-Financial Debt Velocity
Ratio scale

providing some information, namely that the banking system was sufficiently healthy to cushion the effects of disruptions in securities markets on spending.
(15) In the staff forecast, assuming no change in the federal funds rate, nominal GDP decelerates to 4 percent in 1999. Under the circumstances, M2 is projected to grow 6 percent in 1999, a considerable slowdown from 1998 but still well above nominal GDP growth and above the upper end of its price-stability range set provisionally last July. A portion of the decrease in velocity of nearly 2 percent can be attributed to residual adjustments of M2 asset holdings to the decline in market interest rates and opportunity costs last fall. In addition, money market mutual funds will likely grow more briskly than might be suggested by interest rate relationships; in an environment of high, but not rising, equity prices and a historically high weight of equities in portfolios, savers may be attempting to rebalance portfolios, and money market mutual funds should capture at least some of the reallocation. We have built in a pickup in currency growth late in the year in anticipation of increased demand in advance of the century date change, but this largely reflects substitutions away from deposits within M2. The projection allows for only a slight increase in M2 growth later in the year owing to greater demand for insured deposits from investors becoming concemed about the safety of mutual funds and other capital market instruments around the time of the century date change.
(16) Growth in M3 is projected to slow to 8 percent this year, still a good bit above the upper end of its provisional price-stability range. In large part, the deceleration reflects the expectation that bank credit and associated funding needs will moderate from their outsized growth of 1998. In the wake of the repricing of liquidity and risk last summer and fall, bank credit was boosted by a shift by businesses from market to bank financing, unusual difficulties in
securitizing loans amid the market turmoil, and attractive investment opportunities in securities. Absent new shocks to the financial system, these factors are expected to recede, and bank and thrift credit should expand at a pace closer to that of total debt and nominal GDP. In addition, growth in money market mutual funds in M3 is projected to slow from the exceptional rate of 1998 as short-term market rates remain stable and the spread of money-fund cash-management programs to businesses moderates. We have allowed for a bit more of a pickup in M3 than in M2 as a consequence of the century date change. Investors' concerns about placing funds directly in securities markets could create market pressures that would induce firms to shift toward bank credit, which would be financed in part by issuance of wholesale deposits in M3.
(17) The debt of domestic nonfinancial sectors is projected to expand 5-1/4 percent this year, in the middle of the provisional range for this aggregate. The deceleration, from 6-1/4 percent growth in 1998, is accounted for by both a larger paydown of federal debt, owing to a larger projected surplus, and some moderation in growth of nonfederal debt. Borrowing by businesses falls off, even as the financing gap rises, in keeping with the anticipation of a cooling of merger activity from the torrid pace of recent quarters. In addition, household borrowing tapers off, reflecting a moderation in growth of outlays on consumer durables and housing as well as an edging lower of mortgage refinancing (which often involves some net borrowing) in an environment of fairly stable mortgage rates. Credit supply conditions should not be affecting debt growth much in 1999; banks and other lenders are not likely to tighten standards and terms noticeably further on loans to businesses and households, though they will probably remain less accommodative than before the turmoil of last year. In securities markets, we expect that some of the unusually large spreads on lower-rated bonds and various mortgage instruments will
narrow as investors pursue favorable opportunities to boost returns, which will lower borrowing costs for those sectors.

## Short-Run Policy Alternatives

(18) Information received since the December FOMC meeting has suggested considerably more strength in domestic demand, as well as a higher path for stock prices, than anticipated in the December forecast, although prospects for foreign economies, on net, appear somewhat weaker. Balancing these forces, the staff has boosted its forecast for expansion of real GDP, to around 2-1/2 percent in both 1999 and 2000, still assuming an unchanged stance of monetary policy over the forecast period. With economic growth now projected to be just short of its potential, the staff anticipates that the unemployment rate will hold close to its December level of 4.3 percent, rather than increasing to nearly 5 percent as expected in December. Mainly owing to the higher trajectory for resource utilization, the staff forecast now sees stronger inflation pressures than in the December Greenbook; spurred in part by a turnaround in prices of oil, other commodities, and many other imports, key measures of inflation pick up about 1 percentage point between 1998 and 2000.
(19) Even if the Committee agreed with the Greenbook analysis that inflation could well move higher, it might choose to keep the intended funds rate unchanged at this meeting, as in alternative B. The situation in global financial markets remains somewhat unsettled, and the Committee may see that as posing a continued risk of further global contagion that ultimately could jeopardize the U.S. expansion. Furthermore, with inflation quite low by many measures and inflation expectations likely to be well contained, any price acceleration should be relatively gradual. In these circumstances, refraining from tightening at this meeting still should leave the Committee sufficient time to halt any uptrend in inflation before it gained substantial momentum. Moreover, delay might buy time for the market to realize that a tightening of policy will be
necessary, reducing the odds on an outsized market reaction. Finally, the ongoing string of favorable wage and price reports might suggest that, despite tight labor markets, inflation risks are somewhat less than embodied in the staff forecast.
(20) If, by contrast, the Committee saw increasing inflation as the primary threat to sustained economic expansion, it might choose the 25 basis point hike in the funds rate of alternative $\mathbf{C}$ at this meeting. The Committee might read the persistence of surprisingly strong growth in aggregate demand, exceptionally high levels of resource utilization, and soaring equity prices as evidence that real short-term interest rates are sufficiently below their equilibrium values to justify prompt action. Although inflation picks up only gradually in the staff forecast, deferring action could allow inflation pressures to build and necessitate a more pronounced policy firming at a later date that would impose greater restraint on the real economy. Markets have weathered both the year-end and, to date, the Brazilian crisis, suggesting that conditions may be resilient enough to withstand a slight firming of U.S. policy. Indeed, to the extent that a portion of the cumulative $3 / 4$ percentage point ease last fall reflected the Committee's desire to cushion the economy against potential financial market disruptions that have not materialized, it might now be appropriate to take back some of that easing. The Committee might even be concerned that inflation could accelerate more sharply than envisioned in the staff forecast, perhaps because faster-than-projected economic growth would put greater pressure on labor markets or because the staff had earlier underestimated the role of temporary factors in damping inflation, so that when these factors turn around the underlying tautness of labor markets will show through forcefully to wages and prices.
(21) The 25 basis point easing contemplated in alternative $\mathbf{A}$ might be seen as appropriate if the Committee remained concerned about the possibility that economic and financial weakness abroad might prove deeper and more widespread than now expected. The situation in Brazil is continuing to deteriorate, but the staff forecast builds in only limited contagion to other emerging market economies. In Japan, the risks still may be seen as tilted to the downside in view of the relatively high level of the yen, the backup in bond yields, and the proximity of the nominal short-term interest rate to zero. In Europe, an ECB intent on building its inflation-fighting credibility may be reluctant to counter a weakening economy by the easing of monetary policy that is assumed in the staff forecast. Given these uncertainties, it is not surprising that investors in international and domestic financial markets still appear to be quite cautious about credit risk, suggesting the possibility of additional widening of spreads and restraint on credit supply in response to unexpected adverse economic developments from abroad. In these circumstances, a slight easing of the stance of monetary policy might be viewed as a prudent measure to provide additional assurance that the expansion of domestic economic activity will not weaken unduly should such events occur. In light of the slack conditions in global economic activity, such an action would be unlikely to prompt a significant increase in inflationary pressures for some time to come, even if the downside risks did not materialize.
(22) Investors place high odds on monetary policy being left unchanged at this meeting. Thus, if the intended funds rate were left at 4-3/4 percent, as under alternative $B$, shortand long-term interest rates should hold near their current levels, as would the value of the dollar on foreign exchange markets. Over the intermeeting period, however, if data on the economy and prices come in along the lines of the staff forecast, intermediate- and long-term rates could
back up some as investors continue to unwind their expectations of any further easing of Federal Reserve policy later in the year. Under the anticipated conditions of solid economic growth, concerns about credit quality should abate further, and bond market spreads should edge down a little from their current high levels.
(23) In light of prevailing expectations about monetary policy, financial markets would react sharply to the tightening of alternative $C$. Unless the policy announcement hinted strongly that the FOMC saw the move as a limited action, say intended to reverse some of the extra "insurance" against adverse financial developments that was put in place with the last easing, the backup in interest rates could be particularly large. Market participants might be concerned that the move signaled that inflation risks were more serious than previously thought and could well be followed by additional tightening. The prospects for rising debt-service burdens might lead to some increase in risk premiums. The advance in yields on private securities could provoke a substantial correction in equity prices, as investors trimmed expectations of profits and discounted expected earnings at higher rates. The value of the dollar on foreign exchange markets could rise appreciably.
(24) In view of the strength of recent economic activity, investors might be puzzled by implementation of alternative A, but they likely would conclude that the shift represented another small, and perhaps final, adjustment of policy to turbulence abroad designed to ensure that U.S. economic growth remained robust. Short-term market rates would decline noticeably, but bond yields and spreads would probably fall only a bit. The foreign exchange value of the dollar likely would weaken, and equity prices could ascend further.
(25) In line with the staff's projections of annual growth of the monetary aggregates that were discussed in the previous section, M2 and M3 are expected to slow somewhat over the first several months of this year as the growth of nominal GDP moderates and the effects of previous declines in interest rates abate. Under the unchanged funds rate of alternative $\mathbf{B}$ and the economic conditions foreseen in the Greenbook, M2 is projected to expand at a 5-1/2 percent pace and M3 at a 7-1/2 percent rate over the January-to-June period. Domestic nonfinancial sector debt is expected to decelerate as well, growing at a 5-1/4 percent pace from December to June and remaining near the middle of its provisional 3-to-7 percent annual range.

## Directive Language

(26) Presented below for the members' consideration is draft wording relating to the Committee's ranges for the aggregates in 1999 and the operational paragraph for the intermeeting period. The wording of the operational paragraph reflects the new language approved at the December meeting.

## 1999 RANGES

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 reaffirmed at THIS its meeting on June 30 -fuly 1 the ESTABLISHED ranges it hadestablished in February for growth of M2 and M3 of __ TO __ to to percent and _ TO __ 2t06 percent respectively, measured from the fourth quarter of 19981997 to the fourth quarter of 1999 1998. The range for growth of total domestic nonfinancial debt was SET maintained at _ TO __ $3 t 07$ percent for the year. For 1999, the Committee agreedona tentative basis to set the same ranges for growth of the monetary aggregates and debt, measured from the fourth quarter of 1998 to the fourth quarter of 1999. The behavior of the monetary aggregates will continue to be evaluated in the light of progress toward price level stability, movements in their velocities, and developments in the economy and financial markets.

## OPERATIONAL PARAGRAPH

To promote 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/TNCREASING/DECREASING the federal funds rate at/TO an average of around $\qquad$ 4-3/4 percent. In view of the evidence currently available, the Committee
believes that prospective developments are equally likely to warrant an increase or a decrease [MORE LIKELY TO WARRANT AN INCREASE/A DECREASE THAN A DECREASE/AN

INCREASE] in the federal funds rate operating objective during the intermeeting period.

## Alternative Growth Rates for Key Money and credit Aggregates



## Actual and Projected M2



## Actual and Projected M3



## Actual and Projected Debt



## Appendix A

## ADOPTED LONGER-RUN RANGES FOR THE MONETARY AND CREDIT AGGREGATES

(percent annual rates)

|  | M1 |  | M2 |  | M3 |  | Domestic Nonfinancial 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) | $7 \cdot 10^{8}$ | (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 | (8.7) | 2-6 | (11.1) | 3-7 | (6.3) |

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 percent.
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 relabelled 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 $1 / 2$ 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, $1 / 2$ 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.

1/29/99 (MARP)
(percent)
February 1, 1999

 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 lor Thursday. Cotumn 15 is the average contract rate on new commitments for fixed-rate mortgages (raMs) with 80 percer 16 is the average initial contract rate on new commitments for 1 -year, adjustable-rate mortgage (ARMs) at major institutional lenders offering both FRMs and ARMs with the same number of discount points.

[^1]

[^2]The above monetary data incorporate revisions associated with the annual benchmark and seasonal review and are strictly confidential until released in early February.

| Period | Treasury bills |  |  | Treasurycoupons |  |  |  |  |  | Federal agencies redemptions (-) | $\begin{gathered} \text { Nel change } \\ \text { outright } \\ \text { holdings } \\ \text { total } 4 \\ \hline \end{gathered}$ | $\text { Net RPs }{ }^{5}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Net } \\ \text { purchases } \end{gathered}$ | Redemptions $\qquad$ <br> (-) | Net change | Net purchases 3 |  |  |  | $\left[\begin{array}{c} \text { Redemptions } \\ (-) \end{array}\right.$ | Net Change |  |  |  |
|  |  |  |  | within 1 year | 1-5 | 5-10 | over 10 |  |  |  |  |  |
| 1996 | 9,901 | $\cdots$ | 9,901 | 524 | 3,898 | 1,116 | 1,655 | 2,015 | 5,179 | 409 | 14,670 | 5,351 |
| 1997 | 9,147 | --- | 9,147 | 5,549 | 19,680 | 3,849 | 5,897 | 1,996 | 32,979 | 1,540 | 40,586 | -64 |
| 1998 | 3,550 | 2,000 | 1,550 | 6,297 | 12,901 | 2,294 | 4,884 | 2,676 | 23,699 | 322 | 24,902 | 3,616 |
| 1997 ---Q1 | --- | --- | -.. | 619 | 3,366 | 698 | 1,237 | 607 | 5,314 | 230 | 5,084 | -11,149 |
| -.-Q2 | 4,602 | -.. | 4,602 | 877 | 5,822 | 1,233 | 1,894 | 376 | 9,451 | 498 | 13,554 | 6,771 |
| ---Q3 | --- | --- | --. | 644 | 2,697 | --- | --- | 598 | 2,744 | 571 | 2,173 | -4,493 |
| $\cdots$ | 4.545 | -.. | 4,545 | 3.409 | 7,794 | 1,918 | 2,766 | 416 | 15,471 | 241 | 19,775 | 8,807 |
| 1998 --.01 | --- | 2,000 | -2,000 | 1,501 | 2,262 | 283 | 743 | 478 | 4,311 | 60 | 2,251 | -15,409 |
| -..-Q2 | 3,550 | ... | 3,550 | 1,369 | 2,993 | 495 | --- | 286 | 4,571 | 99 | 8,022 | 10,707 |
| ---Q3 | , | -.. | ... | 2,024 | 4,524 | 654 | 1,769 | 1.311 | 7,659 | 98 | 7,536 | -6,732 |
| ---Q4 | --- | --- | --- | 1,403 | 3,122 | 862 | 2,372 | 602 | 7,158 | 65 | 7,093 | 15,050 |
| 1998 January | $\cdots$ | 2,000 | -2,000 | --- | --. | -.. | -.. | 478 | -478 | --- | -2,478 | -21,985 |
| February | .-- | ... | ... | -.. | $\cdots$ | $\cdots$ | --- | -.- | --- | 10 | -10 | 4,262 |
| March | --- | .-. | --- | 1,501 | 2,262 | 283 | 743 | $\cdots$ | 4,789 | 50 | 4,739 | 2,314 |
| April | 3.550 | --. | 3,550 | 1,369 | 2,903 | 495 | --- | 286 | 4,571 | 74 | 8,047 | 9,405 |
| May |  | -.. |  | --- |  | .-. | ..- | ... | , | --- | , | -14,806 |
| June | -.- | $\cdots$ | --- | $\cdots$ | ... | -.- | --- | ... | $\cdots$ | 25 | -25 | 16,108 |
| July | ..- | ..- | -- | ... | -- | -.. | .-. | 1,311 | -1,311 | --- | -1,311 | -9,397 |
| August | --- | --- | --- | 986 | 535 | 303 | 1,769 | --- | 3,593 | 50 | 3,518 | 1,409 |
| September | --- | --- | --- | 1,038 | 3,989 | 351 | ... | ... | 5,377 | 48 | 5,329 | 1,257 |
| October | --- | $\cdots$ | --- | 741 | 725 | $\cdots$ | 1,674 | 602 | 2,539 | 15 | 2,524 | -4,825 |
| November | --- | -.. | -.. | 662 | 2,397 | 862 | 698 | --- | 4,619 | 20 | 4,599 | 6,499 |
| December | $\cdots$ | ..- | -- | ... | $\cdots$ | -.. | ... | ... | $\cdots$ | 30 | -30 | 13,375 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Oclober 28 | ... | -.- | --- | 741 | $\cdots$ | ... | -.. | $\cdots$ | 741 | -- | 741 | -4,692 |
| November 418180 | --- | ... | -.. | ... | 725 | $\cdots$ | 616 | --- | 1,341 | 15 | 1,326 | 645 |
|  | ... | ..- | --- | - | 1,178 | .-- | --- | --- | 1,178 | $\cdots$ | 1.178 | -641 |
|  | --. | -- | --- | 662 | 691 | $\cdots$ | $\cdots$ | ... | 1,353 | $\cdots$ | 1,353 | 1,946 |
|  | ... | -.. | $\cdots$ | ... | 528 | 862 | 698 | --- | 2,088 | 5 | 2,083 | 1.411 |
| December $\begin{array}{ll}2 \\ 9 \\ & 16 \\ & 23 \\ & 30\end{array}$ | --- | --- | --- | --- | --- | --. | -- | $\cdots$ | $\cdots$ | $\cdots$ | .-- | -818 |
|  | ... | ..- | --. | --- | ..- | .... | ... | ... | ... | --- | --- | 956 |
|  | ... | -.- | $\cdots$ | --. | --. | - | $\cdots$ | $\cdots$ | --- | 30 | -30 | 4,758 |
|  | --- | $\cdots$ | $\cdots$ | ... | .-. | ... | ... | --- | --- | --- | ... | 324 |
|  | --- | ... | $\cdots$ | --- | --- | --- | $\cdots$ | $\cdots$ | --- | $\cdots$ | --- | 9,463 |
| January 681 | --- | .-. | --- | --- | --- | --- | --- | $\cdots$ | $\cdots$ | -.. | $\cdots$ | -14,205 |
|  | ... | ... | ... | -.. | ... | ... | ... | 492 | -492 | --- | -492 | 1,078 |
|  | --- | --- | --- | --- | $\cdots$ | .-. | --. | $\cdots$ | ... | -.. | $\cdots$ | - 125 |
|  | --- | $\cdots$ | --- | --. | --- | - | --- | --- | --- | 2 | -2 | 420 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 215.7 | 48.9 | 107.0 | 45.2 | 55.7 |  | 256.8 |  | 472.9 | -22.1 |

1. Change from end-of-period to end-ol-period
2. Outright transactions in market and with foreign accounts
$\begin{array}{ll}\text { 2. Outright transactions in market and with foreign accounts. } & \text { 5. Includes change in RPs ( }+ \text { ), matched sale-pur } \\ \text { 3. Outright transactions in market and with foreign accounts, and short-term notes acquired } & \text { 6. The levels of agency issues were as follows: }\end{array}$
3. Reflects net change in redemptions (-) of Treasury and agency securities
4. Includes change in RPs ( +1 , matched sale-purchase transactions $(-)$, and matched purchase sale transactions ( + ).
in exchange for maturing bills. Excludes maturity shifts and rollovers of maturing issues.

| within <br> 1 year | $1-5$ | $5-10$ | over 10 | total |
| ---: | :---: | :---: | :---: | :---: |
| 0.1 | 0.1 | 0.2 | 0.0 | 0.4 |


[^0]:    ${ }^{1}$ 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.

[^1]:    p-preliminary data

[^2]:    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
    pe preliminary estimate
