

FRBNY Blackbook

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FRBNY BLACKBOOK

December 2006

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1. Overview

Our forecast profiles for output and inflation are largely unchanged, but data during the inter-meeting period have altered our assessment of risks. We now see less upside inflation risk, as most measures of underlying inflation have declined modestly in recent months. On the real side, however, the data over the inter-meeting period were softer than expected, particularly in the housing and manufacturing sectors. Business confidence measures, with the exception of the Empire State index, have also been on the weak side. Labor market conditions, on the other hand, have been reassuring, as have measures of non-manufacturing activity. We have responded to these developments by increasing the downside risk to real activity. Consumer confidence measures, meanwhile, remain consistent with the outlook.

As in the last few cycles, the Greenbook shows consistently weaker growth and higher inflation over the forecast horizon than we are expecting. The relative weakness in the Greenbook growth outlook is due to both a lower estimate of potential growth and the opening of a negative output gap over the forecast horizon. On the inflation front, the assumption of higher persistence in underlying inflation is an important factor keeping core inflation above 2.0 percent through 2008 in the Board's central outlook. In contrast to our roughly flat profile for overall inflation, the Greenbook has a "hump-shaped" profile in 2007 caused by a rebound in energy prices in the first half of the year. The Greenbook also builds in a slightly higher path for the FFR target than we do, as they assume a target rate 25 basis points higher than ours for both 2007 and 2008. Finally, the Board staff continues to see a considerably larger decline in labor force participation and the rate of payroll growth in both 2007 and 2008 than we are expecting. The analysis behind the Greenbook assumption regarding the labor force participation rate, as well as its implications for the evolution of their forecast, will be explored in more detail over the coming cycle.

Heightened concerns with the U.S. outlook for real activity caused the Fed funds futures curve to fall sharply over the inter-meeting period. The Fed funds rate for end-2007

implied by the futures market dropped from 4.85 percent to 4.45 percent. The yield curve shifted down and further inverted. The shift was concentrated in real yields, as breakeven rates remained stable. Other markets responded less strongly to the soft economic data, as equity prices rose, investment-grade credit spreads tightened, and implied equity volatility hit a long-term low. These developments are consistent with equity and credit market participants expecting a soft landing, despite the recent weak economic data. The dollar fell over the inter-meeting period, with investor sentiment turning against the dollar in the wake of slowing U.S. growth and falling U.S.-foreign interest rate spreads. In effective terms the dollar lost almost 3 percent, reaching its weakest level since May.

2. Recent Developments

U.S.

Summary. The economic releases during the inter-meeting period prompted changes in our risk assessment. We now see less upside inflation risk—leaving the risks to our inflation outlook relatively balanced—and greater downside risk to real activity; there is also greater uncertainty about the outlook. The change in inflation risk comes as most measures of underlying inflation have declined in recent months. On the real side, GDP growth was 2.2% in 2006Q3 and recent monthly data indicate a somewhat lower number for 2006Q4, as housing remains weak and manufacturing activity slows. Labor market conditions remain generally solid, however, and revisions to compensation data suggest lower labor cost pressures. Most manufacturing survey measures (with the exception of the Empire State index) have been weak, but non-manufacturing measures remain fairly strong. Consumer confidence measures remain consistent with the outlook.

Inflation. Measures of underlying inflation displayed signs of further moderation in October, indicating reduced upside inflation risks [Exhibit A-6]. The 12-month change in the core PCE deflator was 2.4% in October, still above the top of the implicit range, but slightly less so than earlier in the year. Shorter-term changes in the core PCE deflator showed more moderation, which is consistent with our view that core PCE inflation peaked in 2006Q2. The core CPI displayed similar moderation: its 12-month change was

2.8% in October. Most of the moderation in the core CPI has been in core goods. Core services inflation has changed little in recent months; a fall in this number would confirm the slowing inflation trend.

Overall inflation measures again showed the impact of declining energy prices after their surge during the summer. Both the PCE deflator and the CPI fell in October, their second consecutive monthly decline. Given the recent (moderate) reversal in energy prices, however, these declines are unlikely to continue. Nevertheless, the 12-month changes in the PCE deflator (1.5%) and the CPI (1.3%) are the smallest since 2002.

Most alternative measures of underlying inflation have also fallen in recent months, another indication of lower upside inflation risk [Exhibits A-7 and A-8]. Our Smoothed Inflation measure and Underlying Inflation Gauge (0-2 year horizon), as well as the trimmed mean PCE and CPI measures, have declined in recent months. The one exception to these signs is the median CPI measure, which has continued to increase due to the stronger influence of owners' equivalent rent (which continues to rise sharply) in this measure. Financial market inflation expectations have been relatively stable during the inter-meeting period, particularly at longer horizons. Household inflation expectations at short- and long-horizons were stable in November (long-horizon expectations increased slightly in early December), indicating that they remain contained.

Real activity. Real GDP growth in 2006Q3 was 2.2% (annual rate), slightly below that of 2006Q2 and below our estimate of the potential growth rate (3%). With this slower output growth, productivity growth in 2006Q3 was only 0.2% (annual rate), and the four-quarter change slipped to 1.4%, well below our estimate of trend productivity growth (2½%). Monthly indicators released during the inter-meeting period suggest that real GDP growth in 2006Q4 may slow further to about 1½%. Although these data have led to only minor changes in our medium-term outlook for real activity, they indicate substantially more downside risk.

Real personal consumption expenditures (PCE), which rose 2.9% (annual rate) in 2006Q3, appear so far to be rising at a similar pace in 2006Q4. Real PCE was solid in October, consistent with 3% (annual rate) growth in the quarter. Auto sales in October and November were weaker than they were in 2006Q3, but no more so than expected. Anecdotal reports on holiday shopping also are consistent with our outlook for continued solid consumption growth; however, credit card data for November suggest sluggish retail sales for the month. Furthermore, we see little sign that the weakness in the housing market has spilled over into consumption. Income growth remained sturdy and appears sufficient to sustain consumption growth at a level consistent with our outlook.

The housing market is undergoing a more severe correction than we expected earlier in the year. Housing starts were very weak in October. Although the October data may have overstated the weakness, the September-October average of single-family housing starts was over 26% below its year-ago level. Building permits also continued to slide. The housing starts and permits data indicate that the downturn in residential construction will continue at least through the early part of 2007. On a more optimistic note, home sales (especially for existing homes) appeared to have stabilized over the last three months as mortgage rates have declined, suggesting that the market may be near its bottom. Mortgage purchase applications have rebounded modestly and pending home sales have been relatively stable; both suggest stable to slightly firmer sales going forward. Still, inventories-sales ratios remain relatively high, indicating that the correction process is not yet finished and a continued risk of a more substantial downturn remains. Home price appreciation slowed further in 2006Q3 as measured by the OFHEO index, the Case-Shiller index, and the Census constant-quality index, although the year-over-year changes in all of these indices remained moderately positive. Median sales prices have shown 12-month declines in recent months, but this partly reflects the changing mix of sales during this period.

Business activity and spending indicators slowed in October. Manufacturing production declined in October for the second consecutive month (hours data suggest it probably will be weak again in November). The declines have been concentrated in autos, but

increases in non-auto sectors have been rather soft. Orders for manufacturers (excluding volatile defense and aircraft orders) fell in September and October. Inventories-sales ratios have risen to their highest levels in the past year, suggesting that firms may be cautious in accumulating further inventories, which in turn could slow production growth. Capital spending indicators have been weaker recently even though corporate profits remained strong through 2006Q3. Shipments and orders for nondefense capital goods excluding aircraft fell sharply in October. Nonresidential construction spending declined in September and October after a strong summer. Still, the IT sector remained strong; production growth remained solid and the 12-month change in our Tech Pulse index remained near its recent strong (over 20%) levels.

Labor market. Labor market conditions generally remained solid. In November, the three-month average change in nonfarm payrolls was 138,000 per month, near its level over the past two years. This growth has occurred despite significant declines in construction and manufacturing employment. In addition, temp employment has been relatively flat over recent months, suggesting that employment growth may slow in coming months. Aggregate hours were relatively strong in October and November; the average over those two months was 1.5% (annual rate) above the 2006Q3 average. The unemployment rate was 4.5% in November, up slightly from October's expansion-low level of 4.4%. The labor force participation rate was 66.3%, its highest level since June 2003, suggesting some supply response from a firm labor market, while the employment-population ratio was 63.3%, its highest level since September 2001. Initial claims for unemployment insurance rose in late November (likely because of seasonal quirks related to Thanksgiving), but they have since returned to the upper part of the relatively narrow range that has prevailed during 2006.

Labor compensation measures moved into closer conformity with each other. The 12-month change in average hourly earnings has flattened recently at around 4% (it was 4.1% in November). The four-quarter change in the Employment Cost Index has risen somewhat over the year and was 3.3% in 2006Q3. There were substantial downward revisions to compensation per hour data in 2006Q2 and smaller revisions to 2006Q3. As

a result, the four-quarter change in compensation per hour in 2006Q3 was 4.3%, below the 6.4% in 2006Q1 (this also is consistent with our view that the 2006Q1 surge was related to transitory incentive payments). In addition, unit labor cost growth was revised downward; the four-quarter change in unit labor costs in 2006Q3 was 2.9%. Although labor costs pressures remain somewhat elevated, they appeared more contained than they did a few weeks ago.

Surveys. Both the Conference Board and Michigan consumer confidence measures were little changed in November; the preliminary December Michigan number declined modestly. They continue to be consistent with our outlook of solid consumption growth. Business survey measures, on the other hand, showed some divergence, with more weakness in manufacturing indicators. The ISM manufacturing index fell below 50 (the level typically considered the dividing line between manufacturing contraction and expansion) in November for the first time since 2003, indicating a sluggish manufacturing sector at best. Most regional manufacturing surveys also indicate tepid manufacturing conditions, although our Empire State survey is an exception in this regard. In contrast, the ISM non-manufacturing index increased in November and remains well within its prevailing range of the past two years, indicating that activity in the service sector remains robust.

Global

Foreign growth slowed in Q3, as had been expected, after a very robust performance in the first half of the year. The slowdown was particularly noteworthy in the euro area and China. The outlook is for growth in the major economies to continue at or near the solid pace set in Q3.

Industrial Countries. Euro area growth slowed to 2.1 percent (annual rate) in Q3 after reaching 3.7 percent in the first half of the year. Higher consumption and exports were more than offset by weaker investment spending and higher imports.

Recent indicators are favorable, with production up 3 percent over the year ending in September and industrial confidence surpassing expectations in November by improving from an already high level. In addition, the trend decline in the unemployment rate that started in 2005 is continuing; the October reading was 7.7 percent, down from 8.8 percent in March 2005. Exports grew 8 percent over the year ending in September, down from 12 percent in Q2 but still a solid pace. Core inflation was steady at 1.6 percent in October, near where it has been for the last two years. A German tax increase may raise euro area inflation by as much as 0.3 percentage point in January.

Japan's economy grew 0.8 percent (annual rate) in Q3, a slowdown from the 1.1 percent rate recorded in the previous quarter. The composition of growth shifted in Q3, as consumption fell and investment spending softened, while net exports strengthened. Major GDP revisions lowered estimated growth significantly in 2005 and 2006. Data suggest that Q4 got off to a good start, with industrial production up 1.6 percent in October. Industrial output has been increasing steadily since the middle of the year, rising 10 percent (annual rate) since June. Business confidence was high in September, with the headline index for large manufacturers in the Tankan survey rising 4 points to +24. Export sales, though, grew a mere 0.5 percent in October, continuing the recent softening that followed a brisk expansion between April and August. The overall consumer price index rose 0.6 percent over the year ending in September. However, the price index excluding food and energy fell 0.5 percent.

Canadian growth was weak in Q3, held down by another quarter of weak investment spending. Data suggest little momentum going into Q4. Business confidence faltered in Q3, while shipments were down sharply over the year in September. The unemployment rate moved up to 6.3 percent in November. United Kingdom GDP grew 2.7 percent (annual rate) in Q3, at roughly the same rate as in the previous three quarters. House price growth has accelerated over the course of 2006, despite the two interest rate increases.

Emerging Economies. Growth remains strong in China, although recent data suggest that official steps to cool the economy are beginning to gain traction. Growth in Q3 was

reported at 10.4 percent over the year, down from 11.3 percent in Q2. Data on industrial production, investment, money, and credit also suggest some additional deceleration in Q4. Reported investment spending declined sharply, from around 30 percent at mid-year to just 13 percent in October, but data problems and possible political manipulation suggest that the magnitude of that drop may be overstated. China's trade balance in October hit a new all-time high, at almost \$24 billion.

Growth in Q3 was stronger than expected in Taiwan, Singapore, and Hong Kong. Korean growth was 4.4 percent (annual rate) in Q3, about as expected. However, production and export data suggest that NIE growth is slowing modestly in the current quarter.

The Latin American region continues to benefit from strong global demand and rising domestic demand. In Mexico, GDP growth moderated to 4.1 percent (annual rate) in Q3 after a strong first half of the year. The deceleration in manufacturing output likely reflects an inventory correction rather than a broad slowdown. Brazilian GDP growth in Q3 was disappointing at 1.9 percent (annual rate), only a marginal acceleration from Q2 growth of 1.6 percent. On a more positive note, investment spending was up 10.4 percent in Q3, and early Q4 data indicates that the recent inventory correction is coming to an end. The economy is expected to finish 2006 and enter 2007 on a strong note. In Argentina, the economy continues to grow rapidly and shows few signs of slowing. The GDP proxy expanded 8.0 percent over the year in September, the fifth consecutive month it has expanded at 8.0 percent or above.

Trade

The U.S. trade deficit broke its string of high readings and fell to \$64.3 billion in September from \$69 billion in August. The decline was caused by a rise in exports and a drop in the price and quantity of oil imports.

The real non-petroleum trade deficit has been remarkably stable for the past year, in large part because demand for non-oil imports was unexpectedly soft relative to the overall

strength of the U.S. economy. Its three-month average, including the September 2006 data, has been roughly constant since September of 2005.

The nominal trade deficit was also flat over the past year; the September deficit was slightly smaller than its level one year earlier.

The forecast is for export growth to continue at a healthy rate while demand for non-oil imports remains moderate. As a result, net exports are projected to be neutral for GDP growth in Q4 and for 2006 as a whole before becoming a small drag (0.1 percentage point) over the course of 2007.

The current account deficit was \$871 billion in 2006Q2 (annual rate) and is projected to reach \$912 billion (6.8 percent of GDP) in 2006Q4. For 2007, the deficit is projected to reach \$914 billion, which as a share of GDP will be roughly the same as in 2006.

A key development going forward will be the impact of the deterioration of the net income component of the current account, as high interest rates are applied to the ever-increasing stock of U.S. interest-sensitive liabilities.

Financial

Domestic Markets. Since the last FOMC, financial markets have evolved in a manner generally consistent with the expectation of a soft landing in 2007. However, the slope of the Treasury yield curve produces a strong recession signal.

Breakeven inflation at longer maturities (beyond 2 years) was remarkably stable during the inter-meeting period. The 10-year breakeven rate traded within a 10 basis point range of 2.25-2.35 percent [Exhibit B-2]. At horizons of up to 2 years, however, breakeven inflation increased substantially: from 1.8 to 2.4 percent at the 6-month horizon and from 2.1 to 2.3 percent at the 18-month horizon.

The real yield curve shifted down significantly over the period, by an average of 60 basis points for maturities up to 2 years and an average of 40 basis points at maturities of 2-10 years. The real yield curve thus remains inverted but slightly less so than at the time of the last FOMC. The decline in the real yields was accompanied by a significant decline in the Fed funds futures curve. Eurodollar futures for year end 2007 implied a Fed funds level of 4.85 percent the day before the last FOMC meeting and now imply a level of 4.45 percent for that period [Exhibit B-4]. Markets thus expect a sharp decline in the Fed Funds rate during 2007.

The decline in short-term interest rate futures was accompanied by a further inversion of the nominal yield curve [Exhibit B-1]. The spread between the 10-year and 3-month yields widened from -22 basis points to -44 basis points, raising the likelihood of a recession 12 months ahead to 40 percent according to the Estrella-Hardouvelis-Mishkin model. Implied Treasury volatility increased at short- and long-term horizons and is now at its highest point since the last target rate increase [Exhibit B-5].

Over the inter-meeting period, the S&P 500 increased by 3.2 percent (over 30 percent annualized), investment-grade credit spreads tightened, and implied equity volatility hit a long-term low [Exhibits B-7 and B-8]. These developments are consistent with equity and credit market participants expecting a soft landing, despite the recent weak economic data. Increases in spreads did occur for some low-rated credit. The spread between the CCC and 10-year yields increased from 564 to 593 basis points and Brady bond spreads rose 9 basis points. Furthermore, the on-the-run/off-the-run premium of the 30-year Treasury increased by 16 basis points.

In the past 50 years, 9 of the 13 monetary tightening cycles were followed by recessions. Among the 4 soft landings, only the tightening that ended in November 1966 was preceded by a yield curve inversion. The level of the Fed funds rate (5.76 percent), the size of the inversion (10-year/3-month spread of -0.31 percent), and the level of the real interest rate (2.36 percent) at that time are remarkably similar to today's configuration. However, the slowdown in 1967 was accompanied by a sharp stock market correction.

In summary, bond markets seem to expect a sharp decline in short-term interest rates in 2007. Equity and credit markets expect such a decline to be soon enough and sharp enough to allow a soft landing; however, the stock market is a less reliable predictor of economic downturns than the yield curve. While short-term inflation expectations increased, longer-term breakeven rates are stable around 2.30 percent.

Monetary Policy and Global Bond Markets. Concern with U.S. growth prospects and asymmetric policy stances across major areas strongly influenced global financial developments during the inter-meeting period, with the dollar bearing the brunt of the adjustment.

Despite recent subdued price behavior and a strong euro, the ECB raised its policy rate by 25 basis points to 3.50 percent on December 7th, as policymakers anticipated a small future up-tick in inflation. The ECB signaled further tightening ahead. Another rate hike is possible as early as February, after which the Bank may pause. The Bank of Japan held policy firm at its last meeting. However, the Bank expects some inflationary pressure ahead, despite the ongoing decline in core prices, and thus is poised to tighten soon, most likely in early 2007.

A bias towards tighter policy is apparent elsewhere as well. The Bank of England raised its policy rate 25 basis points to 5 percent in November and is expected to raise it again in 2007Q1. The Bank of Canada is expected to tighten in 2007Q1. Australia's and Sweden's central banks also raised policy rates early in the period, by 25 basis points, while the People's Bank of China continues to tighten monetary conditions through administrative measures and pressure on banks to restrain credit growth.

Tightening cycles have ended in emerging Asia (outside China), where some countries have already begun to cut rates. In Latin America, Brazil's central bank has eased its policy rate by 650 basis points since September 2005 and is likely to continue to do so as long as inflation runs below target. Mexico's central bank is on hold at the end of an

easing cycle, while Argentina's central bank is bucking the emerging market trend by continuing to tighten from a still-loose stance.

As most policy moves were widely anticipated, short-term rates and interest rate futures in major economic areas were stable [Exhibit B-10]. Long-term rates fell, however, reflecting a more pessimistic outlook for U.S. growth. Breakeven rates implied by inflation-linked bonds were also stable, thus linking the decline in long nominal rates to falling long real rates. The decline in foreign nominal yields was generally less than in corresponding U.S. rates, however. European and Japanese intermediate and long yields, in particular, fell 20-25 basis points, leading to flatter yield curves. In fact, Euro area 10-to-2 year spreads fell to near zero. The timing of Japanese yield declines indicates a key role also for weaker-than-expected CPI releases at end-October. Emerging market sovereign spreads widened but remain at historically low levels.

Foreign Equity Markets. Foreign stock markets were not as well supported by falling interest rates as U.S. markets and were generally mixed over the period [Exhibit B-9]. In Europe, the FTSE-100 index lost 1.5 percent over the period, while the EuroStoxx index gained 1 percent. In Japan, weak economic news and disappointing earnings reports led to large (8 percent) index losses through mid-November. Prices later recovered, but the Nikkei and TOPIX still ended the period 1.5 percent below their levels following the October FOMC meeting.

Low returns to investment in industrial countries helped support asset prices in emerging markets. Stock prices rose robustly in most emerging economies, although most equity gains in local currency in Latin America were offset by weaker exchange rates.

Exchange Rates and Capital Flows. Exchange rate movements during the inter-meeting period largely reflected global asymmetries, with investor sentiment turning against the dollar in the wake of slowing U.S. growth and falling U.S.-foreign interest rate spreads [Exhibit B-9]. The dollar fell sharply against the euro and sterling (6 percent) and against the yen (3 percent). In effective terms the dollar lost almost 3 percent, reaching its

weakest level since May. Developments against the euro were especially notable and could be largely attributed to relative euro-area economic strength. The ECB has so far not reacted to the euro's strength, but this silence is likely to break should the euro continue to breach records against the dollar.

Emerging Asian currencies appreciated, on average, by 2 percent against the dollar. Their gains might have been even stronger had local authorities not intervened to slow their currencies' appreciation. China's authorities have accommodated more rapid appreciation against the dollar (at almost a 7 percent annualized pace since the end of September) than in the past. The Brazilian real and the Mexican peso depreciated about 1 percent against the dollar and much more sharply against currencies commonly used as funding for carry trades, as some positions likely were unwound during the period.

Capital flows toward the United States continue at a relatively smooth pace. Data on Q3 financial flows, to be released on December 18th, should indicate whether the decline in both gross inflows and outflows seen in Q2 represents a temporary lull or a more sustained trend.

Energy Market Developments. Oil prices have risen in recent weeks but remain well below their July peak of \$74; WTI prices averaged \$63 a barrel in the first few days of December, up from an average of \$59.25 in November. Low seasonal oil demand conditions, softer global growth, and an increase in global oil supply have helped contain oil prices in recent months.

Oil market conditions may turn tighter in 2007, however. The International Energy Agency projects global oil demand to grow 1.7 percent in 2007, faster than the 2006's unusually slow pace of 1.1 percent. China is expected to continue to provide a key source of demand pressure, while other Asian countries and the United States are also expected to contribute. Oil supply is projected to rise mainly in new fields in the former Soviet Union and Africa, while OPEC is not expected to increase production. Overall,

oil price projections based on recent oil futures are for WTI prices to rise to \$67.50 per barrel by 2007Q4, slightly above the previous assumption of \$66.50.

Second District

Our Indexes of Coincident Economic Indicators for October show strong and steady growth in New York City's economy, but a deceleration in New York State and continued stagnant activity in New Jersey [Exhibit E-1]. Looking ahead to the next nine months, our leading indexes predict growth of roughly 4½% (annual rate) in New York City and 3% for New York State; however, our index for New Jersey signals a roughly 1% (annualized) contraction in economic activity [Exhibit E-2]. In the wake of tumbling energy prices, local-area inflation continued its sharp retreat in October, paralleling the nationwide measure. The 12-month change in metropolitan New York City's headline CPI fell to 2.4% in October, down from 3.3% in September and 4.7% in August. In contrast, 12-month core inflation stood at 3.6% in October, down from 4.2% in September, but little changed from August's 3.8% rate. Both local inflation measures were about a percentage point above their respective U.S. rates. The gap between local and national inflation continues to be concentrated in shelter costs, which rose nearly 6% locally over the past 12 months, compared with 4% nationally.

Labor Markets. The district's labor markets were mixed but generally tight in October. Private-sector employment in the New York-New Jersey region as a whole edged up at a modest 0.4% annual rate in October, as a moderate increase in New York more that offset a dip in New Jersey. Over the past year, private-sector job growth has averaged 1.6% in New York City but roughly half that in both New York State and New Jersey [Exhibit E-3]. Despite the lackluster growth in payroll employment in October, New Jersey's unemployment rate fell to a one-year low of 4.4%, New York State's rate slipped to an 18-year low of 4.0% and New York City's rate tumbled to a record low of 4.1%. While these declines partly reflect a dip in labor force participation in recent months, most of the improvement reflects growth in the number of people employed.

Real Estate. Commercial real estate markets remain strong, while residential markets are mixed. Lower Manhattan's office market tightened further in November, with the Class A vacancy rate slipping ½ point to 8.2%, while Midtown's rate held steady at just below 6%. More strikingly, asking rents are up 30% over the past 12 months in Midtown, and up more than 40% in Lower Manhattan. Housing, though still fairly sluggish, has shown signs of stabilizing since the last report. Based on monthly housing permits, our outlook on residential construction activity remains mixed: single-family permits have fallen sharply since the beginning of the year, but multi-family permits have continued to edge higher. OFHEO's house-price index for the third quarter indicates a 9% year-over-year gain in New Jersey and a 6½% gain in New York State, with the western areas of Rochester and Buffalo lagging [Exhibit E-4]. More current (though somewhat less reliable) data from the NY State Association of Realtors indicates a price decline of 6% for single-family homes between this and last October, as well as a steep drop in sales activity. In contrast, New York City's co-op and condo market has reportedly been steady, while the rental market has continued to strengthen.

Surveys and Other Business Activity. Regional surveys of both businesses and consumers indicate high and relatively stable levels of sentiment. November surveys of purchasing managers in the Buffalo and New York City areas indicate increasingly robust business conditions, while a survey of purchasers in the Rochester area signals some moderation in growth. Purchasers in these areas also report steady to diminishing price pressures. More recently, preliminary indications from our December survey of New York State manufacturers suggest steady improvement in general business conditions, a slight acceleration in both new orders and shipments, and less widespread increases in input prices. Consumer surveys have also shown strength in recent months. The Conference Board's survey of Middle Atlantic region (NY, NJ, PA) residents shows confidence retreating slightly in November but remaining close to the cyclical high seen in October; Siena College's survey of New York State residents shows confidence climbing to a cyclical high in November in both the New York City metro area and upstate.

3. Outlook

FRBNY's Central Forecast

Three fundamental factors underlie our central projection [Exhibits A-1 to A-5]:

1. Inflation expectations are likely to remain contained.
2. There is little, if any, slack remaining in resource utilization. If there are no large shocks and if fiscal and monetary policies maintain a near-neutral stance, growth over the medium term will be near its potential rate of approximately 3% (with 2% long-run productivity growth [GDP basis] plus 1% labor force growth).
3. The term premium is expected to remain low.

These underlying assumptions for the central forecast are generally similar to those of the last Blackbook. Longer-term inflation expectations in financial markets and household surveys have been relatively stable or slightly lower during the inter-meeting period, indicating that they remain contained. Unemployment rates remain low, consistent with little slack in resource utilization. The inverted yield curve also raises the possibility that the stance of monetary policy may be tighter than we believe.

Regarding the assumed monetary policy path, our forecast is consistent with a Fed funds target rate of 5¼% through 2007Q3, declining to 5% at the end of 2007 and to 4¾% by the end of 2008. This path is the same as that assumed in the last Blackbook and only slightly lower than that underlying the Greenbook forecast. However, it is above the expected path implied by futures markets.

Inflation. The October core PCE deflator was somewhat higher than we expected, leading us to raise slightly our 2006Q4 projection for core PCE inflation. However, most measures of underlying inflation indicate a moderation in inflation pressures consistent with our outlook. With relatively little change in our real activity forecast, we thus have not changed our medium-term inflation forecast. This forecast has core PCE inflation slowing to 1.9% in 2007 (Q4/Q4) and 1.8% in 2008.

Real Activity. Although the recent labor market data have been solid, real activity and production indicators have generally been soft. Consequently, we have lowered our real GDP growth projection for 2006Q4 further below our assumed potential growth rate. The weak level of October housing starts suggests that the housing correction will persist longer than we previously expected, leading us to lower projected real growth for early 2007 as well. However, we expect the housing correction to be near its end by that time, and our forecast has growth returning to potential for the rest of 2007 and 2008. We have, therefore, only slightly lowered our projected 2007 (Q4/Q4) growth rate to 2.9% and left that for 2008 at 3%. We expect the below-potential growth in late 2006 and early 2007 to raise the unemployment rate slightly from its current low level; we then expect it to remain flat for the rest of 2007 and 2008 as real growth returns to its potential rate.

Two key assumptions behind our central forecast deserve mention. First, despite extremely weak recent data on housing starts and permits, we assume that most of the housing correction has occurred and that residential investment will bottom out in the first half of 2007. (We do, as mentioned above, assume a more persistent and deeper decline than in the last Blackbook.) The recent stabilization of home sales provides some justification for this assumption. Second, we assume that any spillover effects from the housing-market slowdown into consumer spending will be relatively small. Both of these assumptions represent significant downside risks to the forecast.

Comparison with Greenbook Forecasts

GDP and Inflation Forecast. As in the last few cycles, the Greenbook shows consistently weaker growth and higher inflation over the forecast horizon than we are expecting. The relative weakness in the Greenbook real growth outlook is attributable in part to a lower estimate of potential growth and in part to a modest output gap that opens over the forecast horizon. On the inflation front, assumed high persistence in underlying inflation is an important factor keeping core inflation above 2.0 percent through 2008 in the Board's outlook. In fact, the structural persistence assumption appears to be at least as

important a factor in the difference in our inflation outlook as do any differing views on the strength of any other mechanism (such as compensation, unit labor cost growth, or the behavior of profit margins). In contrast to our roughly flat profile for overall inflation over the forecast, the Greenbook has a “hump-shaped” profile caused by a fairly substantial pickup (to 2.8%) in overall inflation in 2007 that is associated with a rebound in energy prices in the first half of the year. The Greenbook also builds in a slightly higher path for the FFR target than we do, as they assume a target rate 25 basis points higher than ours for both 2007 and 2008. Finally, the Greenbook continues to see a considerably larger decline in labor force participation and payroll growth in both 2007 and 2008 than we are expecting. The analysis behind the Greenbook assumption regarding labor force participation rate, as well as its implications for the evolution of their forecast, will be explored in more detail over the coming cycle.

Alternative Greenbook forecasting scenarios. The Board staff presents a range of alternatives to their baseline forecast. Some insight into the importance of the Board’s assumption regarding labor force growth is provided by the *faster labor force growth* scenario. With participation held at its current rate through the end of 2008 (which is the assumption in our forecast), output growth is stronger than in the baseline, inflation moderates slightly less slowly than in the baseline, and the unemployment rate does not rise in 2008 as it does in the baseline. Other things being equal, this suggests that the participation rate assumption both adds to the real slowdown in the Greenbook baseline and helps to offset some of the structural inflation inertia that keeps inflation above 2.0 percent in the baseline forecast.

Another scenario—*greater wage acceleration*—generates a reasonably substantial rise in core inflation relative to the baseline. While this scenario does build in accelerating compensation growth, it also assumes that profit margins remain flat over the forecast horizon rather than declining slightly, as built into the baseline. The confluence of these two assumptions makes it difficult to know how important each is in generating the resulting inflation. However, a limited understanding of the model suggests that the assumption governing the behavior of profit margins is crucial (suggesting that the

scenario might have been more appropriately named “greater profit growth” rather than “greater wage acceleration”). Output growth slows relative to the baseline, and the unemployment rate rises somewhat markedly as well.

Three scenarios generate a path for the FFR that is similar to the one currently priced into financial market data; a scenario that examines the implications of assuming the FOMC follows the policy path currently priced into markets is also included. The latter scenario, labeled *market based FFR*, generates stronger output growth than in the baseline and all other scenarios, an unemployment lower than the baseline and the Greenbook estimate of the NAIRU, and a path for inflation that moderates significantly more slowly than in the baseline. This scenario implies that the path for the FFR currently implied by financial market data would result in overheating, with inflation showing little or no moderation over the forecast horizon, output growth above potential, and unemployment below the NAIRU. In fact, two of three scenarios that produce the market path do so by generating a significantly weaker path for real activity and a slightly softer path for inflation than in the baseline. The exception among the three scenarios is the *lower NAIRU*, which generates stronger output growth, lower unemployment, and a path for inflation that falls below 2.0 percent within the forecast horizon. It is interesting to note that the broad contours of output, inflation, and unemployment in this scenario accord fairly well with those of our central scenario.

Foreign Outlook. Our forecast differs little from that of the Board staff for the end of 2006. For 2007, our forecasts for both the euro area and China are somewhat higher. The Board staff has a lower potential growth rate for the euro area and expects more of a decline in real activity in 2007Q1 from the upcoming increase in German taxes. For China, the Board staff expects more of a slowdown in response to recent efforts by Chinese authorities to cool investment spending.

U.S. Trade. For the end of 2006, we forecast a neutral contribution of net exports to real GDP growth while the Board staff forecasts a significant positive contribution. This difference follows from the Board staff’s projection of a substantial slowdown in import

growth in Q4 as payback for unexpectedly high levels of both oil and non-oil imports in Q3. Our forecast differs little from the Board staff's forecast for 2007 and 2008.

Comparison with Private Forecasters

Since the previous Blackbook, we have revised down our estimate of 2006Q4 real GDP growth; our forecast remains at the lower end of the range of alternative forecasts. For 2007Q1, our projection is roughly in line with those of private forecasters, while it is somewhat stronger for 2007Q2. Our forecasts for overall and core inflation are roughly in line with this set of alternative projections over the forecast horizon.

FRBNY Alternative Scenarios and Risks

In addition to the central projection discussed at the beginning of this section, we consider a number of alternative scenarios that have different implications for monetary policy. Our approach differs from the one in the Greenbook in that we attach probabilities to our alternative scenarios and usually maintain the same scenarios across FOMC cycles. This allows us to interpret more easily the forecast distribution for output and inflation, as well as analyze the impact from variation in the probabilities over time. Once introduced, we retain an alternative scenario until we assess its likelihood to be minimal; for example, in the June Blackbook we removed the global deflation scenario introduced in May 2005 and replaced it with an over-tightening scenario.

We also can generate when necessary other forecast distributions that place a greater probability on a specific alternative scenario in order to examine its implications for policy. This was done in January 2006 in response to the near inversion of the yield curve and the surprisingly low advance reading on 2005Q4 GDP growth. To capture these developments, we produced a forecast distribution in which we doubled the probability of a productivity slowdown.

We describe some features of the scenarios next. In these descriptions we continue to spend more time on the overheating scenario because it has the most significant consequences for appropriate policy.

FRBNY Alternative 1: Overheating. There are two potentially connected forms of this alternative. The first is a more standard scenario in which the extremely accommodative policy stance adopted in the U.S. and other countries in response to the global slowdown of 2000-2003 produces a persistent move of inflation above implicit targets, with an abrupt slowdown in real output growth starting in mid-2006. If central banks have consistently underestimated the equilibrium real rate (i.e., overestimated the slack in the global economy), this will lead to excess aggregate demand growth and, ultimately, to an increase in inflation and inflation expectations. The recent declines in most measures of underlying inflation and the sustained fall in inflation expectations in the late summer provide some evidence against this scenario. Counteracting these signals, however, is the weakness in Q3 GDP that was partly masked by big growth contributions from inventories and a decline in imports. In addition, if the labor market is viewed as a lagging indicator, the recent strength in the labor market should not be taken as evidence against this scenario.

The second form of this scenario (described in the special topic *The Free Lunch* in the May Blackbook) highlights the possibility that the U.S. economy could be overheating but that the overheating might not manifest itself immediately in high domestic consumer inflation rates (i.e., a rate well in excess of the FOMC's implicit target). If the dollar is not freely floating and, moreover, if the dollar is being boosted by capital inflows whose purpose is to keep the dollar strong relative to other currencies, then it is possible that market interest rates could be held below what might be reasonably viewed as the equilibrium rate for a significant period of time.

Under this scenario, the low market rates should induce "over-consumption" today at the expense of future consumption. We now see less evidence that this scenario is occurring in the U.S. The most direct evidence in favor of this view was the apparent non-

sustainability of the U.S. current account deficit, the fiscal imbalances in the U.S., and strong home price appreciation. The recent stabilization of the U.S. real trade deficit and the short-run improvement in the fiscal position both suggest that less weight should be placed on this version of the scenario. However, the recent U.S. housing data have increased the risk of a less orderly housing market slowdown, raising the possibility of a more severe aggregate growth slowdown that would be consistent with this scenario. Furthermore, the decline in housing activity has been much more abrupt than that expected in our central forecast. We based our outlook on the assumption that there was little overheating in the housing market; the depth of the housing market downturn has since called this assumption into question.

In the January 2007 Blackbook, the name of this scenario will be changed to “Effects of Overheating” to reflect the fact that we are already dealing with the impact of this scenario, if it has occurred.

FRBNY Alternative 2: Productivity Shifts. In the post-war era, the United States has experienced three productivity epochs (pre-1973, High I; 1973 to mid-1990s, Low I; and mid-1990s onward, High II). The July NIPA revisions produced a drop in the estimate of potential growth in our central forecast. Therefore, our current central projection for productivity in the medium-term assumes a growth rate slightly lower than that of the pre-1973 epoch. We see two alternatives to this projection.

2a. Productivity Boom. The developments in the labor market and the continued strength of labor productivity over the longer term suggest that firms have become more efficient in using labor. As such, strong productivity growth could persist, which would imply that the potential growth rate is higher than our current estimate. Strong productivity growth would also limit labor cost pressures and thereby help to keep inflation subdued. However, the upcoming large upward revision to the March 2006 level of payroll employment, the large upward revisions to recent payroll releases, and the low productivity growth in Q3 have all lowered the likelihood of the productivity boom scenario.

2b. Productivity Slowdown. It is possible that the upswing in productivity that began in the early 2000s will not be sustained. Furthermore, the persistent increases in the level and volatility of energy and commodity prices could result in lower productivity growth. The NIPA revisions of July 2006, combined with the expected revisions in the March 2006 level of payroll employment, imply less robust productivity growth over the last three years than previously thought. In addition, the recent revisions to compensation suggest a much slower growth rate for real compensation, raising the probability of a switch to low productivity growth in the Kahn-Rich model. This pattern provides support for the view that more of the strong productivity growth in the last few years was cyclical, meaning that total factor productivity growth has not been as robust as expected in our central forecast.

FRBNY Alternative 3: Over-Tightening. Our outlook is based on the assumption that the neutral policy rate is between 4% and 4.25%, with an implicit target for core PCE inflation of 1.5%. Recent inflation data have core PCE inflation running above 2%. If sustained, this development is consistent with a Fed funds rate above 5%. However, there is a risk that the recent acceleration in inflation is a lagging indicator of demand pressures and that the economy will slow significantly below potential. The behavior of inflation expectations, which remain contained and fell in the late summer despite a long period of headline inflation at or above 3%, supports this view. Furthermore, the Fed has been increasing the FFR for two years, with a cumulative increase of 425bp. The yield curve has now been inverted for over 4 months, apparently driven by expectations of an FOMC easing in 2007. While the yield curve nearly inverted in early 2006 due to the low levels of long forward rates, the current situation seems different from that experience and more reminiscent of prior periods of a Fed-induced yield curve inversion. In addition, recent data suggesting sluggish growth in manufacturing provide a signal more consistent with previous over-tightening episodes. The persistence and depth of the yield curve inversion compel us to maintain the same weight on the over-tightening scenario, despite the very different signals of other financial market indicators, such as the stock market and junk bond premia.

Foreign Outlook. An upside risk to the euro area outlook is that the ongoing improvement in the labor market could boost consumer spending more than currently expected. Consumption has been weak for many years, leaving open the possibility of a sustained period of strong domestic spending. A downside risk stems from the euro's recent appreciation. The region has enjoyed strong exports in recent years, which have lifted investment spending. Growth may slow more than expected if the recent decline in external competitiveness dampens investment spending significantly.

In Japan, the downward revision of growth in 2005 and 2006 raises questions about the underlying strength of the economy. The drop in Q3 consumption is also a worry, since a loss of momentum in this sector can have a greater-than-expected impact on business investment spending. The weak consumption data, though, is at odds with the relatively strong labor market. An additional concern is that the economy is not yet firmly out of deflation. While the overall price index is increasing on a year-over-year basis, the pace has slowed over the last two months. In addition, higher food and energy prices are currently the sole drivers of inflation. Stripping out these volatile components, consumer prices are falling, with the pace of deflation showing no sign of declining. A fall in energy prices could push the headline index back into deflation.

Investment in China remains unsustainably high. It remains unclear whether recent efforts to rein in overheated investment growth will ultimately prove successful. If not, China might cycle from boom to investment-led bust, with unwelcome spillover effects for the rest of Asia. In Taiwan, hangover from a consumer credit boom has led to a slump in private consumption. The recent episode is reminiscent of the after-effects of the Korean credit card debacle of 2003-2004.

Key watch points for Latin America include financial market reactions to political developments in Mexico and Brazil. In Mexico, a key test for newly inaugurated President Felipe Calderón will be putting together a workable coalition in Congress. In Brazil, newly re-elected President Lula has yet to announce a list of reform priorities for

the critical first year of his second term. In Argentina, the government's difficulty in controlling inflation remains the key concern.

U.S. Trade Forecast. One uncertainty in the trade forecast concerns the impact of the recent dollar depreciation on the trade balance. The dollar's decline against the yen and the euro may have a larger-than-anticipated effect in markets where U.S. firms compete with Japanese and European firms. U.S. exports would then receive a higher-than-expected boost in 2007.

A second uncertainty involves the projected path of oil prices. Based on oil futures, the forecast assumes that oil prices will decline in Q4 and start rising steadily in 2007. Geopolitical developments could push oil prices higher than currently anticipated, causing the trade deficit to be larger than currently forecast.

Quantifying the Risks. The inflation data over the inter-meeting period continue to be consistent with our central scenario, implying an increase in its likelihood; the real activity data, however, have been less consistent with the soft landing implicit in our central forecast. Therefore, we have maintained the likelihood of the central scenario at 65% (65% in October). While we have maintained the probability associated with the central scenario, we have changed some of the weights we place on the alternative scenarios; in addition, we have changed some of scenarios' impact on inflation and real activity. We assume that the two most likely alternative scenarios are overheating at 11% (10% in October) and over-tightening at 10% (10% in October), followed by the productivity slowdown at 8% (7% in October), and lastly the productivity boom at 4% (5% in October). The remaining 2% (3% in October) is split evenly between upside and downside risks. The implied dynamic balance of risks is shown in Exhibit C-1.

In addition to updating the probabilities of the various scenarios, we have changed some of the assumptions on the effects of the over-tightening and overheating scenarios. The over-tightening scenario now causes more slowing in real activity and inflation. We made these changes for two reasons. The first is to capture the massive downward

adjustment taking place in residential investment and to the possibility that this adjustment could prompt abrupt slowing in other sectors. To quote Alan Greenspan in December 2000:

Still, in an economy that already has lost some momentum, one must remain alert to the possibility that greater caution and weakening asset values in financial markets could signal or precipitate an excessive softening in household and business spending

The second reason is to capture some of the decline in real interest rates in response to both recent negative news on real activity and the view of some market participants that declines in real activity will bring inflation down quickly. The overheating scenario, meanwhile, now causes less acceleration in inflation. We reduced this scenario's impact on inflation because we see more evidence in favor of the over-consumption interpretation of the scenario than for the inflation effects, as our underlying measures of inflation are indicating less upside inflation risk.

The forecast distributions for core PCE inflation and GDP growth produced by the standard risk assessments are shown in Exhibits C-4 and C-5. The central forecast projects through the end of 2009 under the assumption that output grows at the potential rate of 3.0% and core PCE inflation eventually converges back to the implicit inflation target of 1.5%. We discussed the assumption behind this extension in the special topic *Forecast Errors and Implications for Policy* in the June Blackbook. These exhibits also contain the expected value of the forecast distributions. For the first time in two years, the risks to the inflation forecast are approximately balanced; the central forecast and the expected value of the forecast distribution are essentially identical, indicating equal amounts of upside and downside risk. At the same time, the downside risk to the real activity forecast is the largest it has been in two years.

In prior Blackbooks, we have examined the probability of 4-quarter core PCE inflation exceeding 2.5% during any quarter through the end of 2008. Because of the change in the risks around the inflation forecast, we now choose to focus on the probability that 4-quarter core PCE inflation will be below 2% at the end of 2007. Currently this probability

is 49% (40% in October). This increase in probability is mainly a result of the switch to balanced risks around the inflation forecast. The probability that the expansion continues through the end of 2008 is 80% (85% in October). The recession risk has increased due to the more negative consequences for real activity in the over-tightening scenario.

The FRBNY “confidence intervals” can be compared to those presented in the Greenbook. In general we have a similar level of confidence as the Board staff for 2006 on both inflation and real activity but less confidence for 2007 on inflation. For example, the Greenbook has a 70% probability interval of width 1.4 percentage points for core PCE inflation in 2007, while our 70% interval has a width of 1.6 percentage points. Thus, though we have a more benign central forecast for inflation in 2007, the 85th percentile of the distributions are approximately equal. The source of the wider interval around our forecast is the weights we place on our alternative scenarios. These scenarios do not receive the same weights in the historical data since 1986, from which the Greenbook derives its forecast errors.

To help gauge the importance of the differences between our outlook and the Greenbook forecast we calculate the percentile of the baseline Greenbook forecasts for output and inflation in our forecast distributions. The results are shown in the table below, with October values appearing in parentheses. We are marginally more optimistic than the Board staff on output growth going forward and significantly more optimistic on inflation. This latter statement is particularly true in 2008, when the 85th percentile of our inflation distribution is 2.2% (2.6% in October), while that for the Greenbook forecast is 3.0%. These substantive differences stem from our assumption of a lower level of inflation persistence and the weight we place on the over-tightening scenario.

Table: Percentile of Greenbook Forecast in FRBNY Forecast Distribution

	Core PCE	Output
2006	49 (55)	45 (52)
2007	63 (63)	48 (40)
2008	65 (66)	48 (44)

4. Policy Alternatives

Our main forecast and risk assessment are consistent with holding the target FFR at 5.25% at the upcoming meeting. Our path for the target FFR going forward is unchanged from the October Blackbook, with a 5.00% target at the end of 2007 and a 4.75% target at the end of 2008, but the evolution of our outlook for output and inflation suggests a change in the asymmetry of the forward signal. Thus, our overall prescription for policy, including both the path and the signal, has moved down somewhat.

Late in September, following weak housing data and a surprisingly low reading on manufacturing confidence in the third district, we switched to a flat (symmetric) signal for the near-term, though we maintained the expected near-term FFR of 5.25%. We retained this policy assumption until the first week in December. The weak data on manufacturing and a larger-than-expected decline in housing activity then led us to increase the downside risk to our forecast; we have thus added a downward tilt to the near-term signal. We will revert to a flat signal if inflation does not decelerate as expected in our outlook.

Consistent with the changes in our forecast distribution over the inter-meeting period, this downward tilt is now also the policy prescription from our *Baseline* rule [Exhibit D-1]. In contrast, the path implied by the *Opportunistic Disinflation* now suggests a short-term neutral signal, as opposed to a tightening bias it had in October. One rationale for maintaining the current upward tilt in the statement concerns our inability to sufficiently

calibrate the language to achieve a movement in the expected rate path that would capture such a subtle change in our views. The recent differences between the path priced into markets and the path consistent with our forecast illustrate the difficulty of crafting language that clearly communicates our intended signal. It is possible that removing the upward tilt from the language at this juncture would not maintain the market path but would instead push it down further. Since the market path at the end of 2007 is only consistent with the *Dove* policy rule, we believe it would be undesirable to cause further declines in the market path.

The near-term shift in the *Baseline* rule from a neutral signal to a downward tilt implies a path close to that currently priced into markets for the near term, but not for later in 2007. The main source of this change in our prescription is the increase our downside risk to real activity. We have also reduced the upside risk to the inflation forecast, even though most measures of underlying inflation remain above the comfort zone for an implicit target. The declines in both FRBNY measures of underlying inflation (smoothed inflation and the Underlying Inflation Gauge), as well as the trimmed mean measures [Exhibit A-7], support this reduction in upside risk. Both the sustained decrease in the TIPS-implied inflation at short-to-medium horizons and the recent decline in energy prices also support this improvement in inflation prospects.

To provide a quantitative analysis of the germane policy alternatives, we examine in detail the prescriptions implied by three policy rules:

1. *Baseline Policy Rule (at near-term market expectations)*. Hold the FFR at 5.25% in December and send a signal of a downward tilt regarding future actions.
2. *Opportunistic Disinflation Rule (above near-term market expectation)*. Hold the FFR at 5.25% in December and send a neutral signal.
3. *Dove Rule (below near-term market expectations)*. Possibility of a cut in January 2007 and signal the possibility of further rate cuts in response to signs of weakness in real activity.

The preamble to the Section D exhibits describes how the various rules react to incoming data.

The *Opportunistic Disinflation* rule is designed to provide the profile of an FFR path for policymakers who want to signal a more aggressive stance on inflation. Under this rule the policymaker raises the FFR in accordance with the *Baseline* rule but lowers the FFR more slowly than the *Baseline* rule prescribes, which keeps the real rate higher for a longer period at the end of a tightening cycle. The *Dove* rule, meanwhile, generates the profile of an FFR path for policymakers who want to signal a stronger reaction to weakness in real activity. When the output gap is negative, the *Dove* rule places equal weight on deviations of inflation from target and output below potential.

Exhibit D-1 contains the prescriptions implied by each of these three rules when averaging over the Bank's forecast distribution; the prescriptions thus reflect the range of outcomes under our alternative scenarios, as well as the probabilities we attach to those scenarios. The figure shows the implied (quarterly average path) of FFR through the end of 2009 for each rule and for the path currently priced into markets.

The *Opportunistic Disinflation* rule maintains the FFR at 5.25% through the end of 2007 and then slowly lowers it to 4.5%. The effectiveness of such a policy path depends on the policymaker having established credibility in fighting inflation. To understand this assertion, consider two policymakers, both with the same preferences, but one enjoying (exogenously assigned) perfect credibility while the other has to "earn" it. The policymaker with the luxury of not having to ensure against a loss of credibility would likely choose to respond to inflation and inflation forecasts above target according to the *Opportunistic Disinflation* rule. In contrast, the other policymaker, needing to establish credibility, would respond more aggressively to inflation data above the comfort zone and choose a more hawkish (and volatile) policy path.

The *Dove* rule implies lower rates than currently priced into the markets. The projected FFR falls below the market-implied rate in early 2007, meets the market at the end of 2007, and diverges further as the horizon extends.

As indicated above, the *Baseline* rule is more consistent with holding the FFR at 5.25% through the 2007Q1. Then it suggests that the policymaker should move toward the neutral rate (4 to 4.25%) by slowing cutting rates. The change in expected value of this rule is mainly based on the now stronger effects of the over-tightening scenario on output and inflation; it now implies that the expected path from this rule falls slightly below the neutral rate at the end of forecast horizon. If instead of considering the expected value of the *Baseline* rule, we focus on the median value (50% of probability above, 50% of probability below), it lines up exactly with the policy conditioning assumption for the central forecast: keep the FFR at 5.25% through 2007Q3, followed by a cut to 5.00% in 2007Q4 and a gradual decline to the neutral rate.

Exhibit D-2 and Exhibit D-3 show, respectively, the nominal and real FFR implied by our four alternative scenarios under the *Baseline* rule. All the scenarios, including our central forecast scenario, imply paths significantly different from that currently priced into markets. The over-tightening scenario, however, is the only one that produces a path below the market path.

Exhibit D-4 shows the results of using our *Baseline* rule from 2004Q4 to the present—setting the initial FFR at its average value of 1.9% in 2004Q4—with a 1.5% inflation target and a 2.0% inflation target. (See the preamble to Exhibit D for more information on the standard policy rules, as well as this exercise.) The paths derived from the 1.5% target and the 2.0% target both follow the actual FFR path closely until the middle of 2005. From this point on, the slope of actual policy has been considerably steeper than that implied by the *Baseline* rule under either target. Looking forward, we find that the path implied by the policy rule using the 1.5% inflation target is closer to the implied market path at the end of 2007 than is the rule with the 2.0% target.

This exhibit also includes the implications of averaging our three policy rules, with the weights used to generate the average chosen to match the market-implied expected path as closely as possible. This exercise matches the market quite closely in 2007, as it did in the October Blackbook. Without the increased intensity of effects of the over-tightening scenario, however, the gap would have been much larger.

Exhibit D-5 contains a probabilistic metric for comparing the market-implied paths of the FFR with those of our policy rules in 2007Q4. It compares the implied distributions of FFR from the three rules and the average across rules with the distribution currently priced into markets. Again, the combination of our forecast distributions and the *Opportunistic Disinflation* rule implies a much higher level for the FFR than is priced into markets for 2007Q4. In contrast, the *Dove* rule's prescription is now very close to the market expectation for that quarter. The strong skewness introduced into the distribution of the prescriptions of the *Baseline* rule for end-2007 can be seen by the large change in the percentile of the market expectation in the rule's distribution. This skewness is also evident in Exhibit D-6 from the 5% probability of a 1% FFR at the end of 2007. In the construction of our rules, a 1% FFR is associated with an economy experiencing bad deflation.

A. Forecast Details

Exhibit A-1. Actual and Projected Percentage Changes in GDP, Prices, and the Unemployment Rate

This table summarizes the FRBNY forecast for the current FOMC cycle and the previous two cycles. It provides the forecasts of real GDP growth, the change in the GDP deflator, the change in the PCE deflator, the change in core PCE deflator, and the level of the unemployment rate. Data frequencies are both quarterly and yearly (Q4/Q4) over the forecast horizon.

Source: MMS Function, FRBNY

Exhibit A-2. Detailed Comparison of FRBNY and Greenbook Forecasts

This table summarizes the baseline FRBNY and Board forecasts for the current FOMC cycle and the previous cycle. In addition to variables included in Exhibit A-1, there are forecasts for the growth contributions of some broad components of GDP, the growth of some measures of productivity and wages, labor force participation, payroll employment growth, and some financial market variables. Data frequencies are yearly (Q4/Q4 or Q4 level) over the forecast horizon.

Source: MMS Function, FRBNY; and Federal Reserve Board staff

Exhibit A-3. Judgment Table

This table gives history and current forecasts of the primary variables in the FRBNY forecast over the forecast horizon. This includes the detailed judgments—such as those for interest rates, profit growth, productivity, and real activity—that are behind the FRBNY forecasts for aggregates such as real GDP and inflation. Data frequencies are both quarterly and yearly (Q4/Q4 or Q4 level).

Source: MMS Function, FRBNY

Exhibit A-4. Real GDP and Components (Growth Contributions)

This table provides history and current forecasts of the real GDP growth contributions for the broad components of expenditures. Growth contributions are in percentage points.

Source: MMS Function, FRBNY

Exhibit A-5. Alternative GDP and Inflation Forecasts

This table compares the FRBNY forecast with real GDP growth and CPI inflation forecasts from other sources. In addition to the FRBNY forecast, the table includes the median forecasts from two surveys of forecasters (Blue Chip and Survey of Professional Forecasters [SPF]), the forecast from Macroeconomic Advisers, and the forecast from a small internal model (PSI model) that uses business activity and sentiment measures as the primary independent variables.

Source: MMS Function, FRBNY; Blue Chip Economic Indicators; FRB Philadelphia Survey of Professional Forecasters; and Macroeconomic Advisers

Exhibit A-6 (1, 2, & 3). Recent Behavior of Inflation

The three tables in this exhibit show the changes in the overall price indices and various components for the most recent month of released data, as measured by the PCE deflator, CPI, and PPI. Growth rates (at annual rate) are taken over 1, 3, 6, 12, and 24 months.

Source: Bureau of Economic Analysis and Bureau of Labor Statistics

Exhibit A-7. Measures of Trend Inflation

These charts display various measures of trend inflation. The alternative measures of CPI inflation are the core, the median, the trimmed mean (Cleveland Fed), a smoothed measure (from overall CPI inflation using a time series model estimated at FRBNY), and the Underlying Inflation Gauge (UIG) measure. (A non-technical description of the construction of this measure is in the Appendix to Exhibit A-7 and A-8 below.) The alternative measures of PCE inflation are the core, the trimmed mean (Dallas Fed), and a smoothed measure (calculated in a manner similar to the smoothed CPI measure). Also included are charts showing the annualized change in the core CPI and PCE over the 24-, 12-, 6-, and 3-month horizons. The horizontal lines show the implied target range used by Macroeconomic Advisers.

Source: FRB Cleveland; FRB Dallas; MMS Function, FRBNY; and Swiss National Bank

Exhibit A-8. Expected Inflation: Underlying Inflation Gauge (UIG) and TIPS Implied Inflation

The chart displays compares inflation expectations over various horizons as measured by the UIG and TIPS (A non-technical description of the construction of the UIG is in the Appendix to Exhibit A-7 and A-8 below. A non-technical description of the construction of inflation expectations from TIPS is in the Appendix to Exhibit B-2).

Source: MMS Function, FRBNY; and Swiss National Bank

Appendix to Exhibit A-7 and A-8. Construction of UIG (Underlying Inflation Gauge)

The Underlying Inflation Gauge is a measure of underlying inflation that incorporates information from a broad set of nominal and real variables. It uses a dynamic factor model to extract a common component from the set of variables and then removes the high frequency movements (fluctuations with a frequency of up to one year) from this common component. This filtering reflects our view that monetary policy is primarily concerned with shocks that impact inflation in the medium-term. The level of the UIG is designed to map into the level of the CPI

A. Forecast Details

Exhibit A-1: Actual and Projected Percentage Changes of GDP, Prices, and the Unemployment Rate

	Real GDP		Chain Type				PCE Deflator		Core PCE		Unemployment Rate				
	Sep06	Oct06	Sep06	Oct06	Dec06	Sep06	Oct06	Dec06	Sep06	Oct06	Dec06				
	Oct06	Dec06	Sep06	Oct06	Dec06	Sep06	Oct06	Dec06	Sep06	Oct06	Dec06				
2006 Q1	5.6	5.6	3.2	3.2	3.3	2.0	2.0	2.0	2.1	2.1	4.7	4.7	4.7		
2006 Q2	2.9	2.6	3.3	3.3	3.3	4.1	4.0	4.0	2.9	2.8	4.6	4.6	4.6		
2006 Q3	2.3	1.3	2.2	2.0	1.8	2.6	2.5	2.4	2.4	2.3	4.7	4.7	4.7		
2006 Q4	2.6	2.0	1.5	3.1	1.3	2.3	2.0	-0.5	2.2	2.2	4.7	4.8	4.5		
2007 Q1	3.0	2.9	2.5	2.0	2.3	2.3	2.1	2.2	2.1	2.0	4.7	4.8	4.6		
2007 Q2	3.0	2.9	3.2	1.9	2.0	2.2	2.1	2.2	2.0	1.9	4.7	4.8	4.6		
2007 Q3	3.1	3.2	3.3	2.1	2.2	2.2	2.1	2.1	1.9	1.9	4.7	4.8	4.6		
2007 Q4	3.0	2.7	2.8	1.8	1.8	2.2	2.1	2.1	1.9	1.8	4.7	4.8	4.6		
2008 Q1	3.0	2.8	3.0	2.2	2.1	2.2	2.1	2.1	1.8	1.8	4.7	4.8	4.6		
2008 Q2	3.0	3.1	3.0	2.6	2.4	2.2	2.1	2.1	1.8	1.7	4.7	4.8	4.6		
2008 Q3	3.0	3.2	3.2	2.4	2.2	2.2	2.0	2.0	1.8	1.7	4.7	4.8	4.6		
2008 Q4	3.0	2.8	2.9	2.0	1.9	2.2	2.0	2.1	1.8	1.7	4.7	4.8	4.6		
2004 Q4 to 2005 Q4	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.1	2.1	-0.5	-0.5	-0.5		
2005 Q4 to 2006 Q4	3.3	2.9	3.0	2.7	2.9	2.4	2.7	2.6	2.0	2.4	2.3	2.4	-0.2	-0.1	-0.4
2006 Q4 to 2007 Q4	3.0	3.0	2.9	2.2	2.0	2.1	2.2	2.1	2.2	2.0	1.9	1.9	0.0	0.0	0.1
2007 Q4 to 2008 Q4	3.0	3.0	3.0	2.4	2.2	2.1	2.2	2.0	2.1	1.8	1.7	1.8	0.0	0.0	0.0

Notes: Columns reflect the date of a forecast. Italics/blue font indicate a data release prior to date of a forecast

A. Forecast Details

Exhibit A-2: Detailed Comparison of FRBNY and Greenbook Forecasts

	FRBNY				Board								
	2006		2007		2008		2006		2007		2008		
	OCI	Dec	OCI	Dec	OCI	Dec	OCI	Dec	OCI	Dec	OCI	Dec	
REAL GDP (Q4/Q4)	2.9	3.0	3.0	2.9	3.0	3.0	2.9	2.8	2.9	2.2	2.2	2.5	2.5
GROWTH CONTRIBUTIONS (Q4/Q4)													
FINAL SALES TO DOMESTIC PURCHASERS	3.0	3.0	3.1	3.1	3.2	3.2	2.9	2.9	2.7	2.4	2.2	2.6	2.7
CONSUMPTION	2.3	2.3	2.1	2.1	2.1	2.1	2.3	2.3	2.3	1.9	1.7	1.9	1.8
BFI	0.9	0.9	0.7	0.8	0.6	0.6	0.9	0.8	0.8	0.5	0.4	0.4	0.4
STRUCTURES	0.4	0.4	0.2	0.2	0.2	0.2	0.5	0.4	0.4	0.2	0.1	0.0	0.0
EQUIPMENT & SOFTWARE	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4
RESIDENTIAL INVESTMENT	-0.8	-0.8	-0.3	-0.3	0.0	0.0	-0.8	-0.9	-0.9	-0.4	-0.4	0.1	0.1
GOVERNMENT	0.5	0.6	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.2	0.4
FEDERAL	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.1
STATE & LOCAL	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.2	0.3	0.2	0.3
INVENTORY INVESTMENT	-0.1	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	0.1	0.1	0.2	0.0
NET EXPORTS	0.0	0.0	-0.2	-0.1	-0.2	-0.2	0.0	0.0	0.2	-0.2	-0.1	-0.4	-0.2
INFLATION/PRODUCTIVITY/WAGES (Q4/Q4)													
GDP DEFLATOR	2.9	2.4	2.0	2.1	2.2	2.1	2.5	2.5	2.5	2.7	2.6	2.5	2.4
PCE	2.6	2.0	2.1	2.2	2.0	2.1	1.9	2.0	2.0	2.7	2.8	2.1	2.1
CORE PCE	2.3	2.4	1.9	1.9	1.7	1.8	2.4	2.4	2.4	2.3	2.3	2.1	2.1
COMPENSATION PER HOUR	7.2	4.9	4.2	4.6	4.1	4.7	6.5	6.5	4.9	5.1	5.1	4.9	5.0
OUTPUT PER HOUR	2.1	1.5	2.5	2.5	2.5	2.5	1.7	1.7	1.2	2.5	2.6	2.7	2.7
UNIT LABOR COSTS	5.2	3.4	1.7	2.1	1.6	2.2	4.7	4.7	3.6	2.6	2.4	2.2	2.3
EMPLOYMENT VARIABLES													
UNEMPLOYMENT RATE (Q4 LEVEL)	4.8	4.5	4.8	4.6	4.8	4.6	4.7	4.7	4.5	5.1	5.0	5.1	5.1
PARTICIPATION RATE (Q4 LEVEL)	66.2	66.3	66.2	66.3	66.2	66.3	66.1	66.2	66.2	65.8	65.8	65.5	65.6
NONFARM PAYROLL EMPLOYMENT (Q4/Q4 CHANGE)													
TOTAL, IN THOUSANDS	1504	1699	1232	1246	1293	1367	1600	1600	1800	600	900	700	700
AVERAGE PER MONTH, IN THOUSANDS	125	142	103	104	108	114	133	133	150	50	75	58	58
FINANCIAL MARKET VARIABLES													
FED FUNDS RATE (PERCENT)	5.25	5.25	5.00	5.00	4.75	4.75	5.25	5.25	5.25	5.25	5.25	5.00	5.00
BAA BOND YIELD (PERCENT)	6.8	6.3	6.8	6.8	6.8	6.8	6.6	6.6	6.3	6.7	6.7	6.7	6.7
EFFECTIVE EXCHANGE RATE (Q4/Q4 % CHANGE)	-4.9	-6.9	-1.6	-1.7	-1.6	-1.6	-3.0	-3.0	-4.2	-1.2	-1.3	-1.2	-0.8

A. Forecast Details

Exhibit A-3: Judgment Table

	2006:01	2006:02	2006:03	2006:04	2007:01	2007:02	2007:03	2007:04	2008:01	2008:02	2008:03	2008:04	2005	2006	2007	2008
REAL GDP AND COMPONENTS (% Change, AR)																
GDP.....	5.6	2.6	2.2	1.5	2.5	3.2	3.3	2.8	3.0	3.0	3.2	2.9	3.1	3.0	2.9	3.0
CHANGE IN INVENTORIES (GROWTH CONTRIBUTION) 1\.....	0.0	0.4	0.2	-0.9	-0.1	0.0	-0.1	0.3	-0.1	-0.1	0.0	0.3	-0.1	-0.1	0.0	0.0
DOMESTIC PRIVATE PURCHASES.....	5.3	2.0	2.3	1.4	2.5	2.9	3.0	3.2	3.1	2.8	2.9	3.2	3.1	2.7	2.9	3.0
CONSUMPTION EXPENDITURES.....	4.8	2.6	2.9	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.0	2.9	3.3	2.9	2.9
BUSINESS FIXED INVESTMENT.....	13.7	4.4	10.0	5.6	7.3	7.3	7.0	6.7	5.7	5.7	5.4	5.4	5.6	8.3	7.1	5.5
RESIDENTIAL INVESTMENT.....	-0.3	-11.1	-18.0	-20.0	-15.0	-4.6	-0.7	-4.3	-0.8	-0.8	-0.8	-0.8	9.0	-12.7	-6.3	-0.8
NET EXPORTS (GROWTH CONTRIBUTION) 1\.....	0.0	0.4	-0.2	0.0	-0.2	0.1	0.1	-0.5	-0.3	0.0	0.1	-0.5	-0.1	0.0	-0.1	-0.2
EXPORTS	14.0	6.2	6.3	14.3	7.3	7.6	7.1	6.8	7.1	7.1	9.1	8.2	6.7	10.1	7.2	7.9
IMPORTS	9.1	1.4	5.3	9.1	5.9	4.6	4.2	7.8	6.4	4.8	5.5	8.5	5.2	6.2	5.6	6.3
FEDERAL GOVERNMENT.....	8.8	-4.5	1.5	9.4	5.5	1.5	2.0	2.0	5.5	1.5	1.5	1.5	2.1	3.6	2.7	2.5
STATE & LOCAL GOVERNMENTS.....	2.7	4.1	2.6	2.8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.8	3.0	3.0	3.0
INTEREST RATE ASSUMPTIONS (%)																
FEDERAL FUNDS RATE (TARGET).....	4.43	4.90	5.25	5.25	5.25	5.25	5.00	5.00	5.00	5.00	4.75	4.75	4.0	5.25	5.00	4.75
YIELD ON 10-YR GOVERNMENT.....	4.6	5.1	4.9	4.6	4.7	4.8	4.9	5.0	5.0	5.0	5.0	5.0	4.5	4.6	5.0	5.0
BAA BOND YIELD.....	6.3	6.7	6.6	6.3	6.4	6.5	6.6	6.8	6.8	6.8	6.8	6.8	6.3	6.3	6.8	6.8
INCOME (% Change, AR)																
PERSONAL INCOME.....	9.4	3.2	5.5	5.7	4.6	5.4	6.4	4.6	6.7	4.9	6.6	5.0	4.6	5.9	5.3	5.8
REAL PERSONAL DISPOSABLE INCOME.....	4.6	-1.5	3.7	5.8	2.8	3.6	6.1	2.4	4.5	2.7	4.5	2.9	0.3	3.1	3.7	3.6
PERSONAL SAVING RATE (% OF DPI).....	-0.3	-1.4	-1.3	-0.5	-0.6	-0.5	0.1	0.0	0.4	0.2	0.4	0.4	-0.4	-0.9	-0.2	0.4
CORPORATE PROFITS BEFORE TAXES.....	60.8	5.9	17.7	-17.3	0.1	2.7	1.1	-0.5	-17.1	21.4	0.4	-0.7	12.8	13.4	0.8	0.1
PRICES & PRODUCTIVITY (% Change, AR)																
GDP IMPLICIT DEFLATOR.....	3.3	3.3	1.8	1.3	2.3	2.0	2.2	1.8	2.1	2.4	2.2	1.9	3.1	2.4	2.1	2.1
PERSONAL CONSUMPTION EXPENDITURES.....	2.0	4.0	2.4	-0.5	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.1	3.1	2.0	2.2	2.1
CORE PERSONAL CONSUMPTION EXPENDITURES.....	2.1	2.8	2.2	2.5	2.0	1.9	1.9	1.9	1.9	1.9	1.8	1.8	2.1	2.4	1.9	1.8
CONSUMER PRICE INDEX.....	2.2	5.0	2.9	-1.1	2.9	2.6	2.4	2.4	2.3	2.3	2.3	2.3	3.7	2.2	2.6	2.3
CORE CONSUMER PRICE INDEX.....	2.4	3.5	3.0	2.3	2.7	2.5	2.4	2.3	2.2	2.2	2.2	2.2	2.1	2.8	2.5	2.2
COMPENSATION PER HOUR (NONFARM BUSINESS).....	13.7	-1.2	2.6	5.2	6.3	4.0	3.9	4.2	6.0	4.3	4.3	4.0	4.1	4.9	4.6	4.7
OUTPUT PER HOUR (NONFARM BUSINESS).....	4.3	1.2	0.2	0.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.5	2.5	2.5
UNIT LABOR COST (NONFARM BUSINESS).....	9.4	-2.4	2.3	4.8	3.8	1.5	1.4	1.7	3.5	1.8	1.8	1.5	1.6	3.4	2.1	2.2
REAL ACTIVITY																
CAPACITY UTILIZATION (MANUFACTURING, %).....	80.3	80.8	81.2	80.7	80.8	80.9	81.0	81.1	81.2	81.3	81.4	81.5	78.9	80.8	81.0	81.4
CIVILIAN UNEMPLOYMENT RATE (%) 2\.....	4.7	4.6	4.7	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.9	4.5	4.6	4.6
PRIVATE HOUSING STARTS (THOUS. AR).....	2123	1873	1720	1580	1615	1630	1640	1660	1680	1710	1730	1740	2073	1824	1636	1718
LIGHT VEHICLE SALES (MIL UNITS, AR) 3\.....	16.9	16.3	16.6	16.2	16.3	16.4	16.4	16.4	16.4	16.5	16.5	16.5	16.9	16.5	16.4	16.5
FEDERAL SURPLUS/DEFICIT (Unified Basis, Bil\$, NSA) 4\.....	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-317.7	-357.2	-298.6	-297.6

NOTE: All series other than interest rates and the federal deficit are seasonally adjusted. Italics/blue indicate a reported value. 1\ Growth contribution to real GDP 2\ Annual values are end of Q4 levels 3\ Includes domestic and imported auto and light truck sales 4\ Yearly numbers are based on the fiscal year

A. Forecast Details

Exhibit A-4: Real GDP and Components (Growth Contributions)

	2006				2007				2008				Q4/Q4 % CHANGE/Q4 LEVEL			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2005	2006	2007	2008
	REAL GDP (Growth, Annual Rate)	5.6	2.6	2.2	1.5	2.5	3.2	3.3	2.8	3.0	3.0	3.2	2.9	3.1	3.0	2.9
<i>Contributions to GDP growth:</i>																
FINAL SALES TO DOMESTIC PURCHASERS	5.7	1.7	2.3	2.4	2.7	3.1	3.3	3.1	3.4	3.1	3.1	3.1	3.1	3.0	3.1	3.2
CONSUMPTION EXPENDITURES.....	3.4	1.8	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	2.1
BUSINESS FIXED INVESTMENT.....	1.4	0.5	1.0	0.6	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.9	0.8	0.6
RESIDENTIAL INVESTMENT.....	0.0	-0.7	-1.2	-1.2	-0.8	-0.2	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	-0.8	-0.3	0.0
FEDERAL GOVERNMENT.....	0.6	-0.3	0.1	0.6	0.4	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.1	0.3	0.2	0.2
STATE & LOCAL GOVERNMENTS.....	0.3	0.5	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
NET EXPORTS	0.0	0.4	-0.2	0.0	-0.2	0.1	0.1	-0.5	-0.3	0.0	0.1	-0.5	-0.1	0.0	-0.1	-0.2
EXPORTS.....	1.4	0.7	0.7	1.5	0.8	0.9	0.8	0.8	0.8	0.8	1.1	1.0	0.7	1.1	0.8	0.9
IMPORTS.....	-1.5	-0.2	-0.9	-1.5	-1.0	-0.8	-0.7	-1.3	-1.1	-0.8	-1.0	-1.5	-0.8	-1.0	-1.0	-1.1
CHANGE IN INVENTORIES	0.0	0.4	0.2	-0.9	-0.1	0.0	-0.1	0.3	-0.1	-0.1	0.0	0.3	-0.1	-0.1	0.0	0.0

Note: Contributions may not add up to GDP growth due to rounding.

A. Forecast Details

Exhibit A-5: Alternative GDP and Inflation Forecasts

	Release Date	2006-Q4		2007-Q1		2007-Q2	
		Prev*	Dec	Prev*	Dec	Prev*	Dec
GDP							
FRBNY	12/8/2006	2.0	1.5	2.9	2.5	2.9	3.2
PSI Model	12/6/2006	2.2	2.1	--	2.3	--	--
Blue Chip	12/10/2006	2.3	1.9	2.6	2.4	2.7	2.6
Median SPF	11/13/2006	2.9	2.5	2.9	2.7	2.7	2.9
Macro Advisers	12/1/2006	2.5	1.4	2.9	2.3	3.3	3.1
CPI							
FRBNY	12/8/2006	2.8	-1.1	2.6	2.9	2.6	2.6
Blue Chip	12/10/2006	0.0	-1.7	2.8	2.7	2.6	2.7
Median SPF	11/13/2006	2.8	-0.3	2.7	2.8	2.5	2.6
Macro Advisers	12/1/2006	-1.0	-2.1	3.1	2.8	2.9	2.8
CORE CPI							
FRBNY	12/8/2006	2.8	2.3	2.6	2.7	2.5	2.5
Macro Advisers	12/1/2006	2.9	2.2	2.7	2.5	2.6	2.5

Notes: Previous release of SPF is August, of Macro Advisers and Blue Chip is November, and of all others is October.

A. Forecast Details

Exhibit A-6: Reference Table 1 - CONSUMER PRICE INDEX DATA AS OF OCTOBER 2006

	Annualized Percent Change Over Indicated Interval					Weights (December 2005)
	24 Month	12 Month	6 Month	3 Month	1 Month	
Consumer Price Index						Total
Energy	2.8	1.3	0.7	-2.9	-5.8	100.0
	7.2	-11.2	-18.2	-43.8	-58.1	8.7
All Items Ex Energy						
Food	2.4	2.8	2.9	2.6	1.8	13.9
Food Away From Home	2.4	2.6	3.2	4.0	3.7	6.0
	3.0	3.0	3.2	2.8	3.7	
All Items Ex Food and Energy	2.4	2.8	2.8	2.3	1.2	77.4
Core Chain-Weight CPI (NSA)	2.1	2.5	2.0	3.2	3.2	100.0
Core Goods						
Apparel	0.2	0.2	-0.3	-0.6	-3.4	22.3
Medical Care Commodities	-0.3	0.6	-0.3	3.4	-7.7	3.8
Durable Goods	4.1	4.0	3.7	4.2	3.6	1.5
New Vehicles	-0.4	-1.0	-1.0	-2.8	-2.1	11.6
Used Vehicles	0.3	-0.3	-1.2	-1.4	-1.7	5.2
	0.9	-0.9	-1.6	-7.7	-13.5	1.8
Core Services						
Rent of Primary Residence	3.3	3.8	4.1	3.5	3.5	55.1
Owners' Equivalent Rent	3.5	3.9	4.6	4.7	4.9	5.8
Lodging Away from Home	3.2	4.2	4.7	3.9	4.6	23.4
Medical Care Services	2.9	4.6	1.6	-0.6	-6.0	2.6
Transportation Services	4.4	4.2	4.2	4.9	4.5	4.8
	2.5	2.2	2.9	1.9	0.5	5.7

A. Forecast Details

Exhibit A-6: Reference Table 2 - PCE DEFLATOR DATA AS OF OCTOBER 2006

PCE Deflator	Annualized Percent Change Over Indicated Interval				
	24 Month	12 Month	6 Month	3 Month	1 Month
Market Based PCE Deflator	2.5	1.5	1.1	-1.1	-2.6
	2.3	1.1	0.7	-2.0	-3.7
Durable Goods	-1.1	-1.3	-1.4	-1.9	0.3
Motor Vehicles and Parts	1.0	0.6	-0.1	-0.5	-0.8
Nondurable Goods	2.2	-0.7	-2.2	-9.3	-14.5
Clothing and Shoes	-0.6	0.4	-0.6	4.4	-8.5
Services	3.4	3.1	3.2	3.3	3.1
Housing	3.3	4.2	4.5	3.8	4.2
Transportation	3.9	2.8	2.2	-0.7	3.0
Medical Care	3.2	2.9	3.3	4.2	7.0
PCE Deflator Ex Food and Energy	2.2	2.4	2.4	2.7	2.8
Market Based Core PCE Deflator	1.9	2.1	2.2	2.4	2.5
Personal Business Services-Market Based	2.8	3.2	4.2	11.0	11.8
Personal Business Services-Not Market Based	2.6	2.7	2.9	5.1	3.7

A. Forecast Details

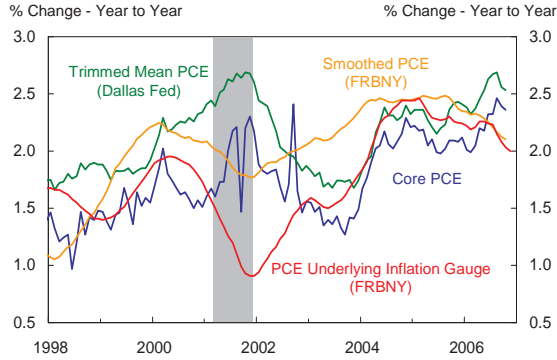
Exhibit A-6: Reference Table 3 - PRODUCER PRICE DATA AS OF OCTOBER 2006

	Annualized Percent Change Over Indicated Interval				
	24 Month	12 Month	6 Month	3 Month	1 Month
Finished Goods					
Finished Consumer Goods					
Finished Consumer Goods Ex Food	2.1	-1.5	-4.2	-10.9	-17.9
Nondurables Ex Food	2.4	-2.2	-5.3	-13.5	-20.4
Durables	2.9	-3.5	-8.4	-19.7	-24.7
Capital Equipment	4.4	-4.2	-9.8	-23.6	-25.3
Electronic Computers (NSA)	-0.6	-1.4	-4.0	-7.1	-21.2
Communication and Related Equipment (NSA)	1.3	0.8	-0.5	-2.2	-10.1
	-24.3	-25.2	-28.2	-28.9	-31.4
	0.0	0.2	0.2	0.0	-4.6
Finished Goods Ex Food and Energy	1.3	0.7	-0.9	-2.7	-10.1
Finished Consumer Goods Ex Food and Energy	1.4	0.7	-1.1	-3.1	-9.6
Intermediate Materials					
Intermediate Materials Ex Food and Energy	5.5	0.6	-0.2	-8.2	-12.4
	5.3	5.9	5.6	1.9	0.0
Crude Materials					
Crude Materials Ex Food and Energy	1.4	-22.0	-18.4	-38.8	-73.6
	10.3	20.0	10.0	-11.6	-14.2

A. Forecast Details

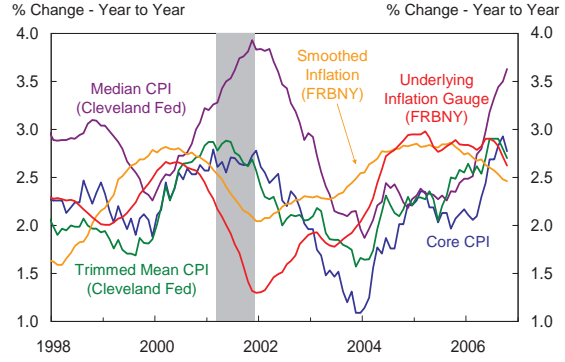
Exhibit A-7: Measures of Trend Inflation

Alternative Measures of PCE Inflation



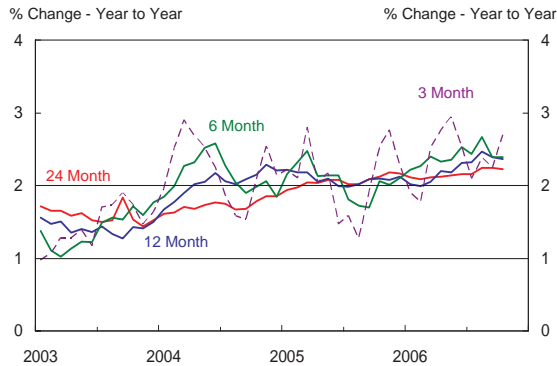
Source: Bureau of Economic Analysis, Dallas Fed, and FRBNY

Alternative Measures of CPI Inflation



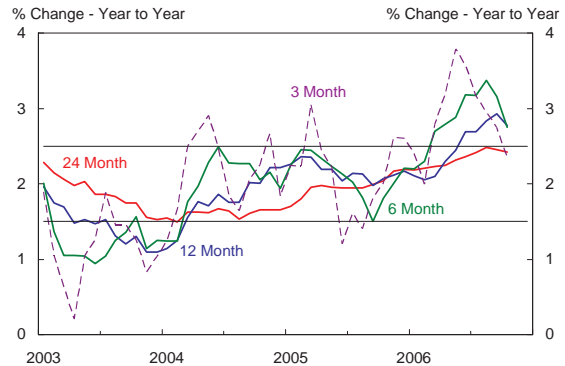
Source: Bureau of Labor Statistics, Cleveland Fed, and FRBNY

Core PCE over Various Horizons



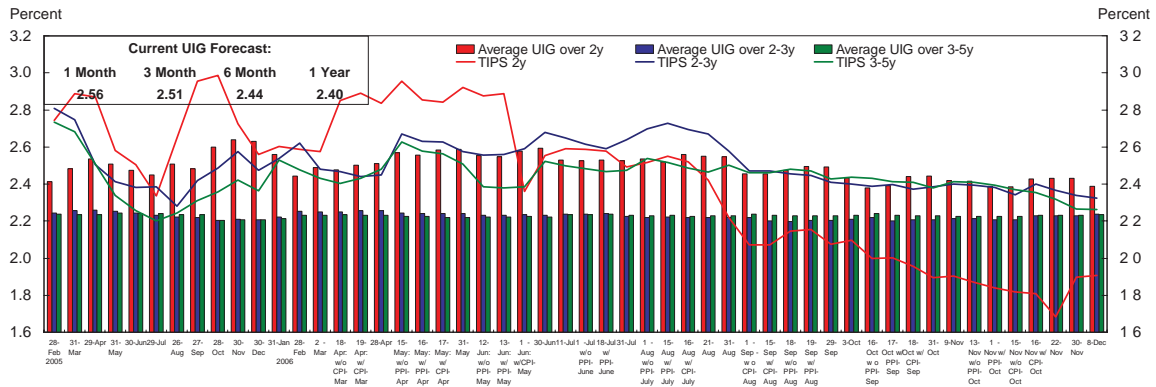
Source: Bureau of Economic Analysis

Core CPI over Various Horizons



Source: Bureau of Labor Statistics

Exhibit A-8: Underlying Inflation Gauge (UIG) and TIPS Implied Inflation



Source: Bloomberg, 8:40AM quotes, MMS Function (FRBNY)

B. Financial Markets

Exhibit B-1. Treasury Yields

The top two charts in this exhibit plot the yields of the on-the-run 3-month and 10-year Treasury securities daily over the past three years and intraday over the inter-meeting period. The middle two charts plot the Treasury yield curve and implied one-year forward rates, as estimated using off-the-run securities. The bottom two charts plot real and nominal forward rates over the past three years for the 4-5 and 5-10 year horizons.

Source: Bloomberg and CM Function, FRBNY

Exhibit B-2. Implied Inflation

The top two charts in this exhibit plot the time series of carry-adjusted implied CPI inflation over the past 12 months, as estimated from nominal and inflation-protected Treasury securities (see the Appendix to Exhibit B-2 below for a description of the construction of the FRBNY version of this measure). The left chart displays data over the 0-5 year and 2-3 year horizons; the right chart displays data over the 4-5 and 5-10 year horizons. The middle left chart plots the 10-year breakeven inflation rate (not carry-adjusted) over the inter-meeting period using intraday data., while the middle right chart shows the carry-adjusted TIPS yield curve for 6-month to 1-year maturities. The bottom chart plots the carry-adjusted breakeven rates for the 6-month to 10-year horizon

Source: Bloomberg; Federal Reserve Board; and CM Function, FRBNY

Exhibit B-3. Economic Releases

This exhibit shows the response of the implied fed funds futures rate, the 10-year Treasury yield, and the 10-year breakeven inflation rate to macroeconomic announcements. Market expectations for the releases are derived from the forward price for the economic derivatives auction, which concludes 30-60 minutes before the release. The surprise, measured in standard deviations, is calculated using the at-the-money implied volatility from the auctions. Yield changes are measured from 5 minutes before to 30 minutes after the release.

Source: Bloomberg and CM Function, FRBNY

Exhibit B-4. Policy Expectations

The charts in this exhibit show market expectations of policy as derived from fed funds and Eurodollar futures, as well as from options on fed funds futures. The top left chart plots the expected path of the fed funds target rate allowing for a time-invariant term premium risk adjustment. The top right chart plots the implied September fed funds rate over the inter-meeting period using intraday data (without an adjustment for any term premia). The middle left chart plots the implied probability of no change in the funds rate versus the probability of a 25 basis point easing at the next meeting (allowing for a time-invariant term premium risk adjustment). The last two charts plot the implied probabilities of various policy rates following the next two meetings.

Source: Bloomberg; FRB Cleveland; Federal Reserve Board; and CM Function, FRBNY

Exhibit B-5. Policy Uncertainty I

The top left chart in this exhibit plots the width of the ranges within which the 3-month Eurodollar rate is expected to remain (with 90% confidence) over the next 3 and 6 months, as estimated from Eurodollar futures options. The top right chart plots the width of the ranges within which the 1-year swap rate is expected to remain (with 90% confidence) over the 1-2 and 4-5 year horizons, as estimated from swaptions. The last chart plots implied skewness and implied volatility in percentages, as derived from Eurodollar futures options. Both measures are averages of 3-, 6- and 9-month values. Positive (negative) implied skewness means that a tightening (easing) surprise around the expected target rate is expected to be larger than an easing (tightening) surprise.

Source: CME; Datastream; and CM Function, FRBNY

Exhibit B-6. Policy Uncertainty II

The top left chart in this exhibit plots the width of the range within which the 3-month Eurodollar rate is expected to remain (with 90% confidence) in the future relative to today. The top right chart shows the changes in the width of these ranges since the day before the last FOMC meeting. The middle chart shows the 50% and 90% confidence intervals around the expected policy path. The last two charts plot time series of the

width of the ranges within which the 3-month Eurodollar rate is expected to remain (with 90% confidence) over the next 6 and 12 months.

Source: Federal Reserve Board

Exhibit B-7. Equity Markets

The top left chart in this exhibit plots the daily closes of the S&P 500 and NASDAQ Composite indices over the past three years. The top right chart plots the S&P 500 over the inter-meeting period using intraday data. The bottom two charts plot implied annualized volatilities for the S&P 500 and NASDAQ Composite indices over the next month and 12 months.

Source: Bloomberg, CBOE, and OptionMetrics

Exhibit B-8. Corporate Credit Risk

The left chart in this exhibit plots corporate credit spreads over the past three years for A- and BB-rated securities. The right chart plots corporate bond default rates over time, measured over the preceding 12-month interval and distinguishing between all and speculative-grade issues.

Source: Merrill Lynch and Moody's

Exhibit B-9. Exchange Rates, Foreign Equity, and Bond Spreads

The top two charts in this exhibit display the exchange rate of the dollar against the euro (in the left panel, with higher values of the index indicating dollar depreciation) and against the yen (in the right panel, with lower values of the index indicating dollar depreciation). The middle-left panel displays the nominal effective exchange rate of the dollar, computed by the Federal Reserve Board using a “narrow” set of weights for 16 major foreign currencies (lower values of the index indicate dollar depreciation). The middle-right chart displays a measure of volatility implied by options on Yen/Dollar and Euro/Dollar rates; each line shows the width of the range (in percentage points) around the current exchange rate within which the exchange rate is expected to fall in one month (with 90 percent confidence). The bottom-left chart displays normalized equity indices for the euro area and Japan. The bottom-right chart displays J.P. Morgan's EMBI+ index of 16 emerging markets' bond spreads over U.S. Treasury yields. (The index includes

below-investment-grade bonds issued in dollars by a selected group of sovereign and quasi-sovereign issuers.)

Source: Federal Reserve Board; BIS; International Function, FRBNY; Reuters; and J.P. Morgan

Exhibit B-10. Foreign Interest Rates

The top two charts in this exhibit display short- and long-term interest rates for the euro area and Japan. The middle two charts display the three-month interest rate futures curves for the euro area and Japan, including the most recent curve. The bottom two charts display “real” yields on specific inflation-linked bonds for the euro area (OAT bonds from France) and Japan; the charts also display inflation expectations implied in these securities, computed as the spread of the yield on inflation-linked bonds over sovereign bonds of comparable maturity.

Source: BIS; Federal Reserve Board; International Function, FRBNY; and Barclays

Exhibit B-11. Energy Futures Curves

This exhibit displays futures curves for gasoline, heating oil, natural gas, and crude oil. The June 30th curve offers a slightly longer-term point of reference. Also included are curves for the dates prior to the last two FOMC meetings and a curve for the most recent date.

Source: Bloomberg

Appendix to Exhibit B-2. Estimation of Implied Inflation from TIPS

The implied inflation series are estimates of inflation expectations derived from nominal Treasury securities and Treasury inflation-protected securities (TIPS). These differ from the simpler breakeven inflation rates that merely subtract real TIPS yields from on-the-run nominal yields of the same maturity. For each individual TIPS, we solve for the inflation rate that equates the discounted payments of the TIPS to its price, where the discount rates are derived from off-the-run nominal securities. We then calculate 2-, 4-, and 5-year inflation rates corresponding to TIPS with those durations. Lastly, we compute approximate forward rates from the rates at the shorter- and longer-dated durations. For example, the 4-5 year forward rate is computed from the 4- and 5-year

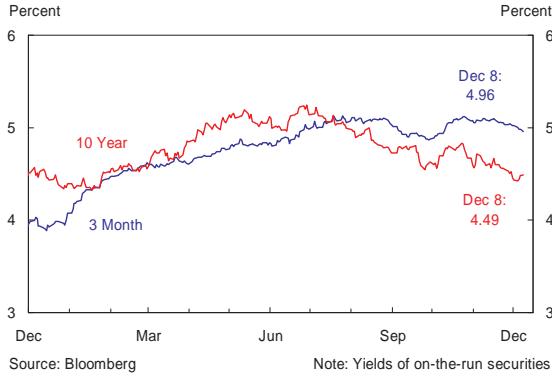
implied inflation values. The 5-10 year forward rate uses the 5-year implied inflation value and the implied inflation rate on the most recently issued 10-year TIPS.

The implied inflation series are also carry adjusted to remove the effect of expected inflation accrual in not seasonally adjusted CPI over the 2½-month indexation lag period in TIPS. Since inflation over this period is either known or largely predictable, it induces predictable variation in the unadjusted implied inflation series that is not necessarily related to future expected inflation. Our adjustment is derived from the forecast of not seasonally adjusted CPI implicit in the same day CPI futures contract traded on the CME. No adjustments are made to the implied inflation measures to account for risk premia or other technical factors.

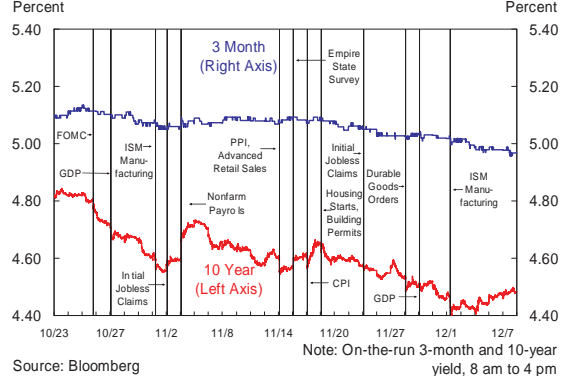
B. Financial Markets

Exhibit B-1: Treasury Yields

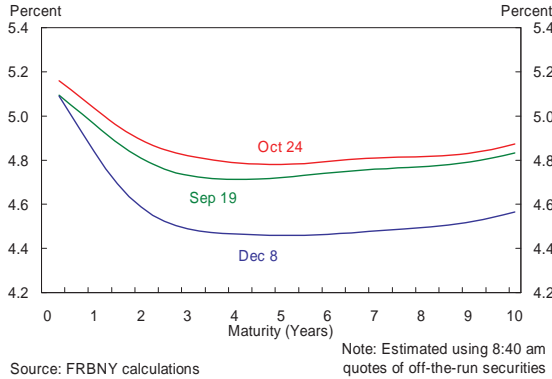
Short- and Long-Term Rates



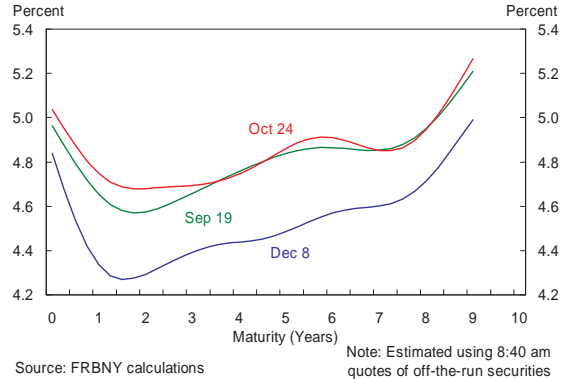
Short- and Long-Term Rates (Intraday)



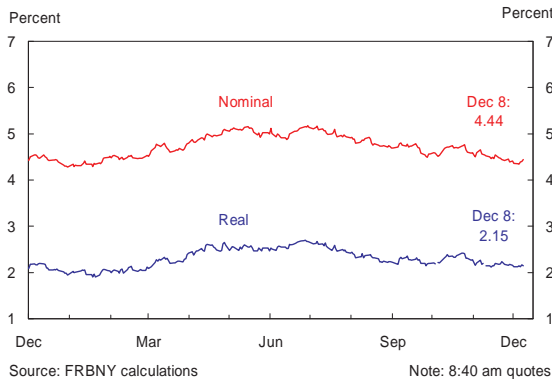
Yield Curves



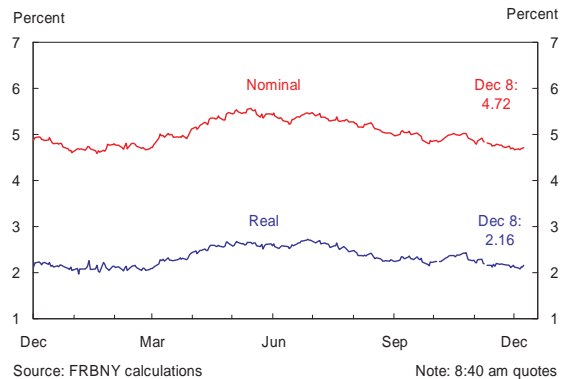
Yield Curves: Implied One-Year Forward Rates



4-5 Year Forward Rates



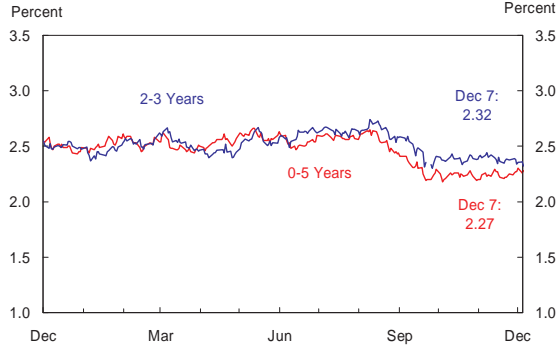
5-10 Year Forward Rates



B. Financial Markets

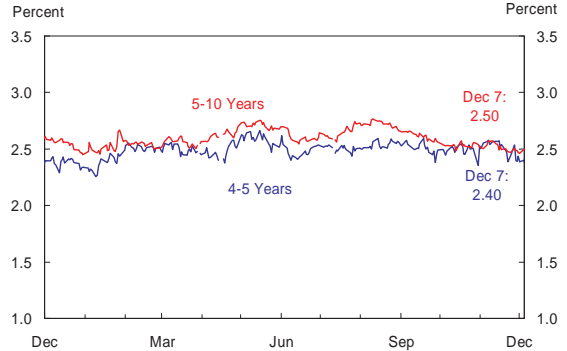
Exhibit B-2: Implied Inflation

TIPS Implied Inflation: 2-3, 0-5 Year Horizon



Source: Federal Reserve Board

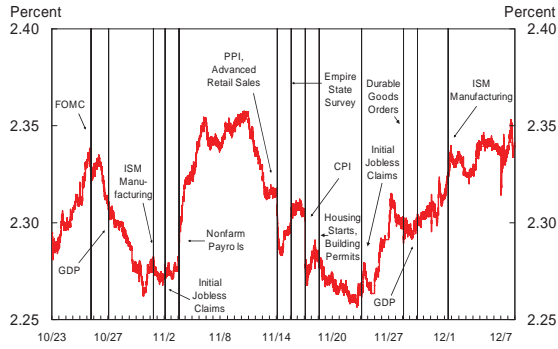
TIPS Implied Inflation: 4-5, 5-10 Year Horizons



Source: FRBNY calculations

Note: 8:40 am quotes

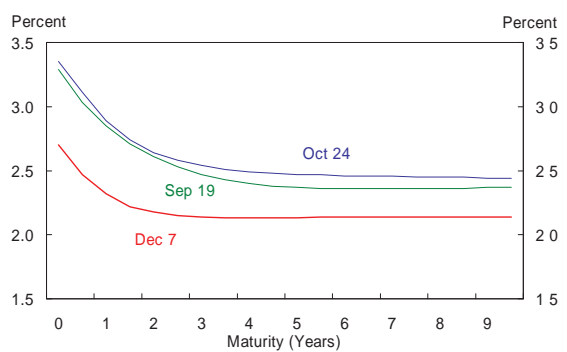
10-Year Breakeven Inflation Rate (Intraday)



Source: Bloomberg

Note: Calculated as difference between on-the-run 0-year Treasury and 10-year TIPS yield. 8 am to 4 pm.

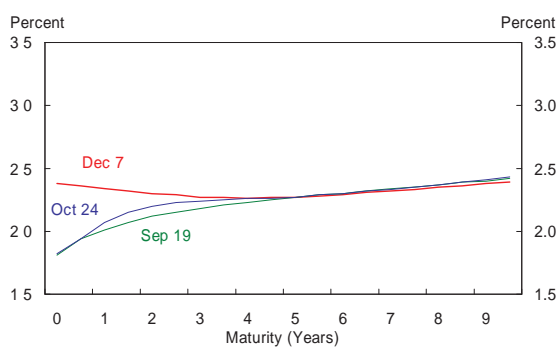
TIPS Curve



Source: Federal Reserve Board

Note: Carry-adjusted

Breakeven Curve



Source: Federal Reserve Board

Note: Carry-adjusted

B. Financial Markets

Exhibit B-3: Economic Releases

Market reaction to macro releases, market expectations using economic derivatives

Release Type	Release Date	Survey Forecast	Actual Release	Market Expectation	Surprise	Surprise (σ 's)	Yield Change (bps)		
							March FF Futures**	Ten Year	Ten Year Breakeven
Change in Nonfarm Payrolls, 1000s	12/8	100	132	94	38	0.5	0	0	0
ISM Manufacturing, index level	12/1	51.5	49.5	*	2.0	*	-3	-4	1
Initial Jobless Claims, 1000s	11/30	315	357	315	42	2.7	0	0	0
GDP, %	11/29	1.8	2.2	*	-0.4	*	0	0	0
Initial Jobless Claims, 1000s	11/22	310	321	304	17	1.1	0	0	0
Core CPI, %	11/16	0.2	0.1	0.3	-0.2	-1.4	-2	-2	-2
Retail Sales Less Autos, %	11/14	-0.2	-0.4	-0.4	0	0.0	-2	-5	-2
Initial Jobless Claims, 1000s	11/9	318	308	324	-16	-1.2	1	2	0
Trade Balance, \$billions	11/9	-66.0	-64.3	-65.7	1.4	0.5	1	2	0
Change in Nonfarm Payrolls, 1000s	11/3	123	92	105	-13	-0.2	0	9	2
Initial Jobless Claims, 1000s	11/2	310	327	311	16	1.2	0	0	0
ISM Manufacturing, index level	11/1	53.0	51.2	52.2	-1	-0.5	0	-3	0
GDP, %	10/27	2.0	1.6	1.6	0	0.0	0	-4	0
Initial Jobless Claims, 1000s	10/26	307	308	307	1	0.1	0	-2	0

Source: Bloomberg and FRBNY calculations

Note: Market expectations are from the forward price from the most recent economic derivatives auction, which concludes 30-60 minutes before the release. Surprise in standard deviations is calculated using the at-the-money implied volatility from the auction. Yield changes are for the interval from 5 minutes before to 30 minutes after the release.

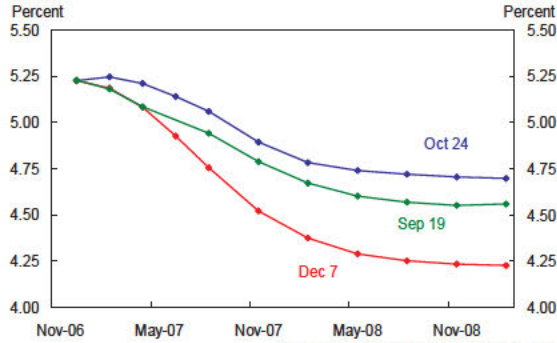
* Data not available

**Yield changes for releases prior to 11/9 were calculated using the December Fed Funds contract.

B. Financial Markets

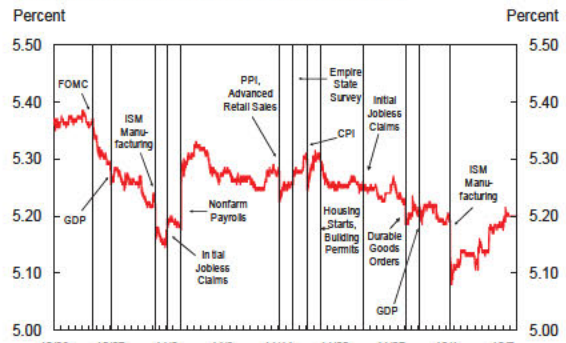
Exhibit B-4: Policy Expectations

Expected Fed Funds



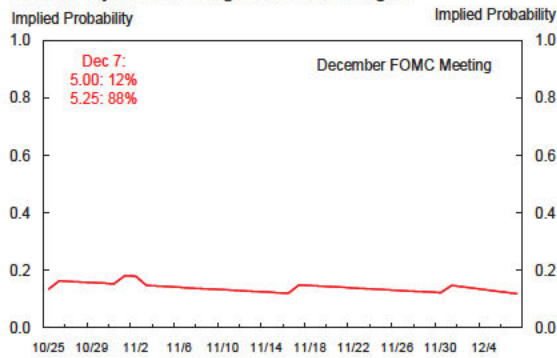
Source: Federal Reserve Board

Implied March Eurodollar Rate (Intraday)



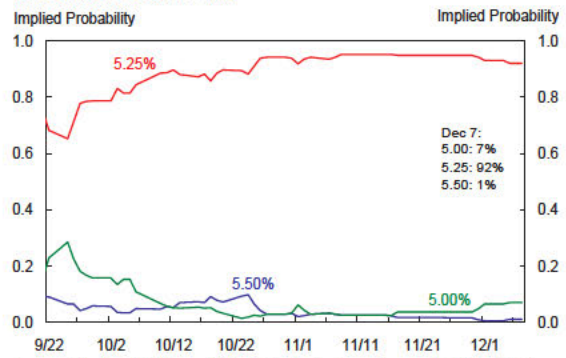
Source: Bloomberg

Probability of 5.00 Target vs. 5.25 Target



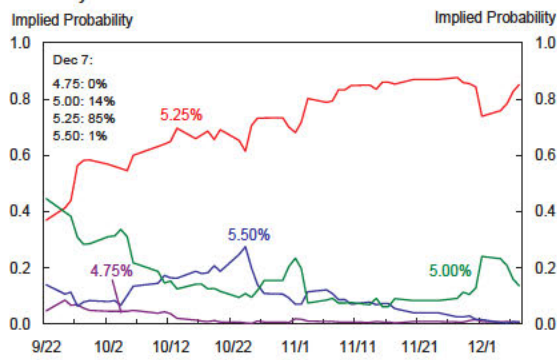
Source: FRBNY calculations

December 2006 FOMC



Source: Cleveland FRB

January 2007 FOMC

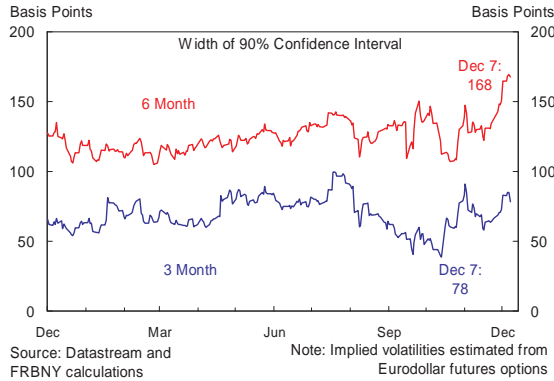


Source: Cleveland FRB

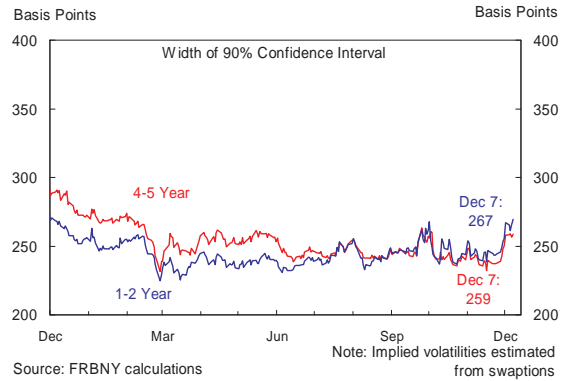
B. Financial Markets

Exhibit B-5: Policy Uncertainty I

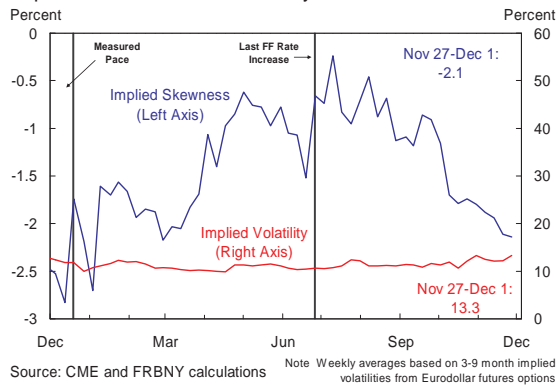
Interest Rate Volatility: Short-Term



Interest-Rate Volatility: Long-Term



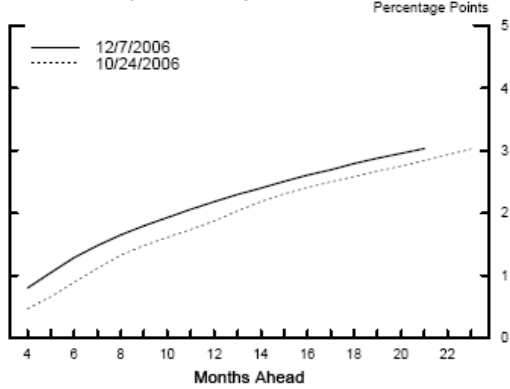
Implied Skewness and Volatility



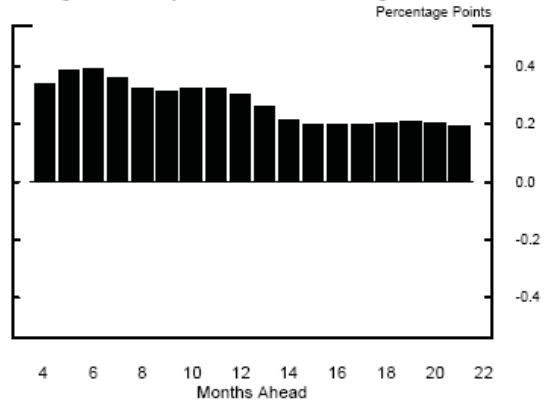
B. Financial Markets

Exhibit B-6: Policy Uncertainty II

Eurodollar Implied Volatility Term Structure*

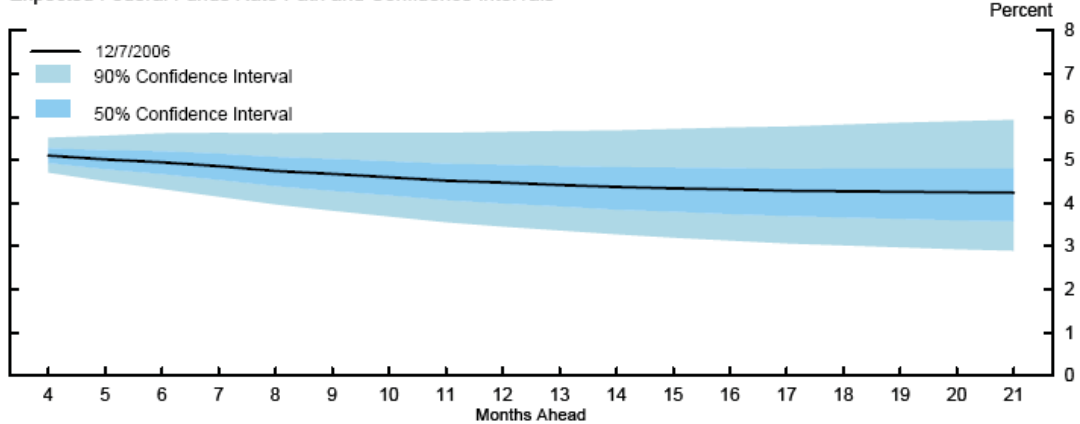


Change Since Day Before FOMC Meeting

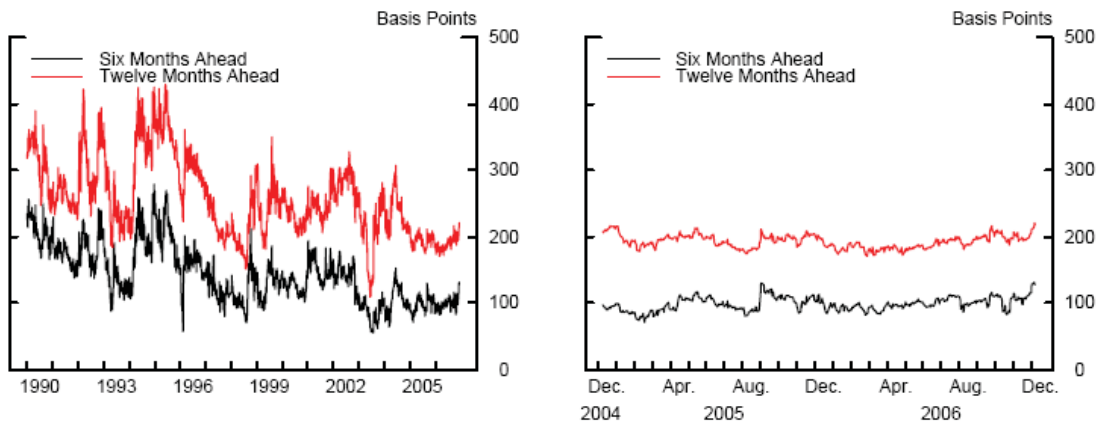


*Width of a 90 percent confidence interval computed from the term structures for the expected federal funds rate and implied volatility.

Expected Federal Funds Rate Path and Confidence Intervals



Eurodollar Implied Volatility at Selected Maturities*

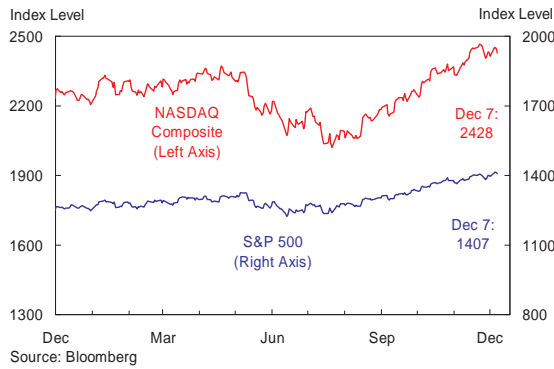


*Width of a 90 percent confidence interval computed from the term structures for the expected federal funds rate and implied volatility.

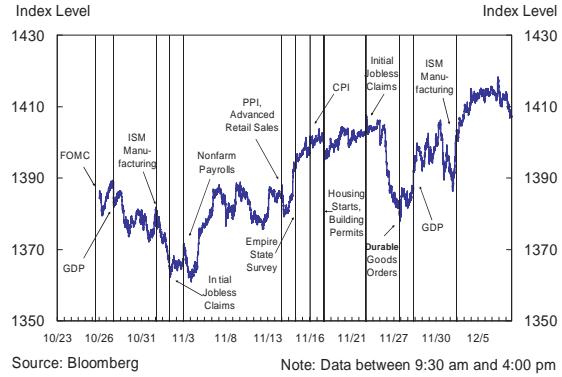
B. Financial Markets

Exhibit B-7: Equity Markets

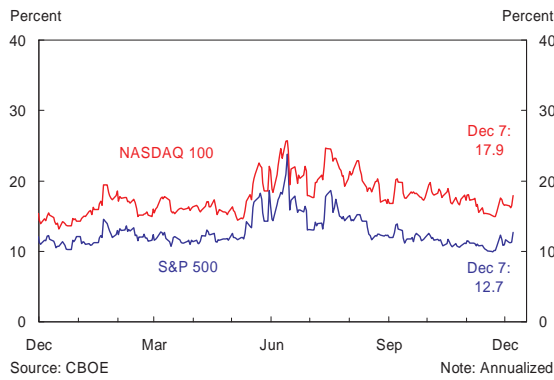
Performance



S&P 500 (Intraday)



Implied Volatility: 1 Month



Implied Volatility: 12 Months

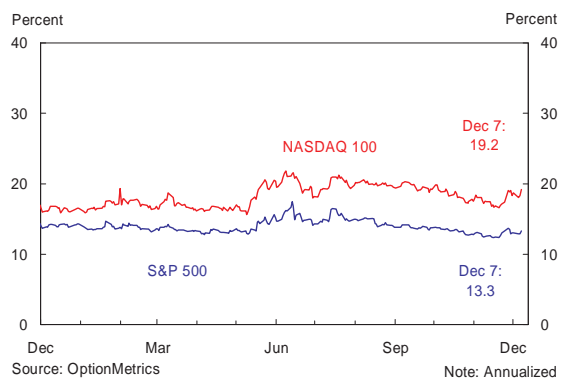
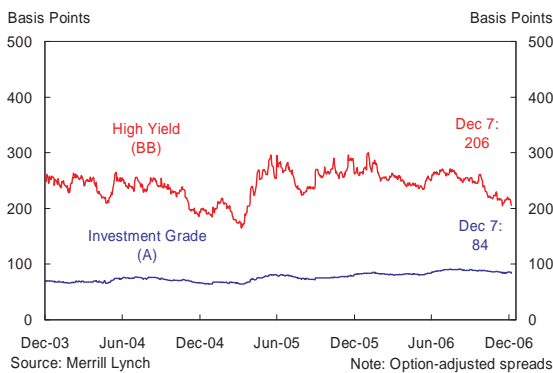
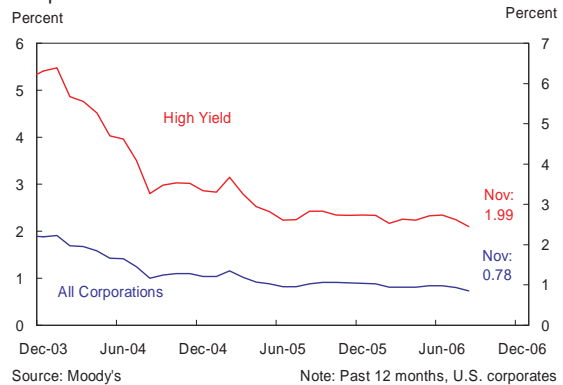


Exhibit B-8: Corporate Credit Risk

Corporate Credit Spreads



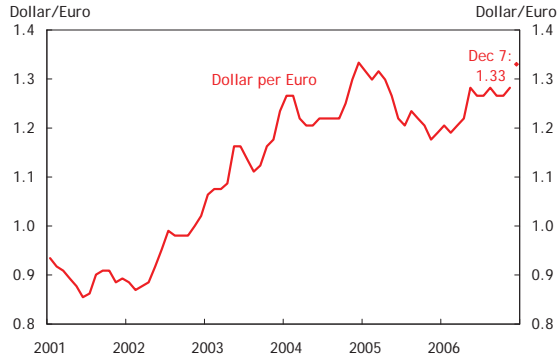
Corporate Bond Default Rates



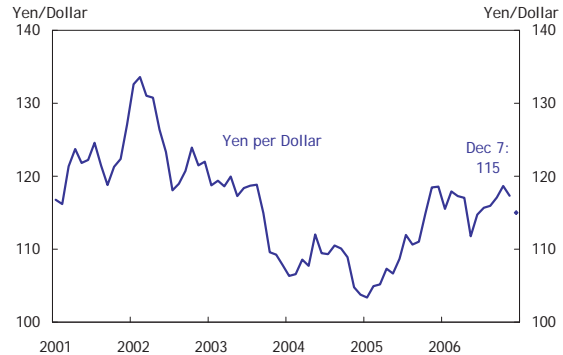
B. Financial Markets

Exhibit B-9: Exchange Rates, Foreign Equity, and Bond Spreads

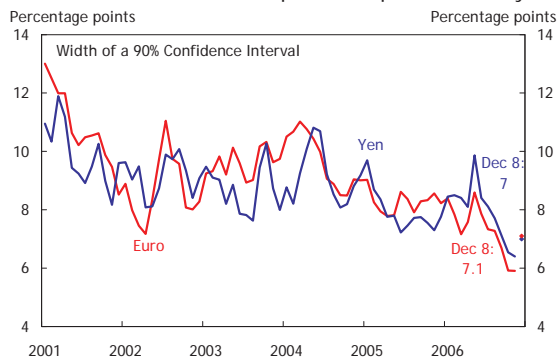
Euro-Dollar Exchange Rates



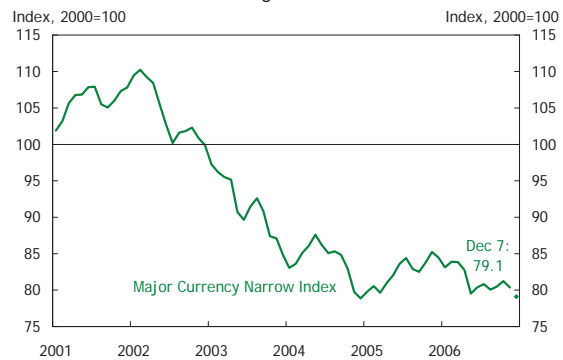
Yen-Dollar Exchange Rate



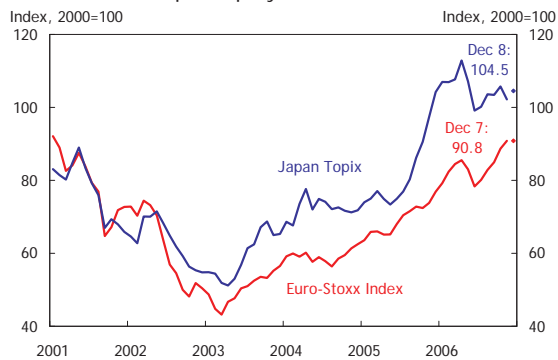
Euro and Yen One-Month Implied FX Option Volatility



Nominal Effective Exchange Rate



Euro Area and Japan Equity Indices



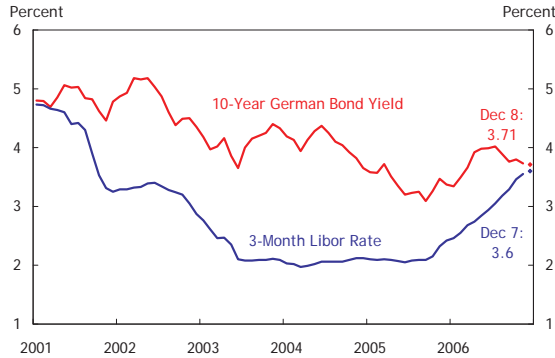
J.P. Morgan EMBI+ Sovereign Spread



B. Financial Markets

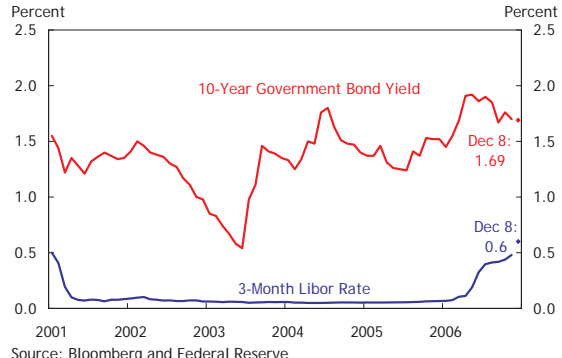
Exhibit B-10: Foreign Interest Rates

Euro Area Short-Term and Long-Term Interest Rates



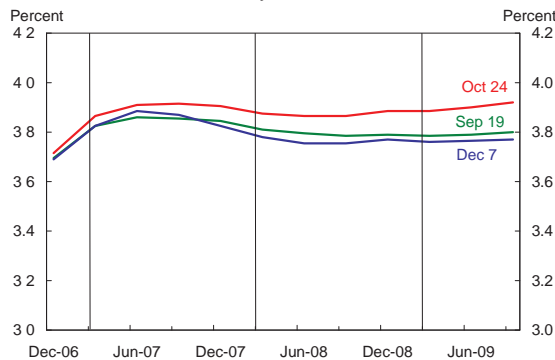
Source: BIS and Federal Reserve Board Note: Data are monthly averages.

Japan Short-Term and Long-Term Interest Rates



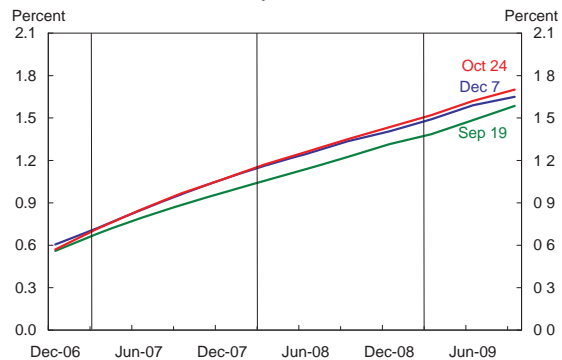
Source: Bloomberg and Federal Reserve Board Note: Data are monthly averages.

Three-Month Eurocurrency Futures Rates: Euro



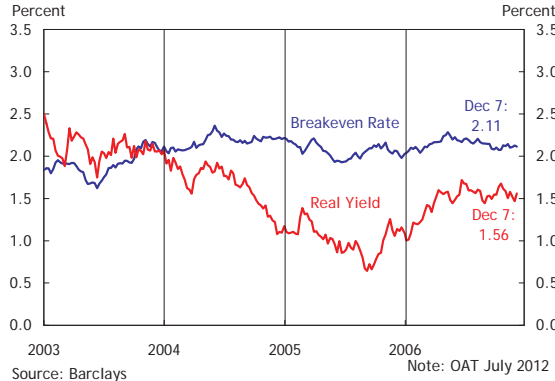
Source: Datastream

Three-Month Eurocurrency Futures Rates: Yen



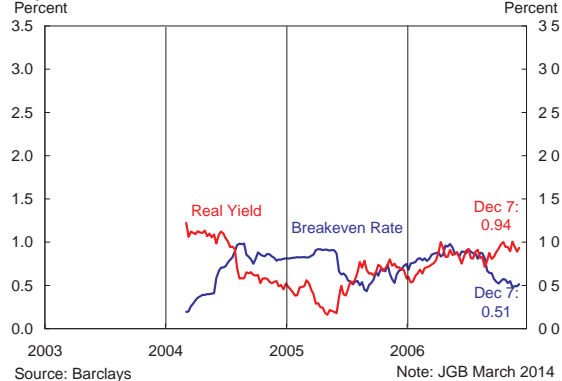
Source: Datastream

Euro Area



Source: Barclays

Japan

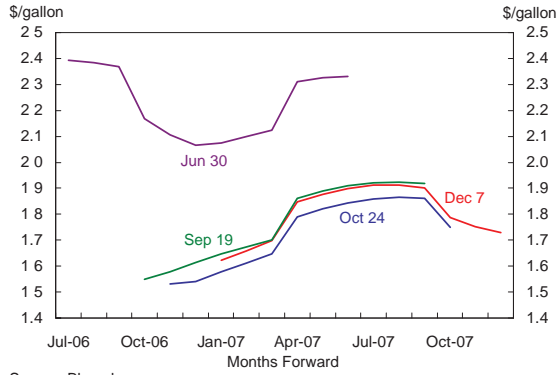


Source: Barclays

B. Financial Markets

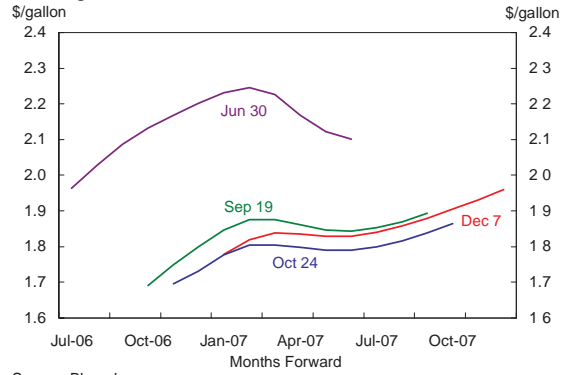
Exhibit B-11: Energy Futures

Gasoline Futures



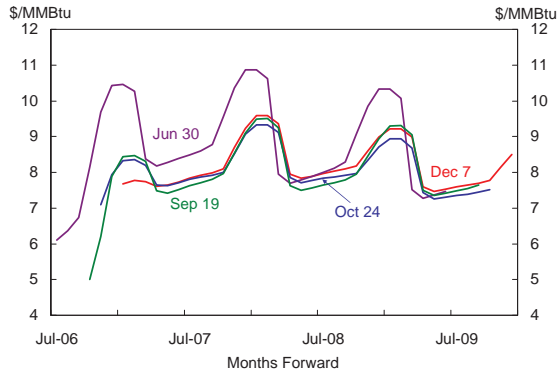
Source: Bloomberg

Heating Oil Futures



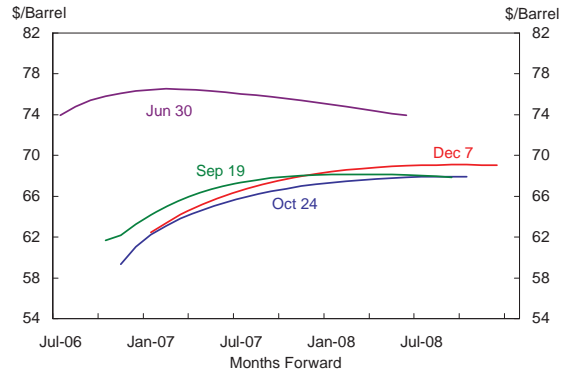
Source: Bloomberg

Natural Gas Futures



Source: Bloomberg

Crude Oil Futures



Source: Bloomberg

C. FRBNY Forecast Distributions

Background

The FRBNY forecast distributions are a generalization of techniques used at the Bank of England and other central banks to show future uncertainties and the balance of risks. The generalization allows for a dynamic balance of risks that is jointly assessed over inflation and output. There are two classes of shocks to current central projections that are of interest to central banks: supply shocks, which move inflation and output in opposite directions, and demand shocks, which move inflation and output in the same direction. We use a dynamic assessment of the risks that allows the probability of a deviation to build over time. We center long-run behavior at the implicit inflation target and potential growth rate and assume that, after a deviation into an alternative scenario, the economy eventually returns to this average long-run behavior. Although this is not a substitute for a dynamic model with an explicit transmission mechanism for monetary policy, it can have good properties in mimicking the behavior of an economy where the central bank has sufficient credibility to achieve its long-run inflation target while pursuing short-run stabilization policy.

Exhibit C-1: Risks

This exhibit shows the “balance of risks” for the individual alternative scenarios listed in Section 3 (“FRBNY Alternative Scenarios and Risks”) and the central scenario contained in the Bank’s forecast. Two measures of the balance of risks are shown. One is the probability of being in a particular scenario at a specific date. These scenarios are mutually exclusive, so the probabilities add up to one at any specific date. However, please note that two nonspecific scenarios representing general upside and downside risks to the FRBNY forecast are not pictured; thus, the values included the exhibit do not add up to exactly one.

For most scenarios, the second measure is the probability of being in a particular scenario at any time through 2009. For the central scenario, however, we show the probability of not deviating from this scenario at any time through 2009. Hence, one minus this latter probability is the likelihood of deviating from the central scenario at some point over the

forecast horizon, which is equal to the sum of the probabilities of the other scenarios, including the general upside and downside scenarios not pictured.

Exhibit C-2 & C-3: Alternative Scenarios

These exhibits take the balance of risks for each scenario and show their implications for GDP growth and core PCE inflation. They plot the expected path of four-quarter changes in the core PCE deflator [Exhibit C-2] and real GDP [Exhibit C-3] under the central scenario and the alternative scenarios. A path is defined as falling under an alternative scenario if it has at least one quarter in that scenario.

The over-tightening scenario assumes that output growth is substantially slower than the central forecast and inflation is sometimes lower. The overheating scenario assumes that for two quarters the economy grows more quickly than in the central forecast, with both inflation and output higher than in the central forecast. Then, the real economy slows dramatically, but inflation continues to be above the central forecast. For this cycle we have increased the probability that overheating was occurring before 2006Q2.

The productivity boom scenario assumes that inflation is below the forecast, while output growth is above. The productivity slump takes the reverse; inflation is above the forecast, while output growth is below.

Exhibit C-4 & C-5: Fan Charts

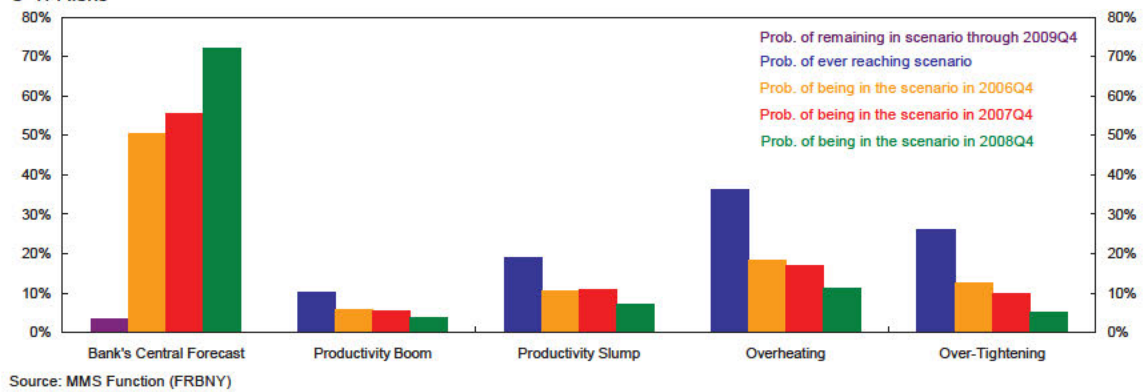
Fan charts are shown for the core PCE deflator [Exhibit C-4] and real GDP growth [Exhibit C-5]. These charts are constructed to represent the overall uncertainty contained in our main scenario and alternative scenarios. They combine the information contained in the previous exhibits with the additional uncertainty that we cannot predict perfectly the path of the economy, even if we knew which scenario were true. The amount of total uncertainty in the forecast distributions is calibrated to imply fundamental interest rate volatility lower than that given by the implied Eurodollar forward volatility curve averaged across possible policy rules from a market perspective (see the text for Exhibit D-4). In addition, the expected value for each of the two forecast distributions and the two central bank scenarios are included in the fan chart. The expected values are

computed as averages over the realizations across all possible scenarios considered in Exhibit C-1. The difference between the expected value profiles and the central bank scenarios is another measure of the balance of risks. If they are equal, the risks are balanced; if the expected value is above the central bank scenario, there is upside risk; if it is below, there is downside risk.

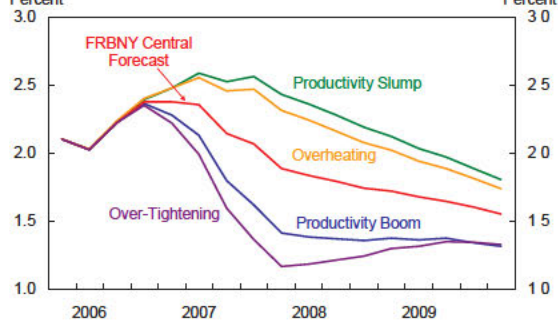
Source: MMS Function, FRBNY

C. FRBNY Forecast Distributions

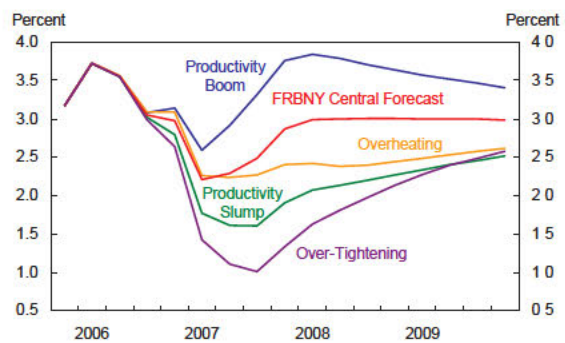
C-1: Risks



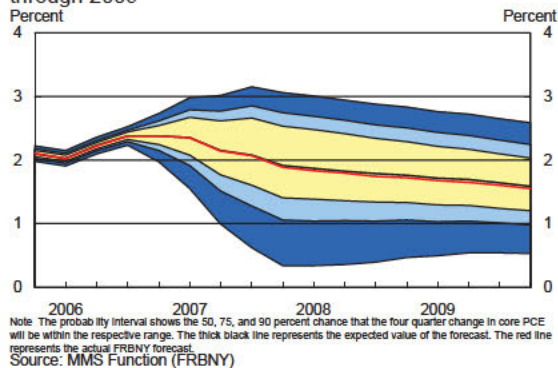
C-2: Alternative Scenarios of Core PCE Inflation through 2009



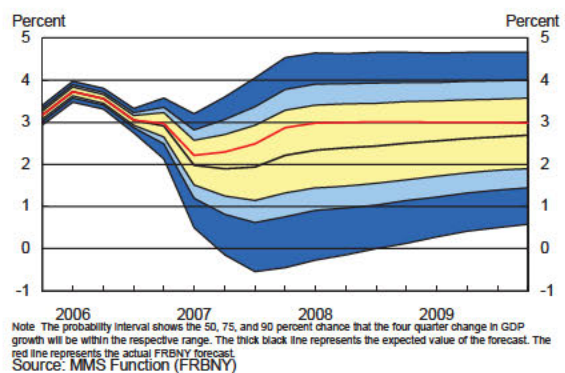
C-3: Alternative Scenarios of GDP Change through 2009



C-4: Four-Quarter Core PCE Inflation Forecast through 2009



C-5: Four-Quarter GDP Growth Forecast through 2009



D. FRBNY Fed Funds Rate Projections

The exhibits in this section are constructed using the baseline specification of the policy rule detailed below, two modifications of the baseline policy rule, the Bank forecast distribution, and information from Fed Funds futures and Eurodollar futures. The policy rules convert the uncertainty over future inflation and output into uncertainty about future values of the Fed Funds rate. This allows us to use information from financial markets to calibrate the type and level of uncertainty.

In all specifications the policy rate responds to deviation of inflation from target and output from potential GDP and incorporates some degree of inertia. We draw the future paths of these deviations from the forecast distribution of inflation and output. (We specify an implicit inflation target of 1.5% and assume potential output growth is 3%.)

Policy Rule – Baseline Specification:

$$i_t = \rho i_{t-1} + (1 - \rho) [i^* + \varphi_\pi (\pi_t - \pi^*) + \varphi_x x_t]$$

$$\rho = 0.8$$

$$i_{2006Q2} = 4.9$$

$$i^* = 4.125$$

$$\pi^* = 1.5$$

$$\varphi_\pi = 1.5$$

$$\varphi_x = 0.5$$

$$\pi_t : \text{Core PCE 4 Q average}$$

$$x_t : \text{Output Gap using 3\% potential growth rate}$$

Source: MMS function, FRBNY

For the next quarter we amend the prescription of the baseline policy rule to capture some of the discreteness in the movement of the FFR. We translate the prescription of the baseline rule using the following table:

Baseline Policy Rule Prescription	Average FFR in 2006Q4
$r^* < 3.00$	r^*
$3.00 < r^* < 3.75$	4.00
$3.75 < r^* < 4.00$	4.50
$4.00 < r^* < 4.25$ $4.25 < r^* < 4.50$ $4.50 < r^* < 4.75$	4.75
$4.75 < r^* < 5.00$	5.00
$5.00 < r^* < 5.25$ $5.25 < r^* < 5.50$	5.25
$5.50 < r^* < 5.75$ $5.75 < r^* < 6.00$	5.50
$r^* > 6.00$	r^*

The two modifications of this amended baseline rule that we use this cycle are labeled *Opportunistic Disinflation* and *Dove*. The *Opportunistic Disinflation* rule reacts more strongly to inflation data above the upper bound of the implicit target range (taken to be 2%) than the baseline policy rule. It lowers the policy rate more slowly than the baseline prescription if inflation is slowing but still above the target range. For the *Opportunistic Disinflation* rule, we follow the prescription of the baseline policy rule if the four-quarter average of core PCE inflation in the last quarter is below 2%. If the four-quarter average through the last quarter is above 2%, then we compare this value to the four-quarter average through the current quarter. If the value for this quarter is higher than the value for the last quarter, then the prescription of the baseline rule is followed. However, if the four-quarter average declines when compared to its value in the previous quarter, then last quarter's value is substituted for the current quarter value in the baseline policy rule. This rule is followed for the horizon of the forecast.

The *Dove* policy rule amends the baseline rule by reacting much more strongly to deviations of output below potential. If the output gap is negative then the response to deviations of inflation from target and output below potential are equal and set to 1. Thus, the rule does not satisfy the Taylor Principle when output falls below potential. This rule is followed for the horizon of the forecast.

Exhibit D-1: Nominal Fed Funds Rate Under Different Policy Rules

Exhibit D-1 shows the expected path of the FFR under the three rules described, together with the most recent implied market path from Exhibit B-4. The paths under each rule are constructed by first evaluating the policy rule at each of the draws from the forecast distribution of output and inflation and then averaging them to produce an expected path under that particular rule.

Exhibit D-2 & D-3: Nominal and Real Fed Funds Rate Under Baseline in Alternative Scenarios

In these exhibits, we focus on the baseline policy rule and evaluate it under the Bank's central projection, as well as under the alternative scenarios of a productivity slowdown, a productivity boom, overheating and over-tightening. Each path is obtained by evaluating the baseline policy rule at each of the draws from a forecast distribution of output and inflation under that particular scenario and averaging them to produce an expected path. The baseline rule is also evaluated using the Bank's central forecast. Exhibit D-2 presents the implications for the nominal FFR. Exhibit D-3 presents the implications for the average ex-post real rate. This real rate is calculated by subtracting the four-quarter lagged change of core PCE inflation from the path of the nominal rate.

Exhibit D-4: Baseline Policy Rule with Different Inflation Targets

This exhibit shows the effect of different inflation targets and gives a measure of how the recent actual path of the FFR has differed from the prescription of our policy rule. This is implemented by running the baseline policy rule with two different inflation targets. First, we use the 1.5% target typically used by the baseline policy rule; then, we calculate the expected nominal rate using a 2.0% target, while also increasing the neutral rate by 50bp. Neither simulation uses the information about the 13 most recent increases in the FFR. Thus, these two policy rule paths are conditioned on the average FFR in 2004Q4 of 1.9%. The market implied path and the average, however, use the actual value of the FFR to date. The implied market path then uses the current FF futures values, while the average takes the mean over the three rules evaluated during this cycle, using weights of 0.60 (*Baseline*), 0.25 (*Dove*) and 0.15 (*Opportunistic Disinflation*).

Exhibit D-5: Comparison between Market Expectations and FRBNY Expectations of the Federal Funds Rate

In this exhibit, we report two metrics for measuring the distance between the market-implied path and the FRBNY implied path in 2007Q4.

1. We take the expected value of each of our policy rules and calculate its corresponding percentile in the market's implied distribution.
2. We take the expected value of the market implied path and calculate its percentile in the distribution for each of our policy rules.

There are many other sources for differences between the two paths. One important consideration is the adjustment for risk in constructing the market path. We use an adjustment from the Board that is constant over time; there is some evidence, however, that the adjustment varies over time. Furthermore, the market faces uncertainty over the policies and targets used by the FOMC. We can attempt to capture this uncertainty, but again, it may vary over time.

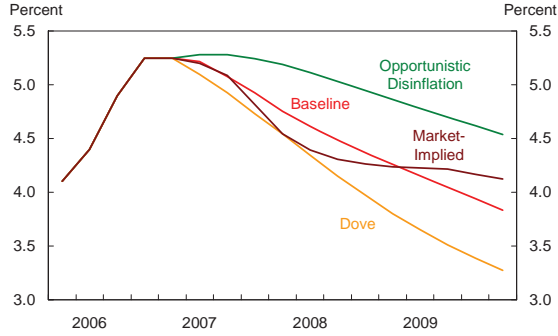
Exhibit D-6: Federal Funds Rate Distributions

In this exhibit we examine the distribution of the FFR under the three different policy rules through the fourth quarter of 2007. We also include the market distribution by assuming it has a normal distribution centered at the market path from Exhibit B-5 with a standard deviation derived from the data in Exhibit B-6. The distribution is represented by a box plot to allow for a more direct comparison of the implications of different policy rules. The box represents the 50% probability interval (25th to 75th percentile), the line in the box the median, and the tails the 90% probability interval (5th to 95th percentile).

Source: MMS Function, FRBNY

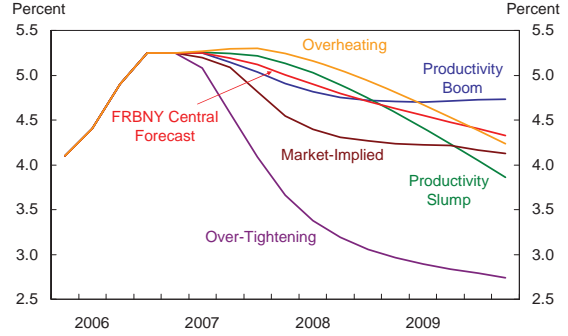
D. FRBNY Fed Funds Rate Projections

D-1: Nominal FFR under Different Policy Rules



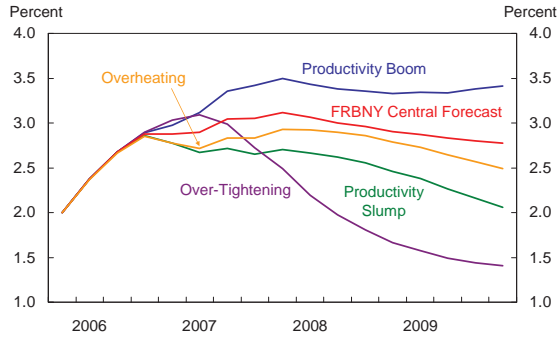
Source: MMS Function (FRBNY)

D-2: Nominal FFR under "Baseline" in Alternative Scenarios



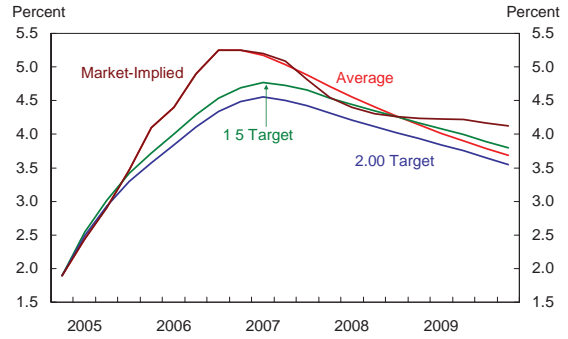
Source: MMS Function (FRBNY)

D-3: Real FFR under "Baseline" in Alternative Scenarios



Source: MMS Function (FRBNY)

D-4: Baseline Policy Rule with Different Inflation Targets



Source: MMS Function (FRBNY)

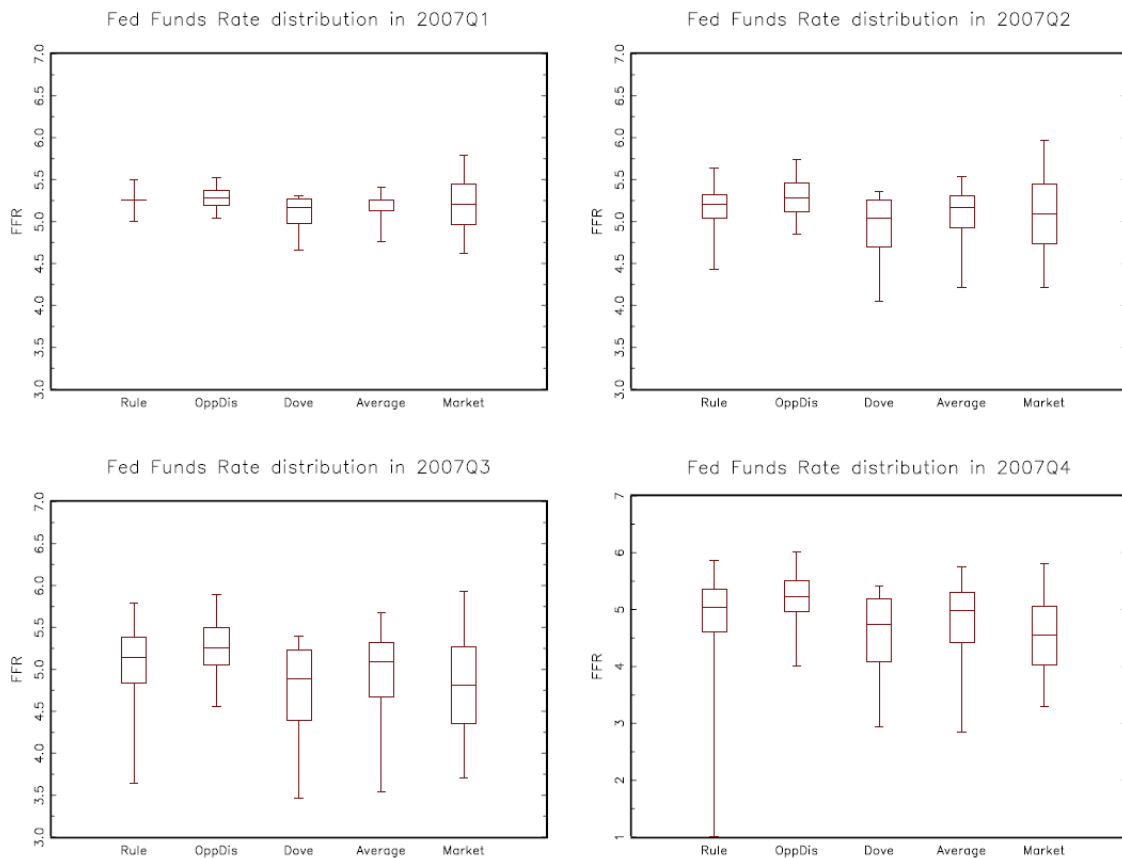
D. FRBNY Fed Funds Rate Projections

Exhibit D-5: Comparison between Market Expectations and FRBNY Expectations of the Federal Funds Rate

	Percentile of FRBNY Expectation in Market Distribution	Percentile of Market Expectation in FRBNY Distribution
<i>Baseline</i>	58 (56)	25 (40)
<i>Dove</i>	47 (31)	44 (57)
<i>Opportunistic Disinflation</i>	78 (71)	9 (21)
<i>Average</i>	56 (52)	31 (46)

Note: "Average" weights baseline at .40, dove at .50, and opportunistic disinflation at .10.

Exhibit D-6: Fed Funds Rate Distribution



E. Regional Charts

Exhibit E-1. FRBNY's Index of Coincident Economic Indicators

The chart in this exhibit shows our monthly coincident indices for New York, New Jersey, and New York City since 1999. The indices are a composite of four economic indicators: payroll employment, unemployment rate, average weekly hours in manufacturing, and real wage & salary earnings.

More details on the methodology and construction of these indexes can be found at http://www.ny.frb.org/research/regional_economy/coincident_summary.html

Source: MaRS Function, FRBNY

Exhibit E-2. FRBNY's Index of Leading Economic Indicators

This chart shows the growth in our monthly leading indices for New York, New Jersey, and New York City since 1999. The growth in the index for a given month represents a forecast of the growth in the coincident index nine months ahead. The components used in these three indices differ slightly from index to index but include: housing permits, stock prices, the national leading index, and the lagged coincident index.

[NOTE: This index is not released publicly.]

More details on the methodology and construction of these indexes can be found at: http://www.ny.frb.org/research/regional_economy/coincident_summary.html

Source: MaRS Function, FRBNY

Exhibit E-3. Private-Sector Job Growth: U.S. and the Region

This chart shows the 12-month growth rate of private-sector employment for New York-New Jersey (combined), New York City, and the U.S. (bars) from 1996 to present.

Source: Bureau of Labor Statistics

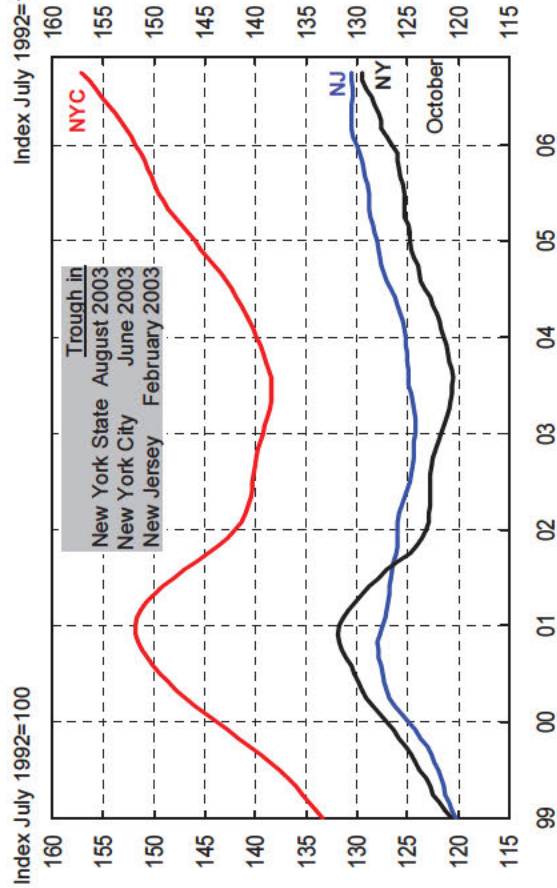
Exhibit E-4. OFHEO House Price Index

This chart shows 4-quarter percent change in OFHEO's (Office of Federal Housing Enterprise Oversight) repeat-sales house price indexes for New York, New Jersey, and the U.S. from 1984 to present; it also shows the latest data point for the Rochester and Buffalo metro areas.

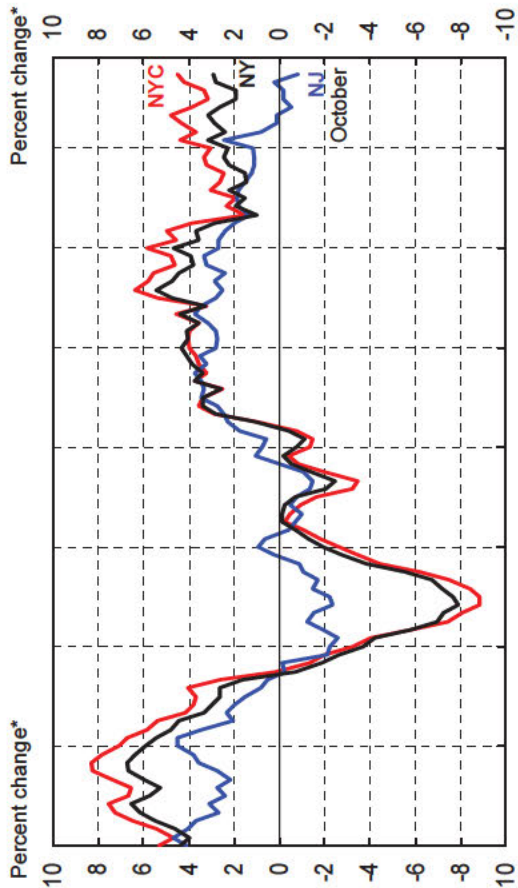
Source: Office of Federal Housing Enterprise Oversight

E. Regional Charts

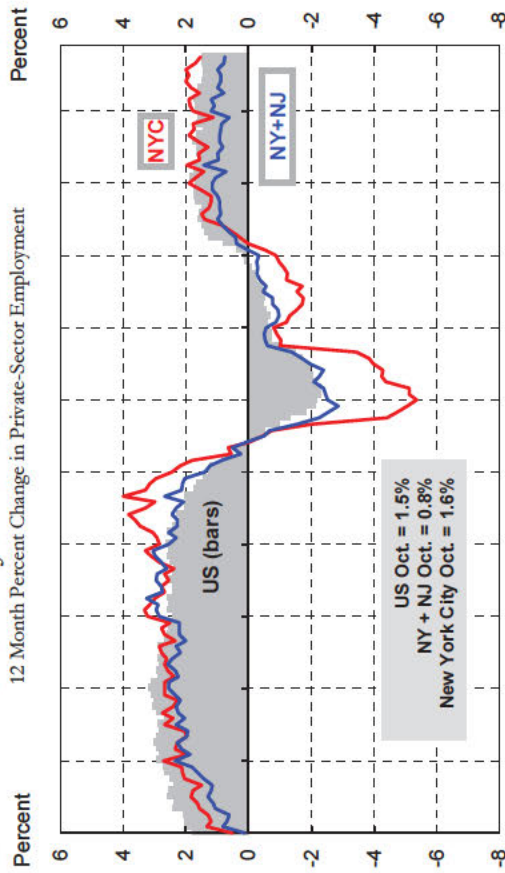
E1: INDEX OF COINCIDENT ECONOMIC INDICATORS



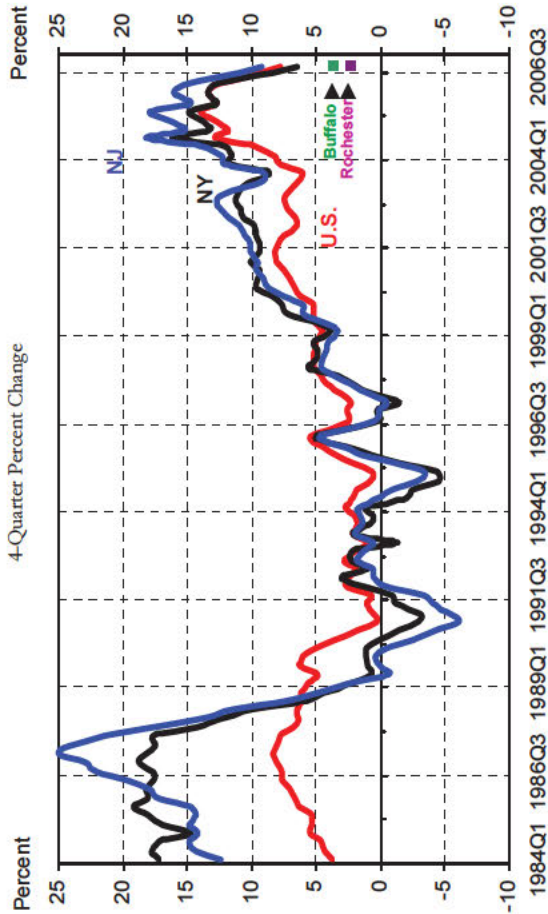
E2: INDEX OF LEADING ECONOMIC INDICATORS



E3: PRIVATE-SECTOR JOB GROWTH: U.S. AND THE REGION



E4: OFHEO HOUSE PRICE CHANGES



*Percent change represents the forecasted growth in the Coincident Index, over the next 9 months, at an annual rate.