

FRBNY Blackbook

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FRBNY BLACKBOOK

March 2006

CONTENTS

1. Overview	3
2. Recent Developments	4
i. U.S.	4
ii. Global	8
iii. Trade	10
iv. Financial	11
a. Domestic markets	11
b. Monetary Policy and Global Bond Markets	12
v. Second District	15
3. Outlook	17
i. FRBNY's Central Forecast	17
ii. Comparison with Greenbook Forecasts	18
iii. Alternative Scenarios and Risks	22
4. Policy Alternatives	27
Special Topic I: The Case for Signaling A Pause	31

EXHIBITS

A. Forecast Details	33
B. Financial Markets	45
C. FRBNY Forecast Distributions	56
D. FRBNY Fed Funds Rate Projections	61
E. Regional Charts	67

1. Overview

Our outlook has real GDP growth slightly above its potential rate in 2006 and at its potential rate in 2007. Core PCE inflation is expected to be around 2% over the same period. We have raised the path of the FFR target implicit in our forecast so that it is 4.75% in March and 5% in May. This is roughly equivalent to the path currently priced into financial markets. Our view is that this path should change little as a result of the expected decision and statement at the March meeting.

There is little difference between our central forecast and the Board's Greenbook forecast, and our assessment of the appropriate path for policy would be unchanged if we were to base it on the Greenbook forecast. While there are slight differences in the profiles of real GDP, compensation, and unit labor cost growth over the forecast horizon, the profiles for core PCE inflation correspond quite closely. We expect employment to grow near its trend with the unemployment rate leveling off at 4.7%, with the labor force participation rate staying in the neighborhood of 66%. The Greenbook has a slightly higher unemployment rate and a lower labor force participation rate.

Though our central forecast has core inflation remaining within the range viewed as consistent with long-term price stability, we see the preponderance of risks as residing on the upside. Furthermore, we believe these risks embed the possibility that further rises in inflation at or near the top of the implicit range are more costly than similar increases near the implicit target. Under this assessment of the risks, a policymaker with a more hawkish view of the risks would follow a path similar to our recommendation. We see the risks for near-term real growth as being roughly balanced. Changes in financial conditions have done little to resolve our uncertainty about the underlying causes for the

behavior of forward interest rates over this tightening cycle. In addition, our concern over the sustainability of both the federal budget and current account deficits is unresolved.

2. Recent Developments

U.S.

Summary. Measures of underlying inflation remain elevated relative to the implicit 1½% target, thus indicating continued upside risk to that target. After rising only 1.6% (annual rate) in 2005Q4, recent real activity indicators point to a significant rebound in the current quarter. This is consistent with our expectation that the 2005Q4 slowdown will be temporary and indicates some decrease in the uncertainty about our real activity outlook. Consumption indicators for Q1 also suggest a rebound in consumer spending for the quarter. In contrast, housing market indicators point to a moderate slowdown in the market. Most business spending and production indicators continue to show vigor. Payroll employment growth has been robust in the first two months of the year, and growth in hours remained around recent trends. Wage growth continued to pick up moderately. Consumer and business survey measures generally remained at levels consistent with solid growth; however, the expectations components of many of these indices have been somewhat less buoyant.

Inflation. Core inflation measures still remain somewhat elevated compared to desired levels [see exhibit A-6]. The monthly change in the core PCE deflator increased from 0.1% in December to 0.2% in January. On a 12-month change basis, the core PCE deflator was up 1.8% in January, down from 1.9% over the preceding three months and 2.0% in September and August. Nevertheless, the 12-month change still remains above the assumed implicit target and toward the upper end of the accepted range of inflation consistent with price stability. The monthly change in the core CPI declined from 0.2% in January to 0.15% in February. On a 12-month change basis, the core CPI increased 2.1%

in both January and February. This marks a pause in the 12-month percentage changes that had been edging up in recent months. On a 3-month change basis, core goods inflation and core services inflation continue to hover around zero and 3% (annual rate) respectively. The core PPI increased 0.3% in February after a 0.4% rise in January. The 12-month change increased from 1.5% in January to 1.7% in February.

With the fluctuations in energy prices, inflation rates have been rather volatile, but still remain elevated. The 12-month change in the overall PCE deflator increased from 2.8% in December to 3.1% in January. On a quarterly basis, the overall PCE deflator rose 2.7% (annual rate) in Q4. For the CPI, the 12-month change declined from 4.0% in January to 3.6% in February. Measures of underlying inflation derived from time series models indicate inflation pressures remain high relative to the implicit target of the FOMC and the signals from the core CPI and the core PCE deflator. Moreover, the gap that opened in early 2003 between the measures of underlying inflation and core CPI inflation has not narrowed. Our underlying inflation gauge (UIG) has risen very slightly at longer (2-3 and 3-5 year) horizons [see Exhibit A-7]. Alternative measures of “core” inflation have remained flat recently [see Exhibit A-8], but remain close to the upper end of the acceptable range. Long-term inflation expectations from TIPS generally have declined slightly and remain contained, while household survey expectations were unchanged in February. Given concerns about energy prices, the steady behavior of inflation expectations offers encouraging news.

Real activity. Real GDP growth in 2005Q4 was revised modestly upward to 1.6% (annual rate), a slow growth rate that we expect to be temporary. The data we have received during the inter-meeting period indicates that there has been a substantive rebound in real activity in the current quarter. Consequently, the recent indicators are consistent with little change in our medium-term real activity outlook.

After rising only 1.2% (annual rate) in 2005Q4, real personal consumption expenditures (PCE) appear to be rising much more strongly—over 5% (annual rate)—in 2006Q1. Real PCE increased a robust 0.7% in December followed by a 0.4% gain in January. The

latter gain was moderated by a sharp drop in utilities consumption resulting from the very mild January weather. The January level is 1.2% above the 2005Q4 level. Auto sales were strong in January, but then fell back in February. Still, the average of these two months was about 17 million units (annual rate), well above the 15.85 million average of 2005Q4. Retail sales excluding autos also surged in January (+2.6%) and fell back in February (-0.4%): the average of these two months was 2.3% above the 2005Q4 average.

Most housing market indicators continued to suggest that the market has slowed from the frenzied pace of the summer and autumn of 2005. Even so, housing starts and completions in January and February have been above the pace that prevailed in 2005, which we suspect is a result of the mild weather during the period. Consequently, we expect that starts and completions will slow in the coming months. Single-family building permits have declined modestly in recent months, which is consistent with some moderation in the market. Existing home sales on average declined somewhat in January and February, although mild winter weather appeared to support them. New home sales have dropped more sharply during this period. The inventories-sales ratio for new homes has risen sharply and is now at 6.3 months, the highest it has been since January 1996. Despite the signs of moderation, home prices remain strong through 2005: the 4-quarter change of the OFHEO index was almost 13%, and the 12-month change of the median existing home sales price in February remained above 10%. Mortgage purchase applications are at levels that suggest some further moderation in the market.

There were upward revisions to business fixed investment in 2005Q4 from the previously reported weak numbers; nevertheless, it still was rather soft in that quarter. Monthly spending indicators suggest that investment should be somewhat more vigorous in 2006Q1. Shipments of nondefense capital goods excluding aircraft were flat in January and fell in February; nonetheless, because of a strong rise in December, their average level over the first two months of the year was more than 2% above the 2005Q4 average. The level of orders for these goods indicates little change in near-term outlook. Nonresidential construction spending rose in January, maintaining the moderate growth of recent months.

Business inventories increased moderately in January, and the inventories-sales ratio hit a new historic low for the month. With business expenditures and final demand maintained recently, manufacturing production has been robust so far in 2006, with the January-February average 1.3% above (5.5% annual rate) the 2005Q4 average. The capacity utilization rate in manufacturing exceeded 80% in February, the third consecutive month it has done so. Production growth in the IT sector continued to be robust, which is consistent with the growth in our Tech Pulse index.

Labor market. The recent data indicate a somewhat firmer labor market. Payroll growth, both total and private, averaged over 200,000 per month in January and February. Aggregate hours in those months averaged about 1.6% (annual rate) above the 2005Q4 average, similar to the growth rate of hours over recent months. After dropping in January, the unemployment rate rose slightly in February to 4.8%. The labor force participation rate also rose slightly in February to 66.1%, about where it has been over the past two years. The employment-population ratio was 62.9% in February, 0.5 percentage point above the ratio of a year ago. Related to this, employment in the household survey—measured on a comparable basis to that of the establishment survey—has risen more over the past year than has payroll employment. Initial claims for unemployment insurance recently have been above their levels in January, but their current level indicates little change in labor market conditions over recent weeks.

Wage growth continued to firm. The 12-month change in average hourly earnings was 3.5% in February, the highest it has been since 2001. Other measures of labor compensation have not shown such acceleration. The four-quarter change in the ECI through 2005Q4 was 3.1%, near its lowest level since late 1999. (The ECI will be revised extensively when the Q1 data is released in late April, including updating occupational weights. This potentially could affect the history of these data.) The four-quarter change in compensation per hour in 2005Q4 was 3.8%, well below the equivalent changes earlier in the year. One possible explanation for this is a shift in compensation from benefits to wages. (Another possibility is that these data will be revised

considerably as ES-202 data is incorporated.) With slower compensation growth, the four-quarter growth in unit labor costs was 1.3%, below the equivalent changes of the past year.

Surveys. Consumer surveys show that confidence remained steady at reasonably good levels during January and February as well as into early March. Business surveys suggest that the manufacturing sector remains on solid footing. The ISM manufacturing and non-manufacturing indices, the Chicago ISM index, the Philadelphia Fed index, and the Empire State index indicate continued growth, with the Empire State index showing particular strength. The prices paid index associated with each of the surveys generally declined some, indicating a moderate abatement in price pressures.

There is, however, a noticeable disconnect between how consumers and businesses view the present versus the future. While components relating to present conditions have been quite buoyant, the components relating to future conditions (consumer expectations and the 6-month-ahead index in the Philadelphia Fed survey) have been less optimistic. The assessment of present conditions likely reflects the favorable labor market and level of current activity, while the assessment of future conditions likely reflects concerns about the upturn in energy prices as well as federal budget and current account deficits.

Global

Global GDP is expected to grow 2.9 percent (Q4/Q4) in 2006. The forecast has been raised from that in the previous Blackbook (2.6 percent) largely because of a re-evaluation of Japanese growth this year. This more favorable global outlook still represents a slowdown from last year's growth of 3.4 percent, as Japan is expected to decelerate from an unsustainably fast pace in 2005.

Industrial Countries. The data for industrial countries have been encouragingly strong at the start of 2006. The euro area economy is doing well and the forecast is for 2¼ percent growth (annual rate) in 2006Q1. Industrial production and orders (excluding aircraft)

were both robust in January. The index of industrial confidence continued its improvement through February, putting it notably above the previous peak of mid-2003. The 12-month change in consumer prices excluding energy and unprocessed food was only 1.3 percent in February. Real GDP growth in the euro area is projected to do well in the first half of the year and then slow gradually to just below 2.0 percent in 2007.

Japanese GDP grew much faster in 2005Q4 than had been forecasted; as a result, growth for the year was 4.3 percent (Q4/Q4), Japan's best performance since the early 1990s. Domestic demand contributed 3.5 percentage points to growth in 2005, with strength in both consumption and investment spending. Early indicators for Q1, such as industrial production and machinery shipments, point to a continuing expansion, albeit at a more moderate pace. In light of the strong Q4 data, the forecast has significantly faster growth in 2006 than in the previous Blackbook. Nevertheless, growth is expected to slow in 2006 from last year's unsustainable pace. Deflation in Japan, as measured by the CPI, appears to be over. The consumer price index increased 0.5 percent over year-ago levels in January, the third consecutive month with positive inflation. Inflation is forecast to remain near this pace through 2006.

The Canadian economy did well in 2005, with GDP up 2.9 percent (Q4/Q4). High commodity prices are expected to continue to support investment spending and the rest of the economy in 2006. The modest recovery of U.K. GDP growth in 2005Q4 seems to have failed to generate much momentum in Q1, with signs that private consumption is faltering again.

Emerging Economies. The limited data point to continued solid growth in Emerging Asia. The forecasts for 2006 remain essentially unchanged, with growth expected to be near its potential rate across the region. In China, data for January and February were almost uniformly solid, although Chinese New Year effects make them hard to read. For these two months, year-over-year changes in retail sales and industrial production came in at 12.5 percent and 16.2 percent respectively, close to their recent trends. M2 and loan growth also posted solid gains of 17.6 and 14.0 percent. The trade surplus in January and

February totaled \$11.9 billion, a bit lower than the forecast. Going forward, the new Five Year Plan, approved earlier this month, may boost growth due to government efforts to spur the development of non-tradable sectors. The 2006 forecast for the NIEs remains unchanged at 4.3 percent (Q4/Q4), with domestic demand expected to continue the firming trend of the past few months and for export growth to moderate from its recent elevated pace. The ASEAN region is projected to moderate slightly in 2006 as export growth moderates some while domestic demand strengthens.

In Latin America, Mexico's growth faltered in 2005Q4 due to drought and hurricane-related declines in agricultural output and a slowing of consumer demand from its heady pace in 2005Q3. However, 2006 appears to have gotten off to a strong start: data for the labor market, retail sales and consumer credit have been robust and there has been a dissipation of the drag from agriculture. In Brazil, the snap-back from 2005Q3's sharp contraction has been somewhat slower than anticipated. Nonetheless, industrial production data indicate gradual improvement, while labor and credit data point towards robust consumer demand. Better fundamentals suggest the economy is less vulnerable to election-year volatility. As a result, the outlook now expects faster growth in the second half of 2006. In Argentina, GDP growth turned out to be stronger than expected in 2005Q4. Despite increasing capacity constraints, it seems that expansionary fiscal and monetary policy, along with record consumer confidence, should keep the economy growing at near a 4.5 percent rate (Q4/Q4) in 2006.

Trade

The U.S. trade deficit rose to a record \$68.5 billion in January from \$65.1 billion in December. The deficit was a record in both real and nominal terms.

For the first time in many months, the story about the trade deficit was not just about higher oil prices. Oil imports grew by \$0.8 billion as oil prices rose roughly 10 percent from December. The other more interesting part of the story was the dramatic rise in non-petroleum imports such as computers, autos, and household goods. Export growth

was reassuringly robust, with strength in capital goods such as aircraft and computers. The increase in exports, though, was not sufficient to counteract the rise in imports.

The current account deficit was \$900 billion in 2005Q4 (annual rate) and \$805 billion for the year as a whole. The net income component deteriorated by roughly \$30 billion in 2005 as higher interest rates applied to the ever-increasing stock of U.S. interest-sensitive liabilities offset high returns on U.S. foreign direct investment abroad.

The forecast is for net exports to take 0.5 percentage point off annualized GDP growth in 2006Q1. Over the four quarters of 2006, the assumption of relatively strong U.S. domestic demand growth leads to a forecast that net exports will take roughly 0.5 percentage point off GDP growth.

Financial

Domestic markets

Since the day before the last FOMC meeting (January 30th), short-term and longer term inflation expectations have declined slightly. Over this period, the zero- to two-year carry-adjusted implied inflation rate fell from 2.59% to 2.57%, while the corresponding four- to five-year implied inflation rate declined 8 basis points to 2.50% [Exhibit B-1].

The yield curve currently has a peak at the 6-month maturity with a yield of 4.81%, and is then downward sloping out to the 5-year maturity with a yield of 4.69%. The 3-month yield is at 4.69% and the 10-year yield is at 4.80% [Exhibit B-3]. Over the inter-meeting period, the closely watched 10-year less 3-month spread has declined from 23 basis points to 11 basis points. During the same period, the nominal 4- to 5-year forward rate increased from 4.44% to 4.63%. This change reflects a 19 basis point rise in the real 4- to 5-year forward rate (from 2.04% to 2.23%) combined with a decline in 4- to 5-year inflation compensation.

Based on Fed Funds futures prices, market participants are virtually certain of a 25 basis point increase in the funds rate to 4.75% (99% probability) at the March meeting. This is consistent with the results of the primary dealer survey, which shows a median probability of 96% for a 25 basis point increase in March.

A further rate increase to 5.00% at the May meeting is viewed as likely but not certain, with Fed Funds options assigning a probability of 81% to this event. This is a substantial increase from the 30% probability that was associated with this move at the end of January. There is still a great deal of uncertainty about the policy decision at the June meeting with option-implied probabilities of 21%, 48%, and 28% for rates of 4.75%, 5.00%, and 5.25% respectively. At the end of January, the probability of a move to 5.25% at the June meeting was about 10%.

The expected Fed Funds rate path rises to a peak of 5.01% in November 2006. The funds rate is then expected to decline to 4.69% in May 2008. Since January 30th, the expected rate in November 2006 is up 28 basis points, and the expected rate in May 2008 is up 27 basis points [Exhibit B-4].

Corporate credit spreads over Treasuries narrowed in the inter-meeting period with BBB, BB, and B spreads moving by -3, -14, -27 basis points, respectively. Over the same period, equity markets performed well with the S&P500 index up 1.29%, although the NASDAQ was down 0.29%. Equity market volatility has also declined; S&P500 implied volatility is down 118 basis points to 11.21%, while NASDAQ implied volatility is down 179 basis points to 16.10%.

Since the January meeting, implied interest rate skewness has declined from -1.6 to -2.0 [Exhibit B-5]. This indicates heightened concern about an unexpected policy rate cut compared to an unexpected rate increase. At the same time, interest rate volatility is expected to remain at relatively low levels. Implied 10-year interest rate volatility declined from 4.77% to 4.19%, while 30-year Treasury volatility declined from 7.57% to

6.84%. Eurodollar implied volatilities also are low compared to the past; for example, the 6-month LIBOR confidence interval is at 87 basis points [Exhibit B-6].

Monetary Policy and Global Bond Markets

The drift towards global policy tightening has become more pronounced in the inter-meeting period, shaping financial developments worldwide. In the euro area, stronger cyclical conditions and concerns that inflation will exceed 2.0 percent has supported expectations that the ECB will raise its policy rate 75 basis points by the end of the year to 3.25 percent. The next rate hike is expected in June, although there is the possibility of a rate hike in May. Expectations of higher interest rates caused European sovereign debt yields to rise across all maturities. At the same time, the yield curve continued to flatten, as well-anchored inflation expectations restrained long-term rates.

Responding to solid economic developments, the Bank of Japan ended its quantitative easing policy on March 9 and also announced a new monetary framework focused on maintaining price stability at a one-to-two year horizon. Going forward, the overnight interest rate will be maintained at zero while banks' excess reserves are gradually reduced. Following the liquidity draining, the Bank will conduct monetary policy by targeting short-term interest rates. The first increase in the policy interest rate is expected in 2006Q4, with some probability of an earlier hike depending on the strength of the economy. But the monetary stance may well remain accommodative as long as inflationary pressures are contained. Reflecting these developments, implied rates on euroyen futures contracts rose steadily ahead of the March 9 announcement and have continued to trend higher. JGB yields also rose over the inter-meeting period.

For the fifth consecutive meeting the Bank of Canada raised its policy rate 25 basis points, which now stands at 3.75 percent. However, weaker language in the statement and concern about larger-than-expected currency appreciation suggest that a pause is possible at the next meeting. More recently Norway and Switzerland's central banks hiked their key rates. Monetary policy in Emerging Asia also remains on a tightening path. This is not the case in Latin America: Mexico's easing cycle is expected to bring

the overnight rate down to around 7.0 percent by year-end. In Brazil, the central bank has eased the policy rate by 325 basis points since September to 16.5 percent. Argentina's monetary policy remains quite loose, with significantly negative real interest rates at the short end of the yield curve.

Equity Markets

Stock market movements worldwide reflect two countervailing forces: stronger cyclical conditions versus the anticipation of higher interest rates. In the euro area, the DJ Stoxx index continued to trend higher and reached a new multi-year record high in mid-March. Japanese equity prices were volatile, falling sharply early in the inter-meeting period but picking up again in recent weeks, partially spurred by government assurances that short-term interest rate changes will be gradual. Surging inflows into emerging markets have led to rapid rises in equity prices so far in 2006, with MSCI indexes rising 7 percent and 12 percent in Latin America and Emerging Europe respectively. With the notable exception of Korea, Asian equities generally have risen in the 2-6 percent range.

Exchange Rates and Capital Flows

Oil-exporting countries (including Russia and Norway), along with Japan and China, will fund most of the U.S. current account deficit in 2006. U.S. net inflows from the rest of the world are expected to reach \$973 billion in 2006. Western Europe is projected to record net inflows of \$25 billion in 2006, slightly more than in 2005.

For most of the inter-meeting period G3 exchange rates moved in line with relative interest rate differentials. The euro ended the period almost unchanged against the dollar and yen, as upward revisions to interest rate expectations in the euro area were matched by expectations for increased tightening in the U.S. as well as by speculation regarding the future monetary stance in Japan. Emerging Asian currencies were mixed against the dollar. The Taiwanese dollar and the Korean won both weakened amid concern regarding global policy tightening. In contrast, the Philippine peso strengthened notably in response to perceived improvements to the country's fiscal position. The pace of RMB appreciation against the U.S. dollar has been stronger recently, rising to a 3.3 percent annualized rate since February 1. Appreciation pressures on other currencies in

Emerging Asia have been muted recently, but they remain latent in the face of large and growing current account imbalances in the world economy. In Latin America, the Brazilian real gained more than 3 percent against the dollar over the inter-meeting period, while the Mexican peso depreciated nearly 3 percent against the dollar, with most of the decline occurring since the beginning of March.

Oil Market Developments

Oil prices (WTI) fell from about \$65 a barrel in January to \$62 in February. They have stabilized thereafter, supported in part by lower production in both Nigeria and Iraq. The average price over the first two weeks of March was 51 percent higher than the average price over the previous three years. Based on average futures prices, oil prices are expected to reach \$66.50 in 2006Q4 and \$67 in 2007Q4. Growth in oil demand is projected to accelerate to 1.8 percent in 2006 from 1.3 percent in 2005. More than half of this growth is related to demand from the U.S. and China. World oil production growth slowed considerably in 2005, as OPEC reached capacity limits and hurricanes damaged U.S. production facilities. Russia, Saudi Arabia and Angola are expected to account for more than half of the increase in global production in 2006. U.S. oil production will recover in 2006, although this increase masks a declining trend in output.

Second District

Our Indexes of Coincident Economic Indicators for January indicate accelerating economic activity in New Jersey and New York State; New York City's index continued to grow at a strong pace in January and surpassed its previous peak, set in early 2001 [Exhibit E-1]. Looking ahead to the next nine months, our leading indexes predict moderate growth throughout the region: economic activity is projected to grow roughly 1½% (annual rate) in New Jersey, 2% in New York, and nearly 3% in New York City [Exhibit E-2]. Local-area inflation was steady in February: the 12-month change in metropolitan New York City's Consumer Price Index (CPI) was 3.6%, which is little changed from that of December and January and also matches the national rate.

However, the core CPI accelerated slightly: the 12-month change was 2.6%, compared with 2.2% in January, which is about ½ percentage point above the national rate.

Labor Markets. The region's job market has been relatively steady in early 2006. Based on the establishment survey, private-sector employment in January declined 1% (annual rate) in New York and 2% in New Jersey; however, virtually the entire decline was in retail trade and thus likely reflects seasonal volatility not properly accounted for in the seasonal adjustment factors. Between January 2005 and January 2006, private-sector employment increased slightly more than 1% in both states and rose a fairly brisk 1.8% in New York City [Exhibit E-3]. Annual benchmark revisions for 2004-2005 were relatively inconsequential in regard to the regional outlook: New Jersey now looks slightly weaker than it did initially, while New York, particularly New York City, appears slightly stronger. In the household survey, New Jersey's jobless rate edged down from 4.6% to 4.5% in January, while New York State's rate fell 0.4 percentage point to 4.6%—its lowest level since the summer of 2001 [Exhibit E-4].

Real Estate. Commercial real estate markets have been steady in early 2006, while residential markets have shown further signs of softening. Office markets across the New York City metropolitan region were relatively stable in the first two months of 2006: vacancy rates edged up in Lower Manhattan, Long Island, Westchester and Fairfield County, but edged down in Midtown Manhattan and northern New Jersey. The markets for factory and warehouse space tightened somewhat, as industrial vacancy rates fell across most of the metropolitan area. Of particular note, Long Island's industrial vacancy rate is below 5 percent. In the residential sector, home prices have shown signs of decelerating and sales activity has slowed.

Surveys and Other Business Activity. Recent surveys indicate stronger business confidence in the region and stable consumer confidence. March's Empire State Manufacturing Survey signals a further acceleration in manufacturing activity and continued optimism about the six-month outlook. Similarly, purchasing managers in both the New York and Buffalo areas report that business conditions strengthened in

February, though those in the Rochester area report some slowing. On the consumer side, both Siena College's monthly survey of New York State residents and the Conference Board's survey of regional residents (NY, NJ, PA) show consumer confidence increased marginally in February following small decreases in January.

3. Outlook

FRBNY's Central Forecast

There are three fundamental factors behind our central projection [see Exhibits A-1 to A-5].

1. Inflation expectations are well-contained.
2. There is little if any slack remaining in resource utilization. Therefore, if there are no large shocks, future growth will be near its potential rate of approximately 3¼-3½% (2¼-2½% long-run productivity growth [GDP basis] plus 1% labor force growth).
3. The term premium will remain low.

Recent developments have not led us to change these underlying assumptions for the central forecast. However, the flat yield curve is a source of some additional uncertainty about our forecast, although that uncertainty is less than it was at the time of the last Blackbook. As such, the forecast will remain sensitive to the incoming data.

Inflation. Monthly changes in headline price indices during the inter-meeting period have been volatile as energy costs have fluctuated and non-energy inflation has been stable. Through the recent fluctuations, oil prices have remained high, and we expect little net change in oil prices and in overall energy prices over the forecast horizon. We also assume that in an environment of flexible product and labor markets as well as continued FOMC credibility there will be only modest pass-through of energy price increases to other goods and services. Consequently, we expect core PCE inflation to be about 2% in 2006; with relatively little change in energy prices expected, overall PCE inflation should

be slightly higher. In 2007, a slow moderation begins as FOMC credibility and monetary tightening effects take hold, leading core PCE inflation to decline gradually toward its implicit target.

Real Activity. In general, we expect the economy to grow at or slightly below our estimate of its potential growth rate (3¼%-3½%) over the forecast horizon. Real GDP growth looks to be on track for a substantive rebound (over 4½%) in the current quarter after the temporary downward blip in 2005Q4. Fiscal stimulus and strong business investment in equipment and software should help support growth in the following two quarters, counteracting a moderating housing market. Beyond this, the housing moderation and the continued effects from monetary tightening slow GDP growth to just under the potential rate at the end of 2006 and 2007. With real growth around the potential rate over the forecast horizon, we expect little change in the unemployment rate from its current level.

Comparison with Greenbook Forecasts

GDP and Inflation Forecast. The Greenbook baseline forecast is conditioned on a policy path slightly higher than that in January: the policy rate is expected to rise to 5% at the May meeting and stay at that level until mid-2007, when it is expected to move back to 4.75%. Despite the tighter policy stance, real GDP growth is revised up 0.1 percentage point for both 2006 and 2007, while inflation is well contained.

Other major features of the current Greenbook forecast are the following.

- Core PCE inflation was revised down 0.1 percentage point for 2006, when it is expected to be 2.1%, and revised up 0.1 percentage point in 2007 to 1.9%;
- Real GDP growth forecast for 2006 is 3.8%, revised up slightly from January.
- Potential GDP growth is projected to rise over the forecast period to 3.3% due to an increase in structural productivity sustained by the pick-up in capital spending of the past few years;
- Relative to the January projections, actual productivity growth was revised down for 2006, but is expected to grow close to its structural growth rate of 3% in 2007.

- Payroll employment is expected to slow substantially over the forecast horizon with no significant effects on the unemployment rate because of a decline in the participation rate.

Our staff forecast of real GDP growth shows, as in January, a smoother path than the Greenbook forecast [see Exhibit A-2]. Our projection for 2006 is 0.2 percentage point below the Greenbook forecast for 2006 (3.6% vs. 3.8%) but 0.2 percentage point above the 2007 Greenbook projection (3.3% vs. 3.1%). The slower growth in 2007 appears to be due primarily to the Greenbook forecasting slower growth in equipment and software expenditures and government expenditures than is in our staff forecast.

For inflation, the FRBNY central forecast and the Greenbook forecast are essentially the same. A substantial difference appears, as has been the case for the last few FOMC cycles, in the outlook for productivity and unit labor costs. In 2006, both forecasts have a rebound of compensation per hour from the low growth rate (3.8%) in 2005; however, our forecast of a growth of 4.4% is lower than the Board's forecast of 5.2%. The discrepancy persists for 2007. Since our forecasts for labor productivity are similar to the Board's, the different projections for compensation growth translate in a much lower unit labor cost in our forecast, 1.5% and 1.6% respectively in 2006 and 2007, vs. 2.3% and 2.4% in the Greenbook.

To reconcile different projections of unit labor costs with similar inflation projections we must infer that the Board assumes some contraction of profit margins.

Alternative Greenbook forecasting scenarios. There is a significant change, compared to previous practices, in the way the Greenbook analyzes alternative forecasting scenarios (which are now called alternative 'simulations'). These are run, as before, using the FRB-US model (after its residual have been adjusted to match the Greenbook forecast), but with two important innovations (documented in the box on p. 1-17 in the Greenbook).

First, the projections are not conditioned on an assumed exogenous path for the federal funds rate: the path of the target rate is instead simultaneously generated by the policy rule incorporated in the model. Second, the policy rule used in these scenarios is the

Bluebook “outcome-based” Taylor rule, estimated on real-time data since 1988. Finally, the sample period used to compute forecast intervals is shortened, starting from 1986 rather than 1978, to eliminate the volatilities of the 1970s.

One consequence of these innovations is that the Greenbook presents for the first time implied paths of the policy target rate and fan charts of forecast confidence interval for output, inflation, unemployment, and policy rate.

It is unfortunate that these simulations cannot be meaningfully compared to the baseline forecast, since the baseline is conditioned to an exogenous path for the policy rate. It would be interesting to know what would be the implied path of the FFR given the rest of the baseline assumptions.

Furthermore, the simulations are (as in previous Greenbooks) derived from ad hoc scenarios that take the form of changes in assumptions about the deterministic part of the model, as opposed to changes in the probability distribution of the shocks. In our opinion, the latter would be more desirable.

The alternative scenarios considered in the Greenbook span variations to both the supply-side baseline assumptions—lower NAIRU, slower growth of structural productivity, and greater cost pressures—and the demand side assumptions—more robust E&S investment, strong demand, and higher term premia. Major inflation deviations from the baseline occur in the scenario with greater cost pressures and the one with slower productivity growth: these generate inflation consistently above 2% over the forecast horizon, despite an increase in the implied FFR. A simulation that has negative implications for output growth is the slower productivity growth simulation, where output growth slows significantly to 2.8% in 2006 and 2.3% in 2007. Substantial upside real growth implications occur in the stronger demand simulation, due perhaps to a firming in the housing market. In this case output growth is above 4½% in 2006 and close to 4% in 2007, and inflation, above 2% in 2006, is contained in 2007 via a very steep increase to the market rate.

An interesting scenario is the one where inflation expectations, which in the baseline assumptions are assumed higher in recent years by ½ percentage point, are instead assumed anchored. Under this scenario, output growth is as in the baseline, the implied path of the interest rate is at 4¾ % in 2006 and 4¼ % in 2007, while inflation declines during the forecast horizon to settle at 1.5% in 2007. This scenario suggests that, if inflation expectations are anchored, the tightening cycle is at its end, and we are going to see some of its delayed effect on inflation in the course of 2007.

Comparison with Private Forecasters

Looking at private sector forecasts for 2006, the outlook for GDP growth is similar to that of our staff forecast [see Exhibit A-5]. Strong first quarter of growth around 4.5% (almost uniformly revised up from the outlook presented in January) is followed by a slowdown in the next two quarters to about 3%, slightly below our staff forecast of 3.5%.

Macroeconomic Advisers is notable for anticipating more sustained growth into the second quarter.

As for inflation forecasts for the first 3 quarters of 2006, the Macroeconomic Advisers forecast concurs with our staff forecast of core CPI around 2.3%. It however predicts a more volatile total CPI inflation, which is around 2% in Q1, peaks at 3% in Q2 and moderates to 2.5% in Q3. The other private forecasters have a smoother path of total CPI inflation of about 2.4 overall, which is closer to our staff forecast.

Foreign Outlook. The Board's foreign outlook is similar to ours for 2006, with the notable exceptions of China and Mexico. Both forecasts anticipate relatively strong global growth this year, with some acceleration in the euro area and significant deceleration in Japan after last year's unsustainable performance. In regard to China, the Board forecasts a sizable growth slowdown from 9.9 percent in 2005 (Q4/Q4) to 8.2 percent in 2006. The Board believes that an export slowdown has started and that the government will succeed in reducing investment spending growth. We forecast a more modest slowdown this year to 9.0 percent, which is our estimate of the Chinese potential

growth rate. Note that we revised up our estimate of the potential growth rate from 8.0 percent in response to changes in the calculation methods for Chinese GDP. In Mexico, we expect uncertainties surrounding the upcoming election to keep growth at a relatively modest rate. The Board assumes a more significant acceleration as the economy recovers from last year's hurricane and drought damage.

U.S. Trade. Our forecast has a slightly bigger drag from net exports on GDP growth in 2006. We project a 0.5 percentage point drag (Q4/Q4) while the Board has a 0.3 percentage point drag, with the difference largely on the import side. The Board also has more volatility in the pattern of its quarterly net export numbers. The greater volatility reflects their belief that oil flows are not adequately seasonally adjusted. As a result, their projected oil import volume is much lower than our forecast in Q2 and much higher than our Q4 forecast.

FRBNY Alternative Scenarios and Risks

In addition to the central projection discussed at the beginning of this section, we also consider a number of alternative scenarios that have different implications for monetary policy. Our approach differs from that in the Greenbook in that we attach probabilities to our alternative scenarios and usually keep the same scenarios across FOMC cycles. This allows us to produce a forecast distribution for output and inflation, and we focus considerable attention on the variation of those probabilities over time. Once introduced, we keep an alternative scenario until its probability is assessed to be minimal; for example, we introduced the hurricane-induced sharp slowdown scenario in September 2005 after the landfall of Hurricane Katrina and removed it in December 2005 when it became clear that such a slowdown was extremely unlikely.

We also can produce (when necessary) other forecast distributions with a much higher weight on an alternative scenario to examine the implications for policy. This was done in January 2006 in response to the near yield curve inversion and the surprisingly low advance reading on 2005Q4 GDP growth. We examined the implications of a doubling of

the probability of a productivity slowdown. This alternative forecast distribution was produced only for the January Blackbook and is dropped from this Blackbook.

FRBNY Alternative 1: Global Deflation. This scenario is related to changes in the world economy, particularly the growth of the Chinese economy and the stagnation of the economies of Europe and Japan. The growth of the Chinese economy represents a shift in the aggregate supply curve, leading to higher growth and lower inflation in the US. On the other hand, the stagnation of the European and Japanese economies represent a shift in the aggregate demand curve, leading to lower inflation and lower growth in the US. The net effect of these shifts has been unambiguous in terms of lowering inflation and lowering long-term yields. These developments have been supportive of recent growth in the US. However, the downside risk in this scenario comes from an abrupt slowdown in Chinese growth without a compensating increase in Europe or Japan, thereby generating an unfavorable deflationary shock to the world economy. The recent signs of strength in Europe and Japan, continued robust growth in China, and continued high commodity prices have lowered slightly the probability of this scenario.

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). Our current central projection for productivity in the medium-term assumes a growth rate similar to the pre-1973 epoch. There are 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—despite the recent short-term moderation—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 estimates. Strong productivity growth would also limit labor cost pressures, and thereby help to keep inflation subdued. Fourth quarter productivity growth was less supportive of this scenario but it appears much of the slowdown in productivity was temporary. Moreover,

the scenario is still supported by the continued strength in IT industrial production growth, the FRBNY Tech pulse index, and hi-tech equipment and software expenditure indicators.

2b. Productivity Slump

It is possible that the source of the recent upswing in productivity is temporary. Further, the persistent increase in the level and volatility of energy prices as well as the reallocation of resources produced by recent natural disasters in the US could also be associated with lower labor productivity growth. The fourth quarter estimate of a decline in productivity is supportive of this scenario as is the signal from the Kahn-Rich productivity model. However, indications of a strong first quarter have lowered the probability of this scenario.

FRBNY Alternative 3: Overheating. The extremely accommodative policy adopted in the US and other countries since the global slowdown of 2000-2003 may produce a persistent move in inflation above implicit targets with an abrupt slowdown in real output growth starting in early 2006. There are two potentially connected channels at work here. The first is a continued underestimate of the equilibrium real rate (i.e., an overestimate of slack in the economy) and the second is higher energy prices. Sustaining the real policy rate below the equilibrium rate for a long time will tend to switch the impact of monetary policy from increasing real output to raising inflation due to an eventual increase in inflation expectations. The evidence from core consumer inflation reports has not been supportive of this viewpoint. TIPS implied inflation rates give no indication that markets are pricing in a large increase in underlying inflation, and the UIG model also does not indicate a large increase. One possible explanation for the lack of evidence in favor of this scenario is that the exchange rate policy of some foreign central banks combined with inflation targeting is reducing the immediate inflationary impact of the overheating. While our current description is admittedly terse, we intend to provide a more thorough analysis in the future.

Additional Uncertainties

Foreign Outlook. An upside risk in the euro area is that investment spending will turn out stronger than currently projected. Such spending was reasonably strong in the second half of last year, and a similar increase in spending is projected this year. Business confidence continues to improve and it may turn out that the solid export performance in the second half of 2005 and high equity values could cause a more substantial increase in investment spending this year. A downside risk is consumer spending. The forecast assumes that consumption adds a bit more to GDP growth this year than last, but consumption has had a tendency to disappoint in recent years.

In Japan, there is significant uncertainty over the future conduct of monetary policy following the announcement of a new monetary framework. There is some risk that the relatively low target rate for inflation implied in the new framework could lead to higher short-term interest rates sooner than currently anticipated.

Signs of more flexibility with China's currency may not be enough to forestall trade tensions with the United States. The U.S. Treasury may still label China a currency manipulator, with unpredictable market consequences. Appreciation pressures on other currencies in Emerging Asia have been muted recently, but given the continued swelling of the U.S. current account deficit these pressures could return at any time.

In Latin America, the key watch points include financial market reactions to upcoming elections. In Mexico, the increasing lead in the polls of left-of-center candidate Andres Manuel Lopez Obrador may prompt increased concern in the private-sector. In Brazil, the approach of presidential elections in October 2006 has created momentum behind politically popular stimulus measures, including a significant increase in public sector salaries and the minimum wage.

U.S. Trade Forecast. The trade forecast assumes import growth remains moderate relative to domestic demand growth, as it was in 2005. One concern is that the pick-up in import volumes in December and January points to a higher than expected growth rate for

the year. A second uncertainty is whether Europe and Japan are poised to enter an investment spending boom which may raise U.S. exports.

Quantifying the Risks. The data over the inter-meeting period have been more consistent with our central scenario. Therefore, we are raising the current probability assessment of the central scenario to 69.5% (it was 67% for the January FOMC). We assume that the two most likely alternative scenarios are the productivity slowdown at 10% (12% in January) and the productivity surge at 10% (10% in January), followed by the overheating scenario at 6% (6% in January), and finally global deflation at 1.5% (2% in January). The remaining 3% (3% in January) is split evenly between upside and downside risks. The implied dynamic balance of risks is shown in Exhibit C-1.

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 Bank forecast has been extended through the end of 2008 under the assumption that output grows at the potential rate of 3.3% and inflation converges back to the implicit inflation target of 1.5%. The probability of core PCE inflation exceeding 2.5% by the end of 2008 is now 55% (55% in January) (this probability is produced by considering the share of inflation paths that exceed 2.5% and cannot be obtained directly from the forecast distribution presented in Exhibit C-4). The probability that the expansion continues through the end of 2008 is unchanged at 95%.

The FRBNY “confidence intervals” are analogous to those presented in the Greenbook under our standard risk assessment. For this cycle the “confidence intervals” in the Greenbook have been re-estimated over a more recent time period. The effect of this is to reduce the width of the Board staff confidence intervals for 2007 relative to the January Greenbook. In general we have a similar level of confidence for 2006 as the Board but less confidence in 2007 on inflation. For example, the Greenbook has a 70% probability interval of 1.1% to 2.8% for core PCE inflation in 2007, while our interval ranges from 0.7% to 3.6%. The source of the wider interval is the weight we place on our alternative

scenarios. These scenarios do not receive the same weight in the historical data from 1986.

4. Policy Alternatives

Under our main forecast and risk assessment, the FFR should be raised by 25 basis points at the upcoming meeting to 4.75%. This has been the terminal level implied by our forecast and risk assessment for most of the current tightening cycle. At this juncture and in light of the extent of the previous increases in the FFR, the signal about future FFR movements is more dependent on views about the costs and risks of core inflation running close to the top of the implicit range and the implications of global economic and financial conditions for the stance of monetary policy. In the special topic “The case for signaling a pause” we discuss the case for at least signaling a possible pause at 4.75%. In the main text we focus on the argument for signaling a terminal FFR at around 5%.

Our standard assessment of policy is based on using the core PCE deflator as the indicator of inflationary pressure. For almost two years both the core PCE and core CPI have been running well below headline inflation. Moreover, they also have been below most alternative measure of underlying inflation (median, trimmed mean, FRBNY UIG and FRBNY smoothed inflation). The only measure of underlying inflation that is more benign than core PCE inflation is the market-based core PCE inflation.

Our forecast has core PCE inflation remaining near or slightly above the top of the implicit range until the end of 2007. Recent core inflation reports have been at or slightly below our expectations; however, core services prices, particularly owners' equivalent rent, have shown signs of acceleration. Because much of services are non-traded, these prices probably are more influenced by domestic monetary conditions. In contrast, core goods prices, which have been a primary factor behind benign core inflation, are more heavily influenced by global considerations outside of the realm of domestic monetary policy. In particular, even though there is some controversy over the amount of exchange rate pass-through, there certainly are upside risks to goods prices from a depreciation of the dollar that would probably raise core inflation above the top of the implicit range.

The above considerations suggest that increases in core inflation when it is near or above the top of the implicit range may be more costly than similar increases when core inflation is near the implicit target (these considerations typically have not been incorporated into many standard policy rules). These considerations thus suggest policymakers should be more aggressive in raising rates when core inflation is near the top of the implicit range, as it is now. How much more aggressive still depends upon policymaker preferences for deviations of inflation above target relative to the risks of output falling below potential.

The current tightening cycle has been unusual because of the behavior of long forward rates. As the FFR has been increased, long forward rates have declined and the result has been little if any increase in long-term rates. There have been numerous explanations for this conundrum that have different implications for the neutral policy rate. In this Blackbook we have updated our overheating scenario to include the role of global imbalances and the exchange rate policies of foreign central banks. At the same time the weight on the global deflation scenario has been reduced, lowering the risks of a large policy mistake induced by over-tightening. The overheating scenario has the characteristic that its implication for future policy is not fully captured by our standard policy rules. This is because an underlying assumption of the standard rules is that their prescription is valid only if policy has been appropriate in the past. However, one implication of the overheating scenario is that policy would have been too accommodative in the past.

To provide a quantitative analysis of these issues we examine the prescription of three different policy rules:

1. *Dove (below market expectations)*. No increase in March and a neutral signal for future actions, noting the moderation of inflationary pressures and the strength of productivity growth.

2. *Dual (slightly below market expectation)*. Increase by 25 basis points in March with a mixed signal of an increase in May. This rule produces a policy similar to that described in the special topic.
3. *Inflation Hawk (slightly above market expectations)*. Increase by 25 basis points with a strong signal of reducing core inflation to the (implicit) target or range on a sustained basis. This rule produces a policy similar to that described in the main text by reacting more strongly than the standard rule to deviations of core inflation above 2%.

The preamble to the D-Exhibits contains a description of how the various rules react to incoming data.

Exhibit D-1 contains the results of averaging the prescription of these three rules over the Bank forecast distribution. It shows the implied (quarterly average path) of FFR through the end of 2007 compared to that currently priced into markets. The *Inflation Hawk* rule produces a level for the FFR at the end of 2006 very close to that currently priced into financial markets. The other two rules produce less tightening than currently priced into markets, but they are not very different from the market-implied path by the end of 2007.

Exhibit D-5 shows there is a high probability that 4.75% represents a ceiling for the FFR in 2006Q2 under the *Dual* rule, while the *Dove* rule puts more weight on rate cuts in 2006. The distribution implied by the *Inflation Hawk* rule has considerable skewness (i.e., it places more probability on outcomes above 5% for the FFR than would be implied by a symmetric distribution around the expected value). There is no evidence that such skewness is priced into markets [see Exhibit B-5], but the skewness is consistent with Fed commentary concerning risks to price stability and the primary dealer survey.

If we focus on the *Inflation Hawk* signal, which appears to be most consistent with market expectations for the next two meetings, then the FRBNY alternative scenario of global deflation continues to have very different implications for policy in 2006 and 2007. All of the other alternative scenarios imply a short-run policy similar to that priced into markets. Exhibit D-2 contains the path of the nominal FFR and Exhibit D-3 contains the path of the real FFR for our four main alternative scenarios through the end of 2008.

Exhibit D-2 shows the projected path of the FFR is much higher under the FRBNY overheating scenario in 2007 than under our central projection or the market-implied path, with Exhibit D-3 showing that the real FFR takes longer to catch up in the overheating scenario. The path of the FFR under the global deflation scenario is very different, even in the short-run, from the other paths as the Fed reacts quickly to signs of deflationary pressures. The productivity slump scenario is relatively easy to identify because of its differential effects on output and inflation [see Exhibits C-2 and C-3].

Exhibit D-4 shows the result of running our standard policy rule—setting the initial FFR at its value in 2004Q4—with a 1.5% inflation target and a 1.75% inflation target (see the preamble to the Exhibit D for more information on the standard policy rules as well as this exercise). The path derived from the 1.5% target closely follows the actual FFR path until the middle of 2005. After this, the slope of actual policy has been considerably steeper than that implied by the standard policy rule. The policy rule with the 1.5% inflation target does reach the level of FFR currently priced into markets in late 2007. The exhibit also includes the implications of averaging our three policy rules, where the average was chosen to match the market-implied expected path as closely as possible. Compared to the January Blackbook, the weight on the *Inflation Hawk* rule has been increased from 0.2 to 0.5, while the weight on the *Dual* rule has been reduced from 0.7 to 0.4.

Special Topic

The Case for Signaling a Pause

March 24th, 2006
Argia Sbordone, ^{Redacted}

Another 25 basis point increase in the FFR at the March meeting is fully priced into markets, although there is some uncertainty about the appropriate signal to send in the statement concerning the future path. For most of this tightening cycle, we have assumed that 4.75% represented the most likely endpoint of the cycle. However, the recommendation in this Blackbook is to signal an additional increase to 5% at the next FOMC meeting. In contrast, I believe that that the FOMC should send a flat signal in the upcoming statement. My arguments are the following.

1. There is no strong evidence of increasing inflationary pressures.

a. The recent trends of core PCE inflation as well as that of core CPI inflation [see Exhibit A-6] indicate some moderation: the 12-month change in the core PCE deflator has declined since November 2004 from 2.3% to 1.8%, and the corresponding measure for CPI inflation peaked at 2.4% in February 2005 and is now down to 2.1%.

b. Going forward, the evidence from financial markets (carry-adjusted TIPS) and our own inflation gauge measure (UIG) signal a very mild increase at the 2-3 year horizon as well as well-contained expectations for the longer term.

c. A recent development that might weaken this argument is the February PPI, which was above expectations. However, the transmission of PPI inflation to consumer inflation is relatively weak.

2. Core PCE inflation of 2% is not necessarily at the upper end of the target range.

In the absence of an explicit inflation target, we have been assuming an implicit range for core PCE inflation between 1.0 and 2.0 percent. Based on this assumption, our staff assessment is that inflation pressures have abated, although they remain elevated (see US Recent Developments).

However, the implicit target for core PCE inflation is based on an implicit range of 1.5 to 2.5% for core CPI inflation and a gap of about 50 basis points between the two measures. This gap has narrowed significantly over the past several years, and is now less than 20 basis points. Furthermore, previous tightening will continue to have disinflationary effects. Taken together, these arguments suggest that core PCE inflation of 2% at this stage of the cycle is a comfortable situation.

3. Unit labor costs projections do not appear inflationary.

The expected evolution of unit labor costs does not suggest additional inflationary pressures. In a modern New Keynesian framework, inflation depends on expected future inflation and real unit labor costs. While our staff forecast expects nominal wage growth to be accelerating, nominal unit labor costs are projected to increase by only 1.5%. Given our inflation forecast, real unit labor costs are expected to decline.

4. The expected May target rate may actually be tighter than necessary.

The issue concerns the level of the equilibrium real rate. Some have argued it is now lower than in previous tightening episodes, which also would imply a lower neutral policy rate than in

in the past. This is one of the possibilities that Chairman Bernanke outlined in his speech of March 20th. Some evidence supporting this view is the near-inversion of the yield curve and the level of implied forward rates at the 4-5 year horizon.

5. If inflation expectations are anchored, the tightening should end in March.

This is incorporated in one of the Greenbook scenarios where inflation expectations are assumed to be anchored at 1.5% (see Comparison with Greenbook Forecast). In this scenario, output growth slowly declines to potential over the forecast horizon, and inflation settles at 1.5%, with an implied policy rate of 4¾ % in 2006 and 4¼ % in 2007.

6. Pausing provides more time to read incoming data.

A pause in May does not preclude a further tightening if subsequent data suggest rising inflationary pressures. This strategy also has the advantage of avoiding an abrupt reversal of policy, if instead the data signal an unexpected softening in real activity. Incoming information will hopefully resolve some of the current uncertainty by the time of the June meeting.

The question still remains how to reconcile a recommendation of keeping the target rate at 4.75% when market expectations are closer to 5%. I would argue that while policymakers should extract information from financial markets, they should not implement policy to validate market expectations. The expected target curve has been quite volatile since mid-February, and I find it hard to imagine that a statement signaling a pause in May would be perceived as a true "surprise."

A. Forecast Details

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

Summary of the FRBNY forecast for the current FOMC cycle and the previous two cycles. Provides the forecasts of real GDP growth, change in the GDP deflator, 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

Summary of the baseline FRBNY and Board forecasts for the current FOMC cycle and the previous cycle. Besides variables included in Exhibit A-1, there are forecasts for some broad components of GDP, some measures of productivity and wages, labor force participation, payroll employment growth, and some financial market variables.

Source: MMS Function, FRBNY; Board staff

Exhibit A-3. Judgment Table

History and current predictions of the primary variables in the FRBNY forecast. This includes the detailed judgments—such as those for interest rates, profit growth, productivity, and real activity—that are behind our forecasts for aggregates such as real GDP and inflation.

Source: MMS Function, FRBNY

Exhibit A-4. Real GDP and components (growth contributions)

History and current forecasts of the contributions to real GDP growth of the broad components of expenditures. Growth contributions are in percentage points.

Source: MMS Function, FRBNY

Exhibit A-5. Alternative GDP and Inflation Forecasts

Real GDP growth and CPI inflation forecasts from a number of sources. Besides the FRBNY forecast, the table includes the median forecasts from two surveys of forecasters (Blue Chip and Survey of Professional Forecasters [SPF]), the forecasts from

Macroeconomic Advisers, and the forecast from a small model (PSI model) that uses business activity and sentiment as the primary independent variables.

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

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

The three tables in this exhibit show the actual changes in inflation as measured by the PCE deflator, CPI, and PPI over 1, 3, 6, 12, and 24 months.

Source: Bureau of Economic Analysis and Bureau of Labor Statistics

Exhibit A-7. Underlying Inflation Gauge (UIG) and Implied Inflation from the TIPS

The chart displays measures of inflation expectations from the UIG, and compares them to the TIPS measure over the same horizon (a non-technical description of the construction of this measure is in Appendix to Exhibit A-7 below. A non-technical description of the construction of inflation expectations from the TIPS is in Appendix to Exhibit B-1).

Source: MMS Function, FRBNY and Swiss National Bank.

Exhibit A-8. Comparison of Alternative Measures of Trend Inflation

These charts display widely used measures of trend inflation. The measures of CPI inflation include 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 UIG measure. The measures of PCE inflation are total, core, the trimmed mean (Dallas Fed), and a smoothed measure (calculated in a manner similar to the smoothed CPI measure). *Source: FRB Cleveland; FRB Dallas; MMS Function, FRBNY; and Swiss National Bank.*

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

The Underlying Inflation Gauge is a measure of underlying inflation that incorporates information from a very broad set of nominal and real variables. It is constructed using a dynamic factor model to extract a common component from the set of variables, and then removes the high frequency movements (fluctuations whose frequency is up to one year)

from this component. This filtering reflects our view that monetary policy is primarily interested in shocks with a medium-term impact on inflation. In terms of units, the UIG maps into a measure of consumer price index.

We use this factor model to determine the oscillations of the UIG about its long-term level. Assuming that long-term expectations are well anchored, we set the long-term level of the UIG to 2.25%, the average inflation rate since 1994, which can be interpreted as an implicit inflation target.

A. Forecast Details

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

	FRBNY						Board					
	2005		2006		2007		2005		2006		2007	
	JAN	MAR	JAN	MAR	JAN	MAR	JAN	MAR	JAN	MAR	JAN	MAR
REAL GDP (Q4/Q4)	3.1	3.2	3.4	3.6	3.3	3.2	3.4	3.3	3.7	3.8	3.0	3.1
GROWTH CONTRIBUTIONS(Q4/Q4)												
FINAL SALES TO DOMESTIC PURCHASERS	3.4	3.6	3.9	3.9	3.7	3.7	3.7	3.6	3.8	4.1	3.1	3.3
CONSUMPTION	2.1	2.1	2.4	2.7	2.2	2.2	2.1	2.1	2.5	2.7	2.3	2.3
BFI	0.7	0.7	1.0	1.1	1.0	1.1	0.7	0.7	0.8	0.9	0.6	0.7
STRUCTURES	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.2	0.1	0.1
EQUIPMENT & SOFTWARE	0.6	0.7	0.9	1.0	0.8	0.9	0.6	0.7	0.6	0.7	0.5	0.6
RESIDENTIAL INVESTMENT	0.5	0.4	-0.2	-0.3	-0.1	-0.1	0.5	0.5	0.1	0.1	-0.1	0.0
GOVERNMENT	0.2	0.3	0.6	0.5	0.5	0.5	0.4	0.3	0.4	0.4	0.3	0.3
FEDERAL	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.0	0.0
STATE & LOCAL	0.1	0.1	0.4	0.3	0.4	0.4	0.2	0.1	0.3	0.2	0.3	0.3
INVENTORY INVESTMENT	-0.2	-0.2	0.0	0.1	0.1	0.0	0.0	-0.1	-0.1	0.0	0.2	0.2
NET EXPORTS	-0.2	-0.2	-0.5	-0.5	-0.4	-0.5	-0.2	-0.2	-0.1	-0.3	-0.3	-0.4
INFLATION/PRODUCTIVITY/WAGES (Q4/Q4)												
GDP DEFLATOR	3.0	3.1	2.5	2.1	2.1	2.1	2.9	3.1	2.2	2.5	2.0	2.1
PCE	3.0	3.0	2.3	2.2	2.0	2.0	2.9	3.0	2.3	2.0	1.8	1.9
CORE PCE	1.9	1.9	2.0	2.0	1.8	1.8	1.8	1.9	2.2	2.1	1.8	1.9
COMPENSATION PER HOUR	4.1	3.8	4.5	4.4	4.5	4.6	3.3	3.8	5.3	5.2	5.2	5.3
OUTPUT PER HOUR	3.3	2.5	3.0	2.9	3.0	3.0	2.7	2.5	3.1	2.8	2.8	3.1
UNIT LABOR COSTS	0.8	1.3	1.5	1.5	1.5	1.6	0.6	1.3	2.1	2.3	2.4	2.1
EMPLOYMENT VARIABLES												
UNEMPLOYMENT RATE (Q4 LEVEL)	5.0	5.0	4.9	4.7	4.9	4.7	5.0	5.0	5.0	4.8	5.1	4.9
PARTICIPATION RATE (Q4 LEVEL)	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.0	66.0	65.8	65.8
NONFARM PAYROLL EMPLOYMENT (Q4/Q4 CHANGE)												
TOTAL, IN THOUSANDS	1993	1917	1464	2054	1373	1229	2000	1900	1800	2000	1000	1000
AVERAGE PER MONTH, IN THOUSANDS	166	160	122	171	114	102	167	158	150	167	83	83
FINANCIAL MARKET VARIABLES												
FED FUNDS RATE (PERCENT)	3.97	3.97	4.75	5.00	4.75	4.75	4.25	4.25	4.75	5.00	4.50	4.75
BAA BOND YIELD (PERCENT)	6.3	6.3	6.6	6.6	6.6	6.6	6.3	6.3	6.3	6.5	6.4	6.5
EFFECTIVE EXCHANGE RATE (Q4/Q4 % CHANGE)	-2.4	-1.0	-1.6	-3.1	N/A	-1.5	2.6	2.6	-2.9	-2.4	N/A	-1.3

Note: Jan FRBNY forecast incorporates BEA advance estimate of 2005 Q4 GDP, while Board forecast does not.

A. Forecast Details

Exhibit A-3: Judgment Table

	2005:01	2005:02	2005:03	2005:04	2006:01	2006:02	2006:03	2006:04	2007:01	2007:02	2007:03	2007:04	2004	2005	2006	2007
REAL GDP AND COMPONENTS (% Change, AR)																
GDP.....	3.8	3.3	4.1	1.6	4.7	3.4	3.5	2.9	3.4	3.5	3.2	2.9	3.8	3.2	3.6	3.2
CHANGE IN INVENTORIES (GROWTH CONTRIBUTION) 1).....	0.3	-2.1	-0.4	1.6	0.1	0.4	0.1	0.0	0.1	0.1	0.0	-0.1	0.2	-0.2	0.1	0.0
DOMESTIC PRIVATE PURCHASES.....	4.0	2.1	4.0	2.9	4.9	3.6	3.7	3.2	3.6	3.7	3.5	3.2	4.5	3.2	3.9	3.5
CONSUMPTION EXPENDITURES.....	3.5	3.4	4.1	1.2	5.1	3.6	3.5	3.3	3.2	3.2	3.2	3.2	3.8	3.0	3.9	3.2
BUSINESS FIXED INVESTMENT.....	5.7	8.8	8.4	5.4	10.9	9.3	10.3	9.9	10.2	10.2	9.5	8.7	10.9	7.1	10.1	9.6
RESIDENTIAL INVESTMENT.....	9.5	10.8	7.3	2.6	0.3	-8.4	-4.0	-8.9	-5.8	-0.2	-0.1	-2.7	6.6	7.5	-5.3	-2.2
NET EXPORTS (GROWTH CONTRIBUTION) 1).....	-0.4	1.1	-0.1	-1.4	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.5	-0.5	-0.9	-0.2	-0.5	-0.5
EXPORTS	7.5	10.7	2.5	5.7	7.7	5.9	5.7	5.8	5.6	6.2	5.2	5.0	6.1	6.5	6.3	5.5
IMPORTS	7.4	-0.2	2.4	12.8	7.7	6.7	6.4	6.5	6.3	6.4	6.3	6.2	10.6	5.5	6.8	6.3
FEDERAL GOVERNMENT.....	2.3	2.4	7.5	-2.6	1.4	3.5	3.5	2.0	5.5	1.5	1.5	1.5	4.2	2.3	2.6	2.5
STATE & LOCAL GOVERNMENTS.....	1.6	2.6	0.2	0.4	1.8	2.0	3.0	3.0	3.0	3.0	3.0	3.0	0.9	1.2	2.4	3.0
INTEREST RATE ASSUMPTIONS (%)																
FEDERAL FUNDS RATE (TARGET).....	2.44	2.92	3.43	3.97	4.46	4.88	5.00	5.00	5.00	5.00	4.75	4.75	1.94	3.97	5.00	4.75
YIELD ON 10-YR GOVERNMENT.....	4.3	4.2	4.2	4.5	4.6	4.8	4.8	4.9	4.9	4.9	4.9	4.8	4.2	4.5	4.9	4.8
BAA BOND YIELD.....	6.0	6.0	6.0	6.3	6.3	6.5	6.6	6.6	6.7	6.7	6.6	6.6	6.2	6.3	6.6	6.6
INCOME (% Change, AR)																
PERSONAL INCOME.....	2.0	4.5	2.6	9.6	6.6	6.6	7.2	4.3	6.8	6.6	7.5	4.2	7.5	4.6	6.2	6.3
REAL PERSONAL DISPOSABLE INCOME.....	-3.4	0.2	-1.4	7.1	3.8	4.2	5.1	1.9	4.9	4.7	5.7	2.2	4.1	0.5	3.8	4.4
PERSONAL SAVING RATE (% OF DPI).....	0.5	-0.2	-1.6	-0.2	-0.5	-0.4	-0.1	-0.5	-0.1	0.2	0.7	0.4	1.7	-0.4	-0.4	0.3
CORPORATE PROFITS BEFORE TAXES.....	24.5	19.7	-15.2	54.0	0.5	0.7	1.2	-2.1	-3.4	-0.6	-0.7	-2.1	9.6	18.1	0.1	-1.7
PRICES & PRODUCTIVITY (% Change, AR)																
GDP IMPLICIT DEFLATOR.....	3.1	2.6	3.3	3.3	2.1	2.3	1.8	2.1	2.3	2.0	2.3	1.9	2.9	3.1	2.1	2.1
PERSONAL CONSUMPTION EXPENDITURES.....	2.3	3.3	3.7	2.7	2.0	2.4	2.2	2.2	2.1	1.9	2.0	1.9	3.1	3.0	2.2	2.0
CORE PERSONAL CONSUMPTION EXPENDITURES.....	2.4	1.7	1.3	2.1	2.0	2.1	2.1	2.0	1.9	1.9	1.8	1.8	2.2	2.2	2.0	1.9
CONSUMER PRICE INDEX.....	2.5	3.7	5.5	3.2	2.3	2.6	2.5	2.4	2.4	2.3	2.3	2.2	3.3	3.7	2.5	2.3
CORE CONSUMER PRICE INDEX.....	2.5	2.0	1.6	2.4	2.2	2.4	2.4	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.3	2.2
COMPENSATION PER HOUR (NONFARM BUSINESS).....	0.0	1.3	5.5	2.8	4.2	4.3	4.5	4.5	4.6	4.5	4.6	4.6	5.9	3.8	4.4	4.6
OUTPUT PER HOUR (NONFARM BUSINESS).....	0.0	2.4	4.2	-0.5	2.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.6	2.5	2.9	3.0
UNIT LABOR COST (NONFARM BUSINESS).....	0.0	-1.0	1.2	3.3	1.5	1.3	1.5	1.5	1.6	1.5	1.6	1.6	3.3	1.3	1.5	1.6
REAL ACTIVITY																
CAPACITY UTILIZATION (MANUFACTURING, %).....	78.7	78.6	78.5	79.8	80.5	80.8	81.1	81.6	81.8	82.0	82.2	82.4	77.1	78.9	81.0	82.1
CIVILIAN UNEMP RATE (%) 2).....	5.2	5.1	5.0	5.0	4.8	4.7	4.7	4.7	4.7	4.7	4.7	4.7	5.4	5.0	4.7	4.7
PRIVATE HOUSING STARTS (THOUS. AR).....	2083	2044	2101	2059	2107	1960	1925	1910	1905	1900	1895	1880	1950	2072	1976	1895
LIGHT VEHICLE SALES (MIL\$, AR) 3).....	16.5	17.2	17.9	15.9	17.0	16.9	17.0	17.0	17.1	17.1	17.1	17.2	16.9	16.9	17.0	17.1
FEDERAL SURPLUS/DEFICIT (Unified Basis, Bil\$, NSA) 4).....	-176.6	45.2	-69.2	-119.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-412.3	-317.7	-357.2	-298.6

NOTE: All series other than interest rates and the federal deficit are seasonally adjusted. Italics indicate a reported value. 1) Growth contribution to real GDP. 2) Annual values are end of Q4 levels. 3) Includes domestic and foreign 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)

	2005				2006				2007			Q4/Q4 % CHANGE/Q4 LEVEL				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2004	2005	2006	2007
REAL GDP (Growth, Annual Rate)	3.8	3.3	4.1	1.6	4.7	3.4	3.5	2.9	3.4	3.5	3.2	2.9	3.8	3.2	3.6	3.2
<i>Contributions to GDP growth:</i>																
FINAL SALES TO DOMESTIC PURCHASERS	3.9	4.4	4.7	1.4	5.0	3.5	3.9	3.3	3.7	3.8	3.7	3.5	4.5	3.6	3.9	3.7
CONSUMPTION EXPENDITURES.....	2.4	2.4	2.9	0.8	3.5	2.5	2.4	2.3	2.2	2.2	2.2	2.2	2.7	2.1	2.7	2.2
BUSINESS FIXED INVESTMENT.....	0.6	0.9	0.9	0.6	1.1	1.0	1.1	1.1	1.1	1.1	1.1	1.0	1.1	0.7	1.1	1.1
RESIDENTIAL INVESTMENT.....	0.5	0.6	0.4	0.2	0.0	-0.5	-0.2	-0.5	-0.3	0.0	0.0	-0.2	0.4	0.4	-0.3	-0.1
FEDERAL GOVERNMENT.....	0.2	0.2	0.5	-0.2	0.1	0.2	0.2	0.1	0.4	0.1	0.1	0.1	0.3	0.2	0.2	0.2
STATE & LOCAL GOVERNMENTS.....	0.2	0.3	0.0	0.1	0.2	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.1	0.1	0.3	0.4
NET EXPORTS	-0.4	1.1	-0.1	-1.4	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.5	-0.5	-0.9	-0.2	-0.5	-0.5
EXPORTS.....	0.7	1.1	0.3	0.6	0.8	0.6	0.6	0.6	0.6	0.7	0.6	0.5	0.6	0.7	0.7	0.6
IMPORTS.....	-1.1	0.0	-0.4	-2.0	-1.3	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.5	-0.9	-1.1	-1.1
CHANGE IN INVENTORIES	0.3	-2.1	-0.4	1.6	0.1	0.4	0.1	0.0	0.1	0.1	0.0	-0.1	0.2	-0.2	0.1	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

		GDP					
		2006-Q1		2006-Q2		2006-Q3	
	Release Date	Prev*	Mar	Prev*	Mar	Prev*	Mar
FRBNY	3/23/2006	4.0	4.7	3.2	3.4	3.4	3.5
PSI Model	3/23/2006	3.7	3.5	3.3	3.0	--	--
Blue Chip	3/10/2006	4.1	4.7	3.4	3.3	3.1	3.0
Median SPF	2/13/2006	3.7	4.4	3.3	3.4	3.2	3.0
Macro Advisers	2/23/2006	4.3	4.6	3.5	4.2	3.4	3.2
CPI							
		2006-Q1		2006-Q2		2006-Q3	
	Release Date	Prev*	Mar	Prev*	Mar	Prev*	Mar
FRBNY	3/23/2006	2.1	2.3	2.8	2.6	2.5	2.5
Blue Chip	3/10/2006	2.2	2.4	2.4	2.4	2.3	2.4
Median SPF	2/13/2006	2.4	2.0	2.3	2.5	2.4	2.5
Macro Advisers	2/23/2006	1.9	2.0	1.7	3.0	1.8	2.5
Core CPI							
		2006-Q1		2006-Q2		2006-Q3	
	Release Date	Prev*	Mar	Prev*	Mar	Prev*	Mar
FRBNY	3/23/2006	2.1	2.2	2.2	2.4	2.3	2.4
Macro Advisers	2/23/2006	2.2	2.3	2.0	2.3	2.2	2.4

Notes: Previous release of Blue Chips is February, SPF is November, and all others is January.

A. Forecast Details

Exhibit A-6: Reference Table 1 - CONSUMER PRICE INDEX DATA AS OF FEBRUARY 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	3.3	3.6	3.0	2.7	0.6	100.00
	15.2	20.1	8.8	6.3	-13.4	8.69
All Items Ex Energy						
Food	2.3	2.2	2.4	2.4	2.4	13.94
Food Away From Home	2.7	2.8	2.8	2.7	1.2	5.95
	3.1	3.0	3.1	3.3	3.7	
All Items Ex Food and Energy	2.2	2.1	2.3	2.0	1.8	77.37
Core Chain-Weight CPI (NSA)	2.0	1.8	2.7	2.5	5.5	100.00
Core Goods						
Apparel	0.4	0.0	0.1	0.3	-1.7	22.32
Medical Care Commodities	-0.8	-1.8	-2.5	-3.6	-11.4	3.79
Durable Goods	4.2	4.1	4.5	3.3	6.0	1.46
New Vehicles	0.0	-0.7	-0.3	-0.3	-1.0	11.58
Used Vehicles	0.4	-0.4	3.0	2.1	0.9	5.16
	3.2	1.4	-3.5	0.3	1.7	1.80
Core Services						
Rent of Primary Residence	2.9	2.9	3.2	3.0	4.1	55.06
Owners' Equivalent Rent	3.0	3.1	3.0	2.8	3.9	5.83
Lodging Away from Home	2.5	2.5	2.7	3.1	3.7	23.44
Medical Care Services	5.5	3.5	7.2	7.5	7.4	2.61
Transportation Services	4.6	4.1	4.4	3.1	6.5	4.76
	2.2	2.9	1.7	1.2	-0.5	5.71

A. Forecast Details

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

	Annualized Percent Change Over Indicated Interval				
	24 Month	12 Month	6 Month	3 Month	1 Month
PCE Deflator	2.9	3.1	3.2	0.3	6.0
Market Based PCE Deflator	2.8	3.1	3.2	-0.2	6.1
Durable Goods	-0.7	-1.3	-0.8	-0.9	0.9
Motor Vehicles and Parts	1.7	0.7	2.1	2.9	5.4
Nondurable Goods	3.7	4.3	3.7	-4.7	12.1
Clothing and Shoes	-0.7	-1.3	0.7	0.1	1.8
Services	3.2	3.3	3.8	3.1	4.0
Housing	2.6	2.7	2.5	3.0	2.5
Transportation	3.0	4.0	2.3	2.8	1.1
Medical Care	2.8	2.3	2.5	2.0	0.3
PCE Deflator Ex Food and Energy	2.0	1.8	2.0	1.9	1.9
Market Based Core PCE Deflator	1.6	1.5	1.7	1.7	1.2
Personal Business Services-Market Based	3.0	2.7	2.7	3.3	2.1
Personal Business Services-Not Market Based	2.8	2.4	2.2	1.9	2.7

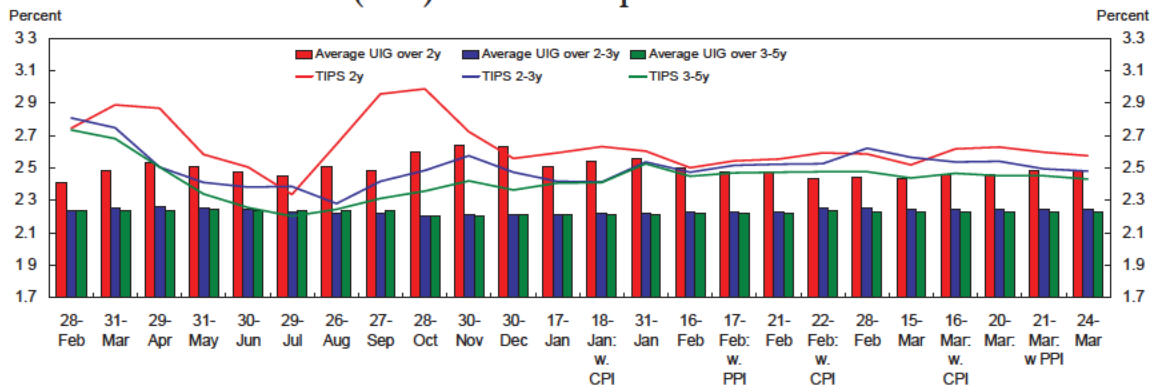
A. Forecast Details

Exhibit A-6: Reference Table 3 - PRODUCER PRICE DATA AS OF FEBRUARY 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	4.2	3.8	2.6	-2.0	-15.3
Nondurables Ex Food	4.9	4.5	2.9	-3.4	-20.2
Durables	6.2	6.8	4.0	-2.1	-17.5
Capital Equipment	8.2	9.4	5.4	-4.1	-23.8
Electronic Computers (NSA)	1.3	0.4	0.4	3.0	0.9
Communication and Related Equipment (NSA)	2.1	1.5	1.2	2.5	1.7
	-19.4	-22.6	-23.0	-26.7	-35.3
	-0.5	-0.2	-0.2	2.0	0.0
Finished Goods Ex Food and Energy	2.2	1.7	1.7	3.1	3.1
Finished Consumer Goods Ex Food and Energy	2.2	1.8	1.7	3.2	2.9
Intermediate Materials					
Intermediate Materials Ex Food and Energy	8.3	8.2	10.3	4.1	-3.6
	6.4	4.8	9.3	7.6	6.2
Crude Materials					
Crude Materials Ex Food and Energy	10.6	12.8	2.6	-39.3	-68.6
	8.6	11.9	24.5	15.5	48.3

A. Forecast Details

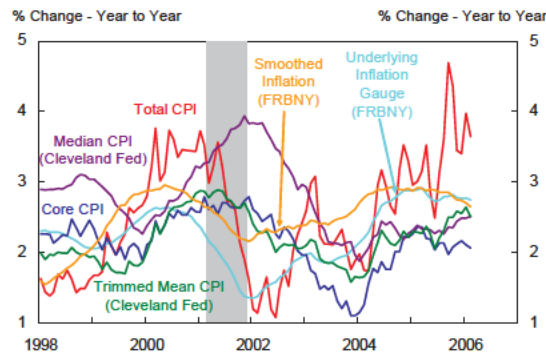
Exhibit A-7: Underlying Inflation Gauge (UIG) and TIPS Implied Inflation



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

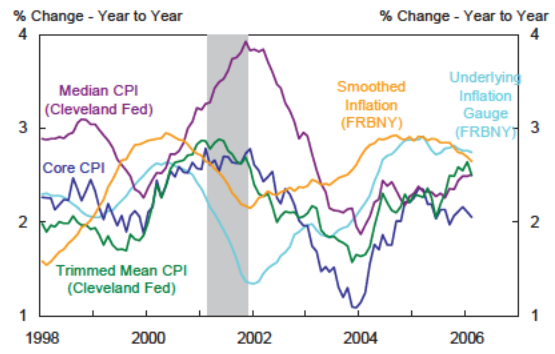
Exhibit A-8: Underlying Measures of Trend Inflation

Measures of CPI Inflation



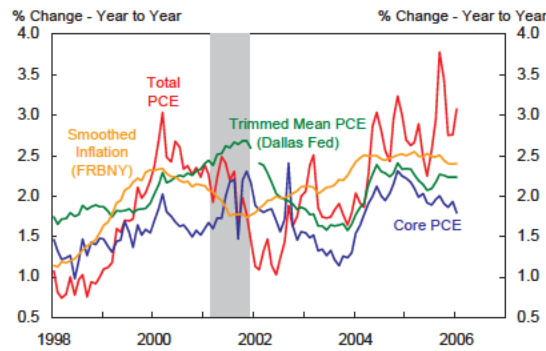
Source: Bureau of Labor Statistics, Cleveland Fed, and FRBNY

Measures of CPI Inflation



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

Measures of PCE Inflation



Source: Bureau of Economic Analysis and Dallas Fed

B. Financial Markets

Exhibit B-1. TIPS Implied Inflation at Various Horizons

The first chart in this exhibit displays the time series of implied expected CPI inflation from the TIPS market (a non-technical description of the construction of this measure is in Appendix to Exhibit B-1 below). The second chart shows the computed change in carry-adjusted measures from January 30th to March 23rd.

Source: Capital Markets Function, FRBNY

Exhibit B-2. Breakeven Inflation Table

The breakeven inflation table reports yields on the most recently issued five- and ten-year nominal Treasury securities and Treasury inflation indexed securities as well as the spreads between comparable maturities.

Source: Capital Markets Function, FRBNY

Exhibit B-3. Smoothed Treasury Yield Curve and Implied Forward Rate Curve

The five charts in this exhibit are: (1) the path of the 3-month and 10-year Treasury rates since March 2003; (2) the smoothed (off-the-run) Treasury yield curve on December 12 (prior to the December FOMC meeting), January 30 (prior to the January FOMC meeting), and March 24 (current); (3) the implied forward rate curve for the same three dates; (4) the path of the implied 4-5 year nominal and real forward rate since March 2004; and (5) the path of the implied 4-5 nominal forward rate and inflation compensation since March 2004.

Source: Capital Markets Function, FRBNY; Monetary Affairs, BofG

Exhibit B-4. Expected Path of Fed Funds Target Rate Derived from Futures

The chart in this exhibit shows the changes in expected path of the Fed Funds target rate since the last FOMC meeting, derived from Fed Funds and Eurodollar futures. A constant term premium risk adjustment is made in these calculations but there is no allowance for time-varying risk.

Source: MMS Function, FRBNY chart; Monetary Affairs, BofG data

Exhibit B-5. Implied Skewness and Implied Volatility (percentages)

The chart in this exhibit shows the recent behavior of a measure of implied skewness derived from Eurodollar options. Positive (negative) implied skewness means that a tightening (easing) surprise around expected rate is expected to be larger than an easing (tightening) surprise. In addition, implied volatility in percentages is plotted. Both measures are averages of 3-, 6- and 9-month values. No risk adjustment is made.

Source: Capital Markets Function, FRBNY

Exhibit B-6. Implied Volatility on Eurodollar Options (Basis Points)

The charts in this exhibit show the current and historical behavior of the 90% confidence interval (i.e., financial markets expect 90% of the time the actual FFR at the specified date will be within the interval) for the Fed Funds Target implied from financial markets options. The first two charts show how the 90% confidence interval has changed since the last FOMC meeting. The next chart shows the current confidence interval around the expected path. The final two charts show a long history of the behavior of the confidence interval at the 6- and 12-month horizons. No risk adjustment is made.

Source: Monetary Affairs, BofG

Exhibit B-7. Dollar Exchange Rates

This exhibit contains four charts showing the behavior of the dollar in the last five years. All series are defined so that a decline in the index represents a depreciation of the dollar. Effective rates are computed by the Board of Governors using a “narrow” set of weights, for 16 major exchange rates.

Source: BofG; BIS; International Research Function, FRBNY

Exhibit B-8. Implied Volatility on Yen/Dollar and Euro/Dollar Exchange Rates

The first set of charts in this exhibit contains the one month ahead implied volatility on Yen/Dollar and Euro/Dollar exchange rates as measured by the width of a 90 percent confidence interval. The second set of charts show the change in the expected implied volatility over the next six months.

Source: Markets Group, FRBNY; Reuters

Exhibit B-9. Energy Futures Curves

This exhibit contains charts showing futures curves for gasoline, heating oil, natural gas, and crude oil. August 26 represents the state of the futures markets just before Hurricane Katrina. December 7 represents the state of the markets prior to the December FOMC meeting, January 27 represents the state prior to the January FOMC meeting, and March 23 represents current data.

Source: Bloomberg.

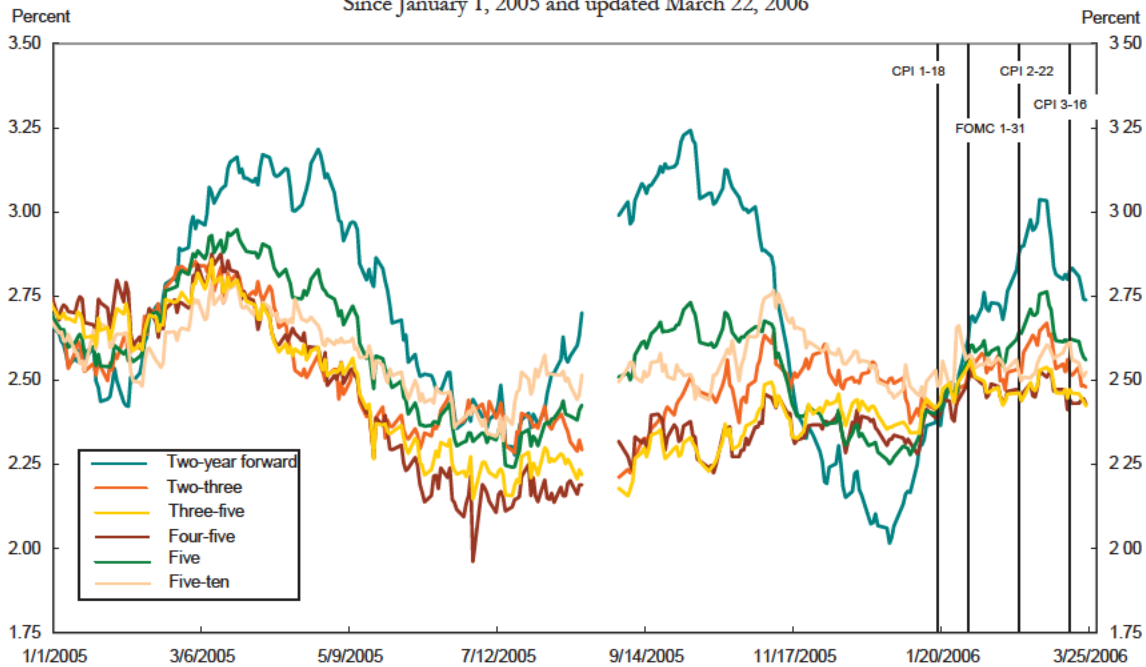
Appendix to Exhibit B-1. Construction of Implied Inflation from TIPS

The implied inflation series are estimates of the inflation expectations derived from TIPS and nominal Treasury securities, not accounting for risk premia or other technical factors. They differ from the simpler breakeven inflation rates which just subtract the real yield on TIPS securities from the on-the-run treasury yield with 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 Treasury securities. We then calculate two-, three-, and five-year inflation rates as the inflation rate corresponding to a TIPS with duration of two, three or five years respectively. Finally, we compute approximate forward rates from the rates at the shorter- and longer-dated durations. For example, the two-to-three year forward rate is computed from the two-year and three-year implied inflation values. The five-to-ten year forward rate uses the five-year implied inflation value and the implied inflation rate on the most recently issued ten-year TIPS.

The carry-adjusted implied inflation series are measures of inflation expectations that remove the impact of forecast inflation accrual in NSA CPI over the 2.5 month indexation lag period in TIPS. Since inflation over that 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 NSA CPI implicit in same day CME CPI futures contracts.

B. Financial Markets

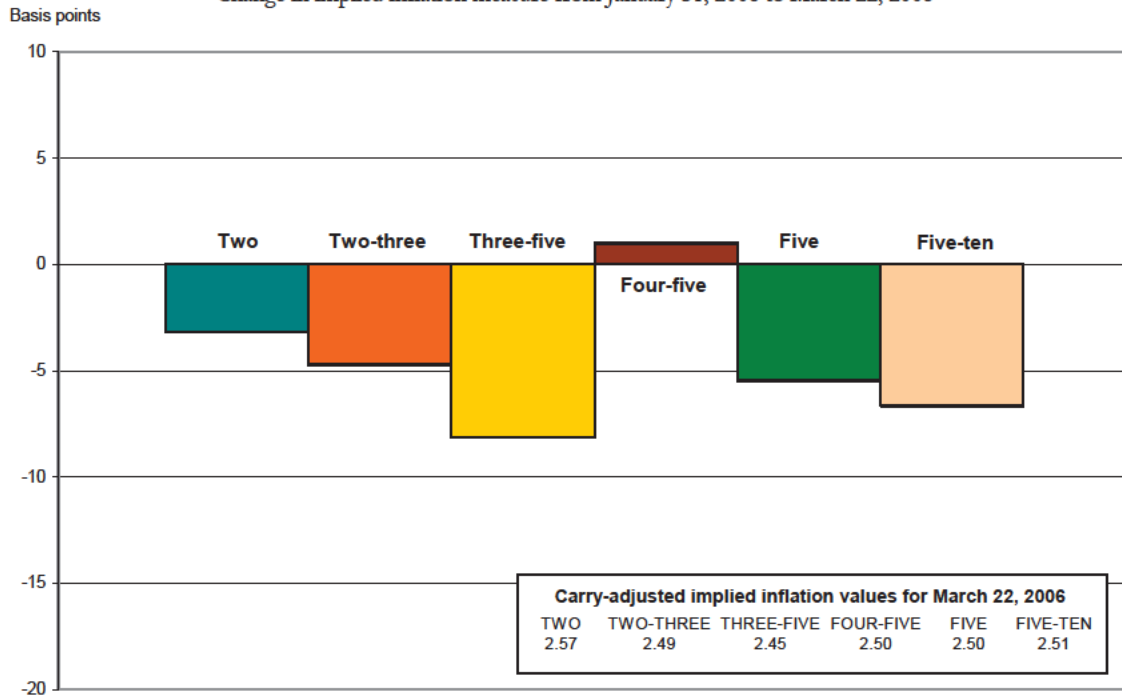
**Exhibit B-1:
TIPS Implied Inflation at Various Horizons**
Since January 1, 2005 and updated March 22, 2006



Implied inflation values between 8-18 and 8-31 are not reported because of data reliability problems.
Data based on FRBNY calculations using 8:40am quotes. Tony Rodrigues [Redacted]

Change in Carry-adjusted TIPS Implied Inflation Since Last FOMC Meeting

Change in implied inflation measure from January 31, 2006 to March 22, 2006



Source: FRBNY

B. Financial Markets

Exhibit B-2: Breakeven Inflation Table

Real and Nominal Yield Spreads

	31-Jan-05	31-Aug-05	30-Sep-05	31-Oct-05	30-Nov-05	30-Dec-05	31-Jan-06	28-Feb-06	23-Mar-06
Five-year Spread (%)	2.55	2.47	2.72	2.65	2.37	2.23	2.52	2.68	2.55
Ten-year Spread	2.48	2.38	2.55	2.57	2.37	2.31	2.51	2.54	2.48
Five-year Real Yield (%)	1.17	1.47	1.43	1.81	2.01	2.08	1.94	1.95	2.12
Ten-year Real Yield	1.67	1.69	1.74	2.01	2.09	2.04	2.03	2.03	2.21
Five-year Nominal Yield	3.72	3.94	4.15	4.46	4.38	4.31	4.46	4.63	4.67
Ten-year Nominal Yield	4.15	4.07	4.29	4.58	4.46	4.35	4.54	4.57	4.69

Source: FRBNY. 8:40am quotes.

B. Financial Markets

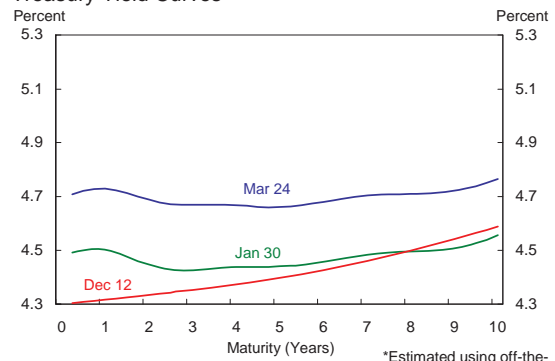
Exhibit B-3: Interest Rates

Short- and Long-Term Rates



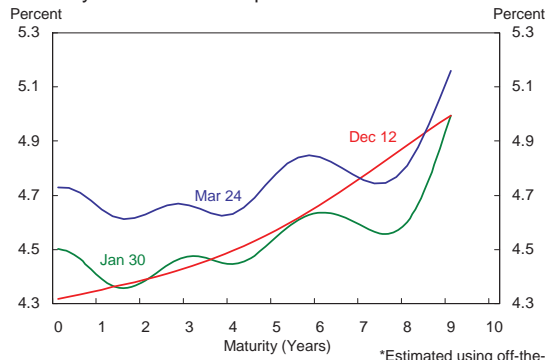
Source: Federal Reserve Board

Treasury Yield Curves*



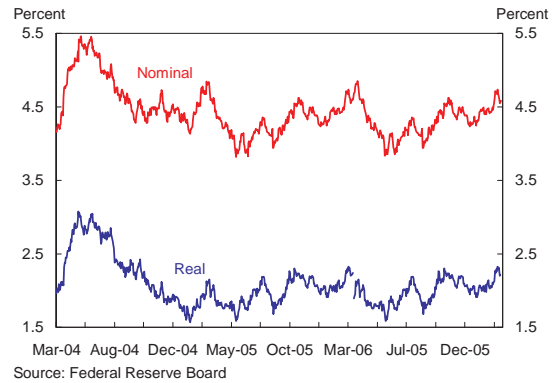
Source: 8:40AM quotes and FRBNY Calculations

Treasury Yield Curves: Implied One-Year Forward Rates



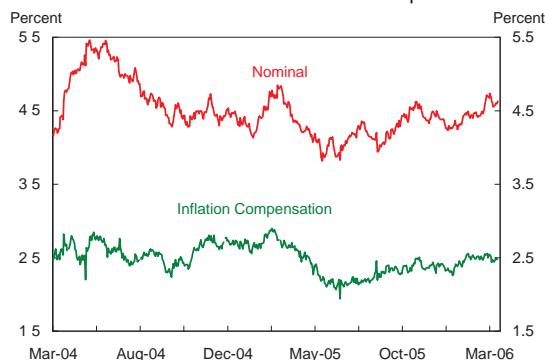
Source: 8:40AM quotes and FRBNY Calculations

4-5 Year Forward Rates



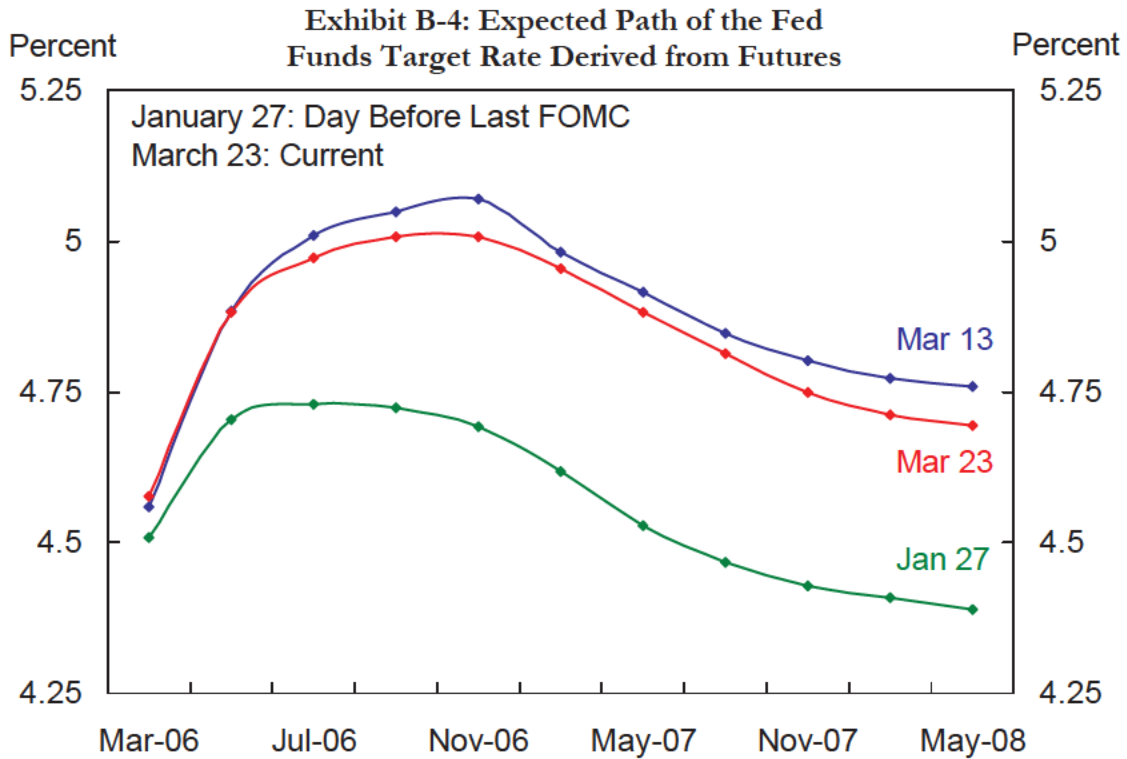
Source: Federal Reserve Board

4-5 Year Forward Rates and Inflation Compensation

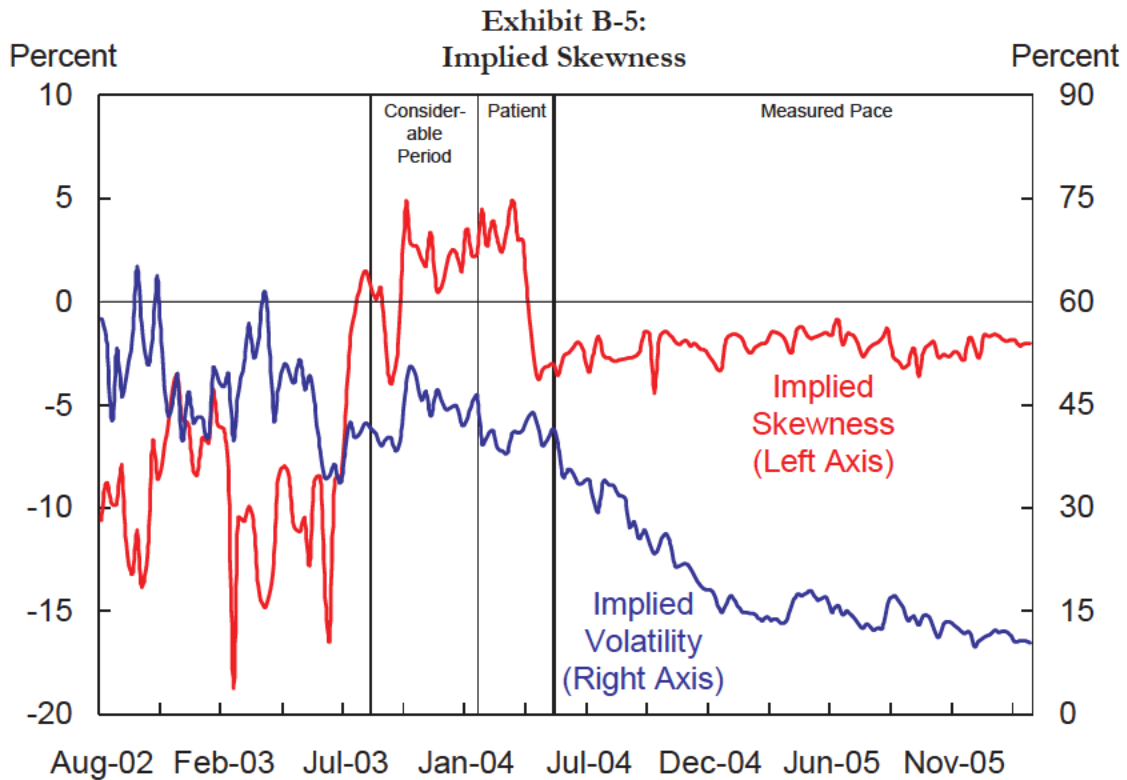


Source: Federal Reserve Board and FRBNY Calculations

B. Financial Markets



Source: Federal Reserve Board



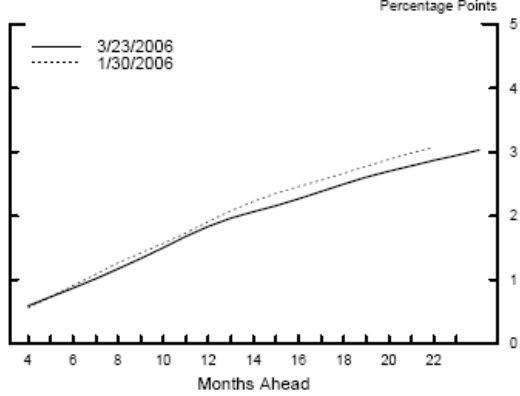
Source: CME and Author's Calculations

Joshua Rosenberg Redacted

B. Financial Markets

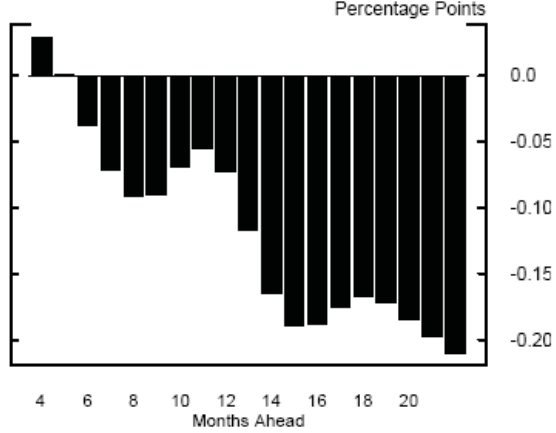
Exhibit B-6: Implied Volatility on Fed Funds Options

Eurodollar Implied Volatility Term Structure*

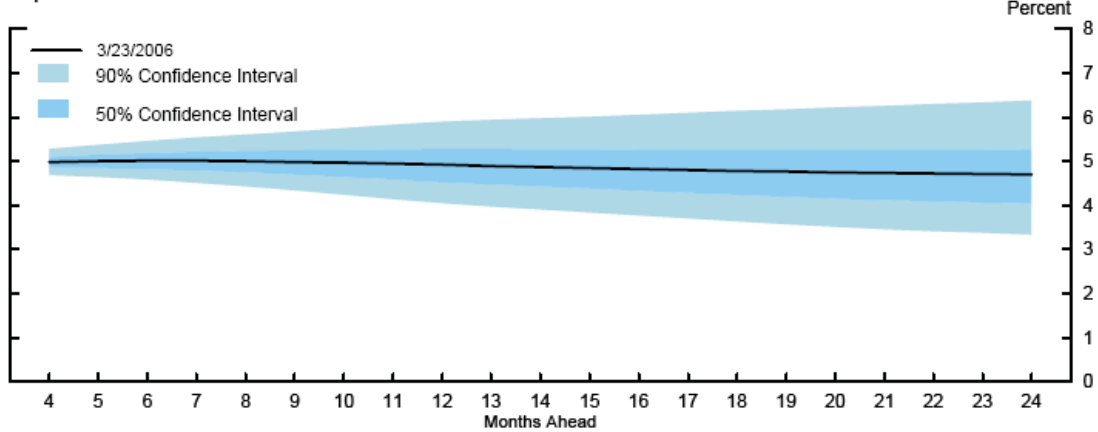


*Width of a 90 percent confidence interval computed from the term structures for the expected federal funds rate and implied volatility.

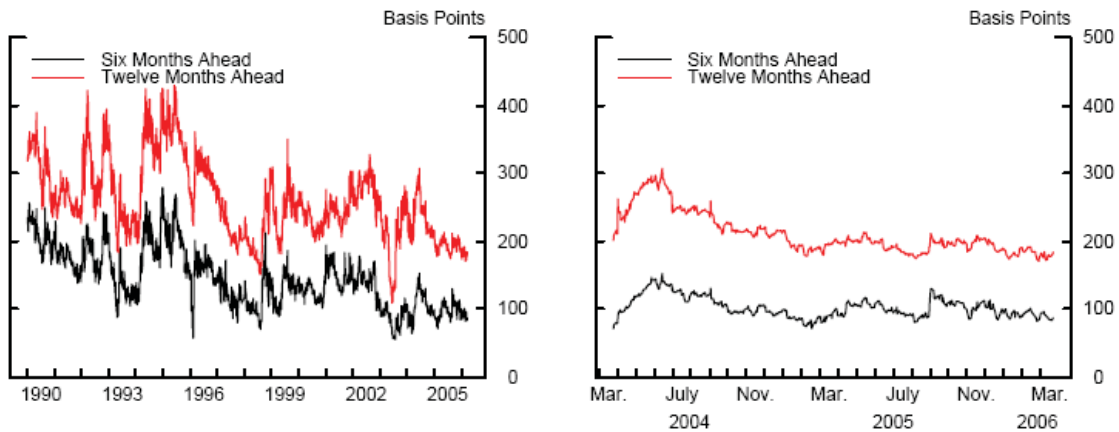
Change Since Day Before FOMC Meeting



Expected Federal Funds Rate Path and Confidence Intervals



Eurodollar Implied Volatility at Selected Maturities*

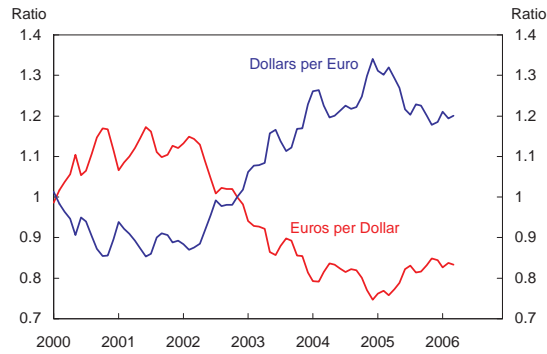


*Width of a 90 percent confidence interval computed from the term structures for the expected federal funds rate and implied volatility.

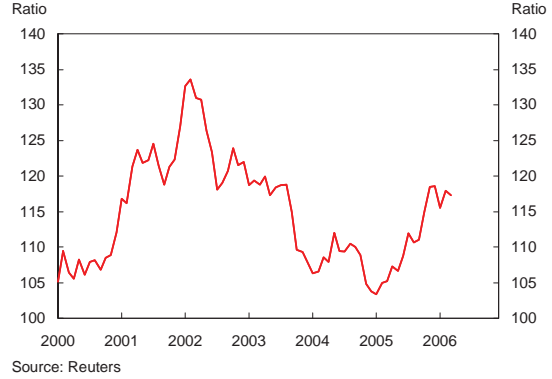
B. Financial Markets

Exhibit B-7: United States Exchange Rates

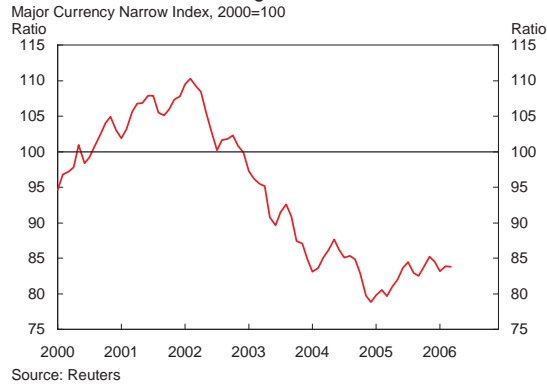
Dollar-Euro Exchange Rates



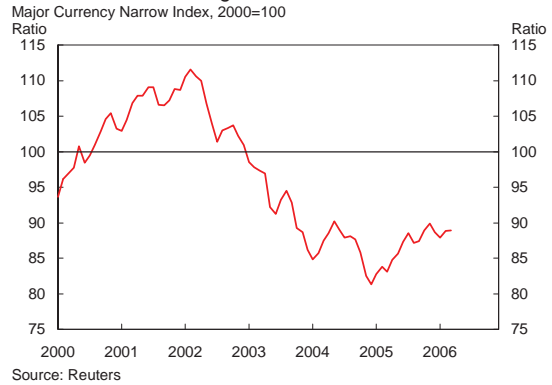
Yen per Dollar



Nominal Effective Exchange Rate



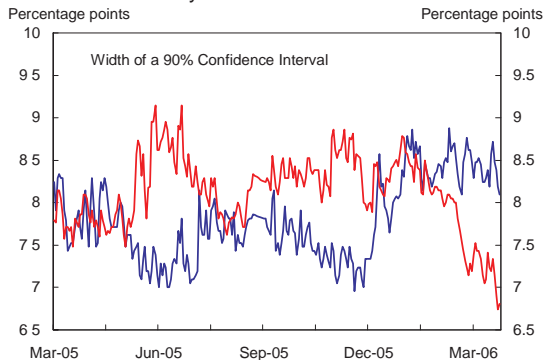
Real Effective Exchange Rate



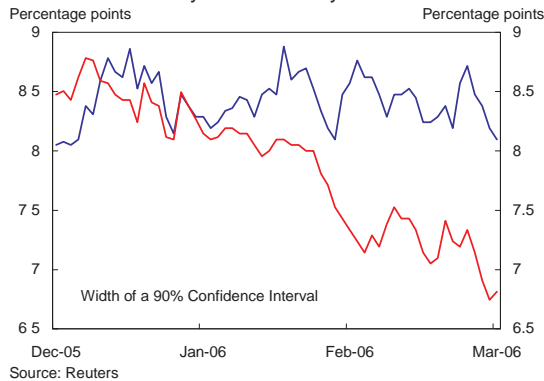
B. Financial Markets

Exhibit B-8:
Euro and Yen Implied Option Volatility
Euro options are in red and Yen options are in blue

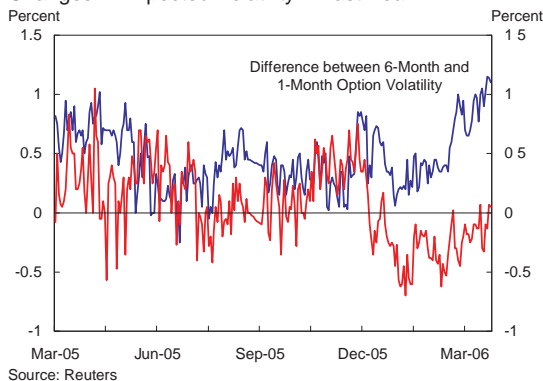
One-Month Volatility – Past Year



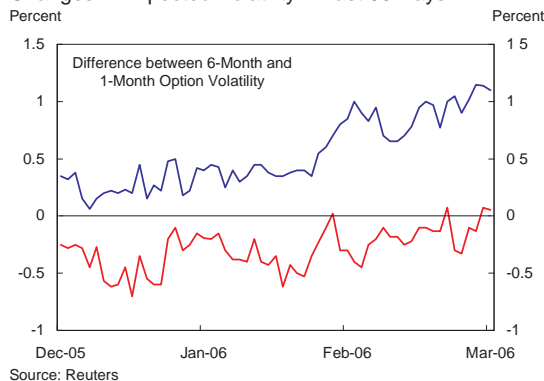
One-Month Volatility – Past 60 Days



Changes in Expected Volatility – Past Year



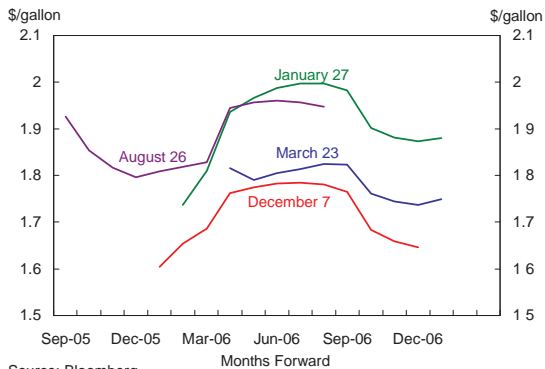
Changes in Expected Volatility – Past 60 Days



B. Financial Markets

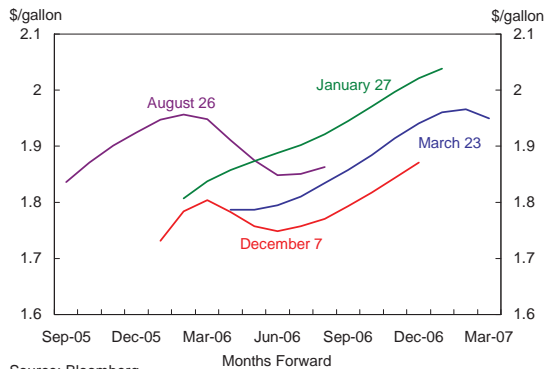
Exhibit B-9: Energy Futures Curves

Gasoline Futures



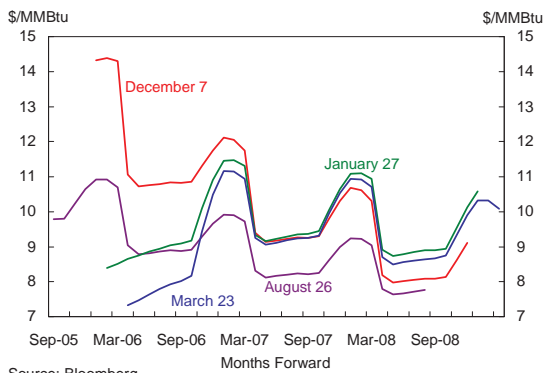
Source: Bloomberg

Heating Oil Futures



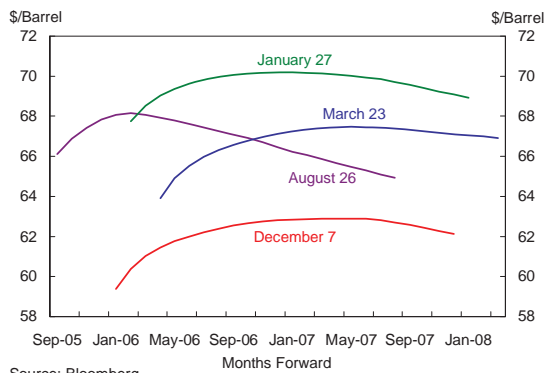
Source: Bloomberg

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. Instead of providing a static assessment of the risks we use a dynamic one that allows the probability of a deviation to build over time. After a deviation, it is assumed that the economy returns to its average long run behavior centered at the implicit inflation target and potential growth. 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 types of measures of the balance of risks are shown. One type indicates the probability of being in a particular scenario at a specific date. These scenarios are mutually exclusive so at any specific date they add up to one.

A second type calculates the probability of being in a particular scenario at any time through 2008. The one exception is for the central scenario, where the probability shown is for not deviating from this scenario at any time through 2008. Hence, one minus this latter probability is the risk of deviating from the central scenario at some point over the forecast horizon and this is equal to the sum of the probabilities of the other scenarios occurring.

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 (calculated by averaging all paths that have at least one quarter in that scenario) of four-quarter changes in the core PCE deflator and real GDP under the central scenario and the alternative scenarios.

The global deflation scenario assumes that output growth is slower than the central scenario and inflation is dramatically lower. The overheating scenario assumes that for two quarters the economy grows quicker than expected under the central scenario, with both inflation and output higher than our central forecast. Then the real economy slows dramatically but inflation continues to be above the central forecast.

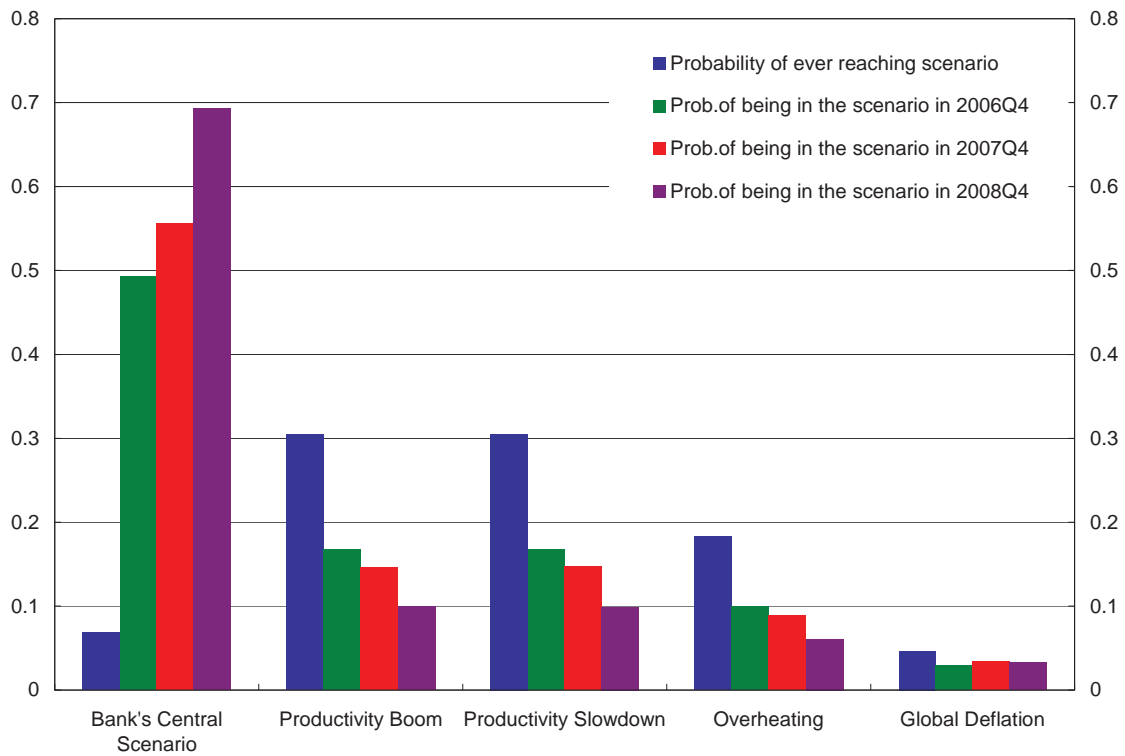
Exhibit C-4 & C-5: Fan Charts

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 was true. The amount of total uncertainty in the forecast distributions is now 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 is included in the fan chart. These expected values are computed as averages over the realizations across all possible scenarios considered in Exhibit C-1. The difference between this profile and the central bank scenario 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

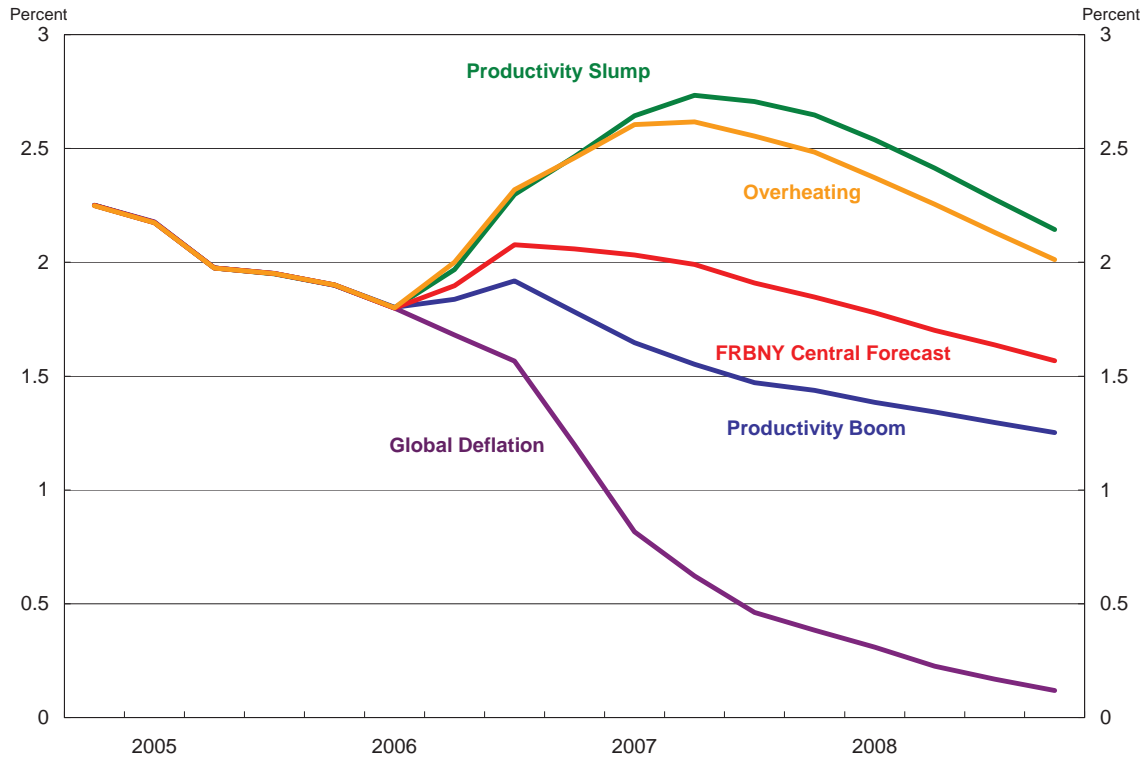
C. FRBNY Forecast Distributions

Exhibit C-1:
Risks

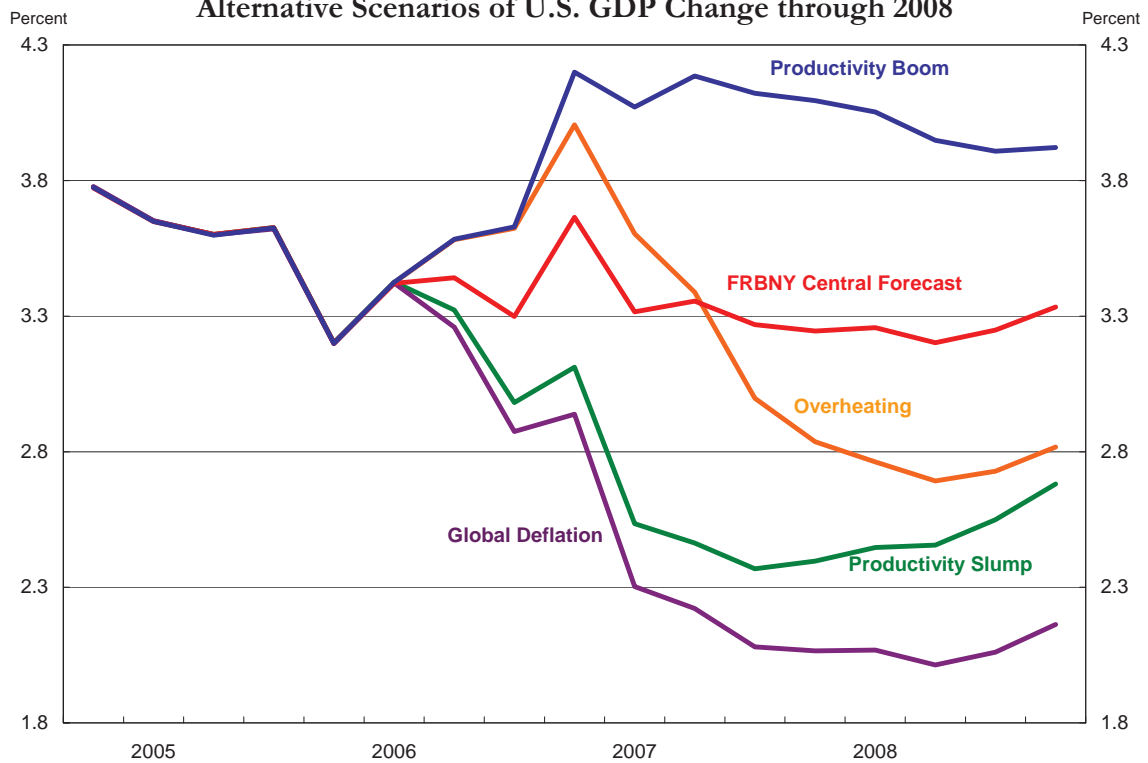


C. FRBNY Forecast Distributions

**Exhibit C-2:
Alternative Scenarios of U.S. Core PCE Inflation Change through 2008**

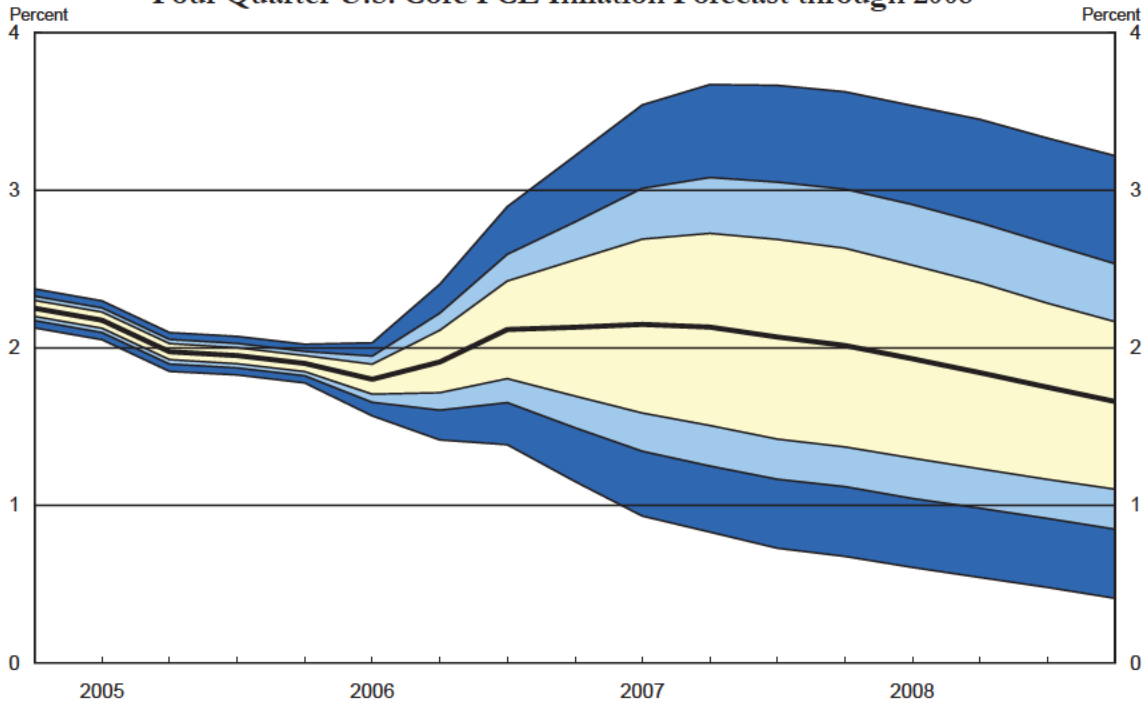


**Exhibit C-3:
Alternative Scenarios of U.S. GDP Change through 2008**



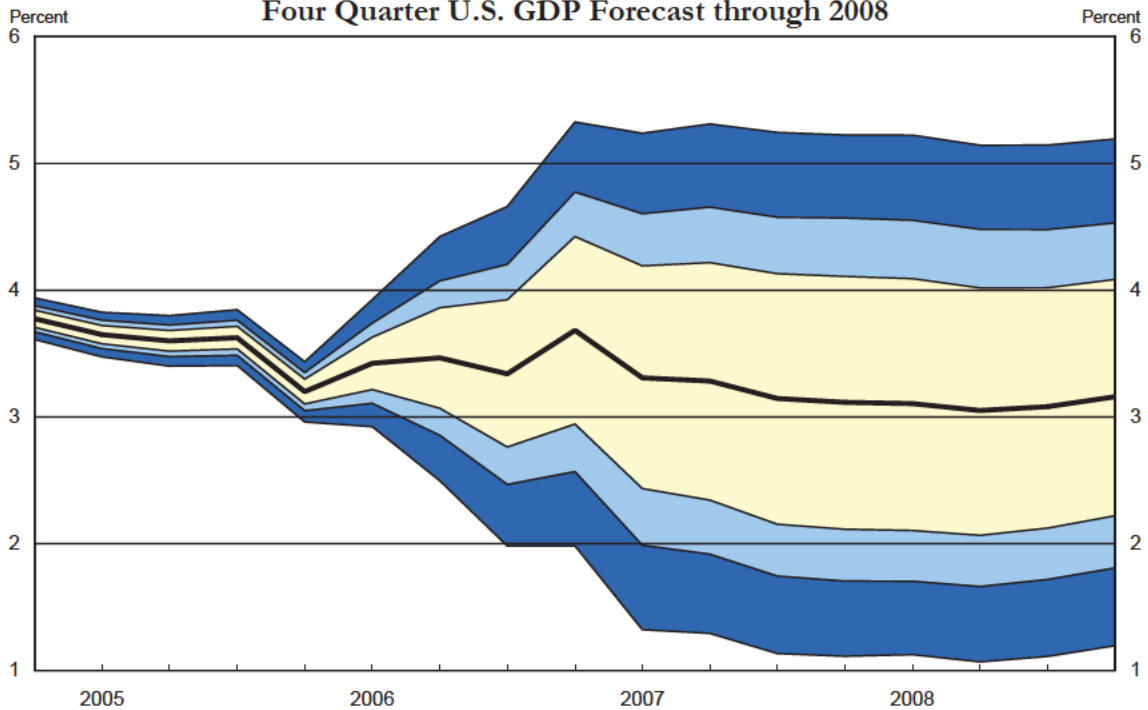
C. FRBNY Forecast Distributions

**Exhibit C-4:
Four Quarter U.S. Core PCE Inflation Forecast through 2008**



The probability interval shows the 50, 75, and 90 percent chance that the four quarter change in Core PCE will be within the respective range. The thick black line represents the expected value of the forecast.

**Exhibit C-5:
Four Quarter U.S. GDP Forecast through 2008**



The probability interval shows the 50, 75, and 90 percent chance that quarterly GDP change will be within the respective range. The thick black line represents the expected value of the forecast.

D. FRBNY Fed Funds Rate Projections

The exhibits in this section are constructed using the policy rules given below, 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 amount of uncertainty.

We consider 3 different short-run restrictions to our standard policy rule in this cycle.

1. *Dove*
2. *Dual*
3. *Inflation Hawk*

The short-run restriction is enforced in the rules by calculating the FFR without restriction from our standard policy rule described below. Then this value is compared to the prescription of the different short-run rules. If the results are “similar” then the prescription of the short-run rule is followed. For example, under “dual” the FFR is increased by increments of 25 bp and 12.5 bp for the next two meetings respectively unless the standard rule produces a prescription for the FFR outside of the interval 1% around the measured firming rate. The inflation hawk rule follows the prescription of the continued measured firming unless the inflation rate increases above a 2% rate.

Exhibit D-1: Implications of Different Policy Rules for Nominal Fed Funds Rate

Exhibit D-1 evaluates the three different policy rules at each of the draws from the forecast distribution of output and inflation and then averages them to produce an expected path if the rule is followed. The results are compared to the most recent implied market path from Exhibit B-5.

Exhibit D-2 & D-3: Alternative Forecast Scenarios: Nominal and Real Federal Funds Rate

In these exhibits, we focus on the policy rule “dual” and evaluate it at the Bank’s central projection, productivity slowdown and boom, overheating and global deflation scenarios.

Exhibit D-3 presents the average of FFR over paths containing these scenarios. Exhibit D-4 presents the average ex post real rate obtained by subtracting the four-quarter lagged change of core PCE inflation from the paths of the nominal rate.

Exhibit D-4: Implications of 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. The policy rule paths are calculated using the actual FFR at the end of 2004. It also plots an average over the three rules evaluated this cycle, with weights of 0.5, 0.4 and 0.1 respectively.

Exhibit D-5: FFR Distributions

In this exhibit we examine the distribution of the FFR under the three different policy rules through the first 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 Exhibit B-6. The distribution is represented by a boxplot to this allow more direct comparison of the implications of different policy rules. The box represents the 50% probability interval, the line in the box the median and the tails the 90% probability interval.

Source: MMS Function, FRBNY

Exhibit D-6: Comparing Market Beliefs to FRBNY

In this exhibit, two metrics of measuring the distance between the market-implied path and the FRBNY implied path are shown:

1. The percentile of the market distribution of the prediction from our policy rule.
2. The percentile of our policy rule distribution of the expected path priced into markets.

There are many other sources of 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 but there is some evidence that the adjustment may be time varying. Furthermore, the market faces uncertainty over the policies and targets used by the FOMC. We can attempt to capture this uncertainty but again it might vary over time.

Source: MMS Function, FRBNY

Policy Rule: Baseline Specification

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

$$\rho = 0.8$$

$$i_{2005Q2} = 2.91$$

$$i^* = 4.0$$

$$\pi = 1.5 \text{ (Core PCE y/y)}$$

$$\pi^* = 1.5$$

$$\varphi_\pi = 1.5$$

$$\varphi_x = 0.5$$

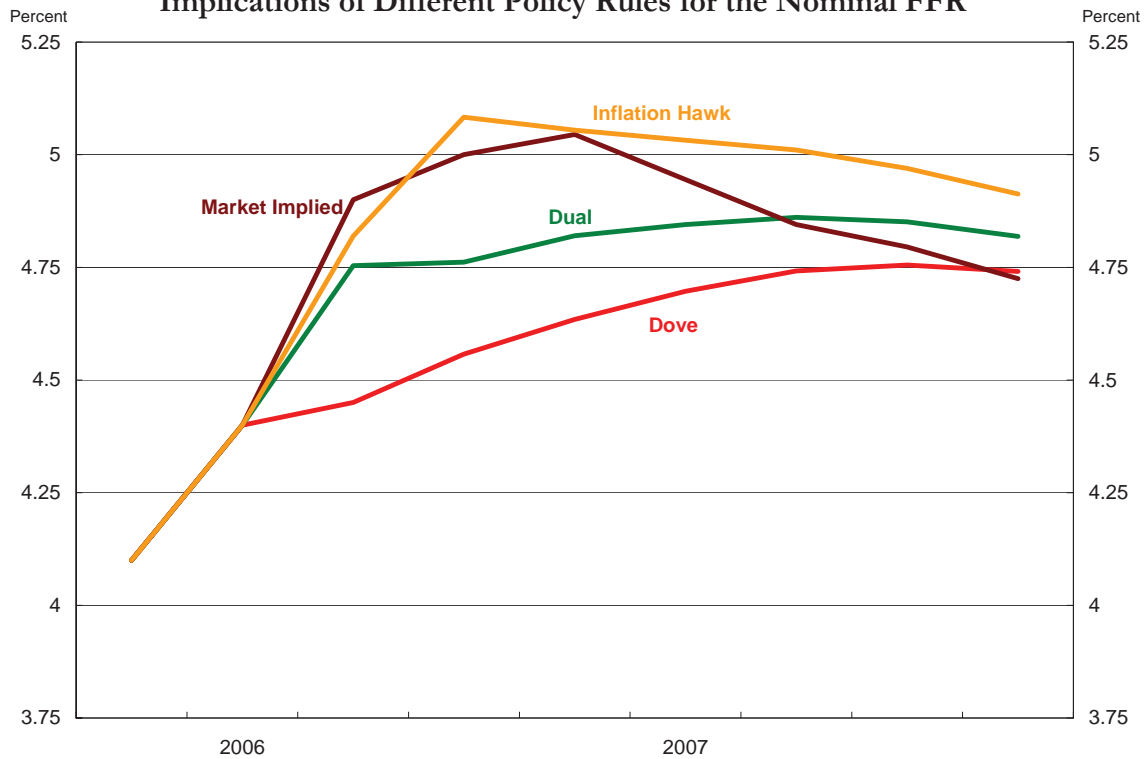
$$\pi_t : \text{Core PCE y/y}$$

$$x_t : \text{Output Gap}$$

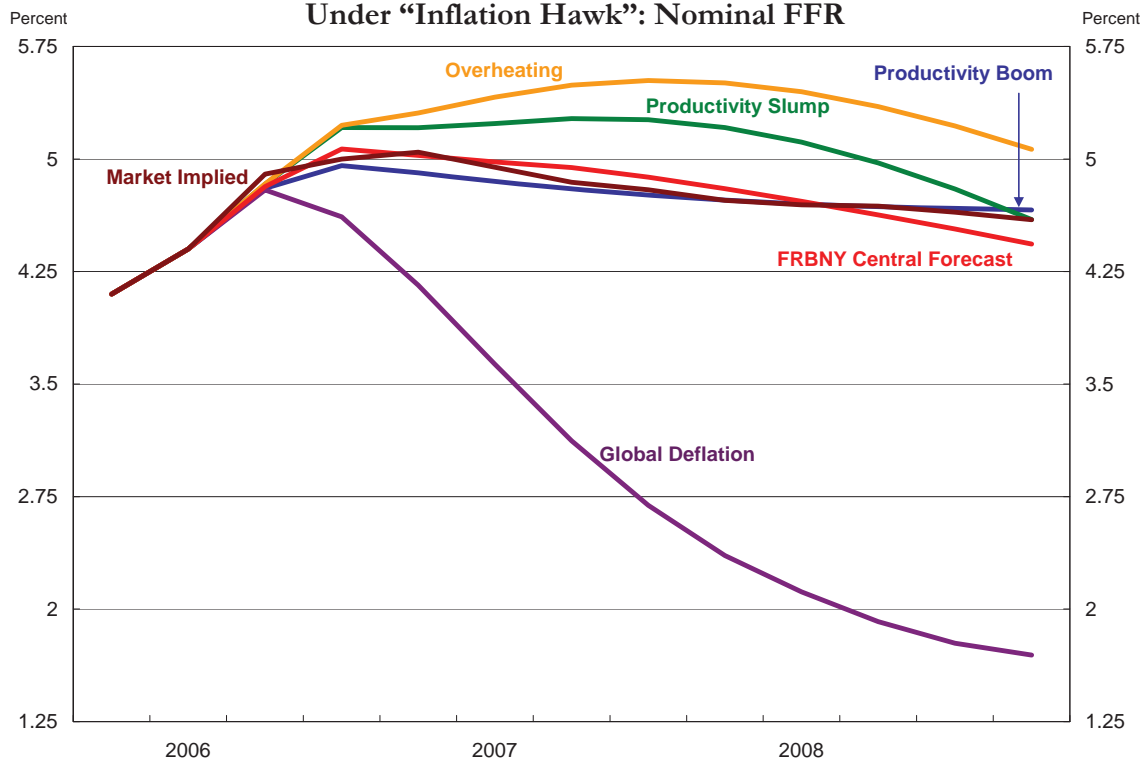
Source: MMS function, FRBNY

D. FRBNY Fed Funds Rate Projections

**Exhibit D-1:
Implications of Different Policy Rules for the Nominal FFR**

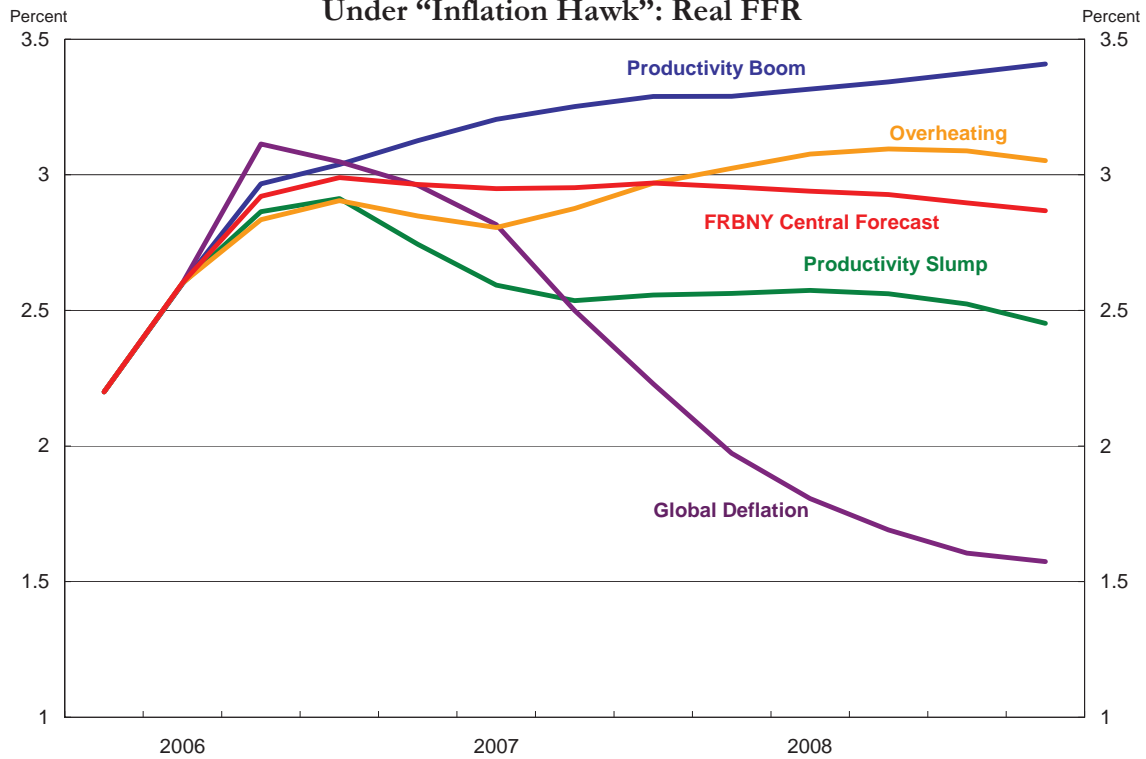


**Exhibit D-2:
Alternative Forecast Scenarios
Under “Inflation Hawk”: Nominal FFR**

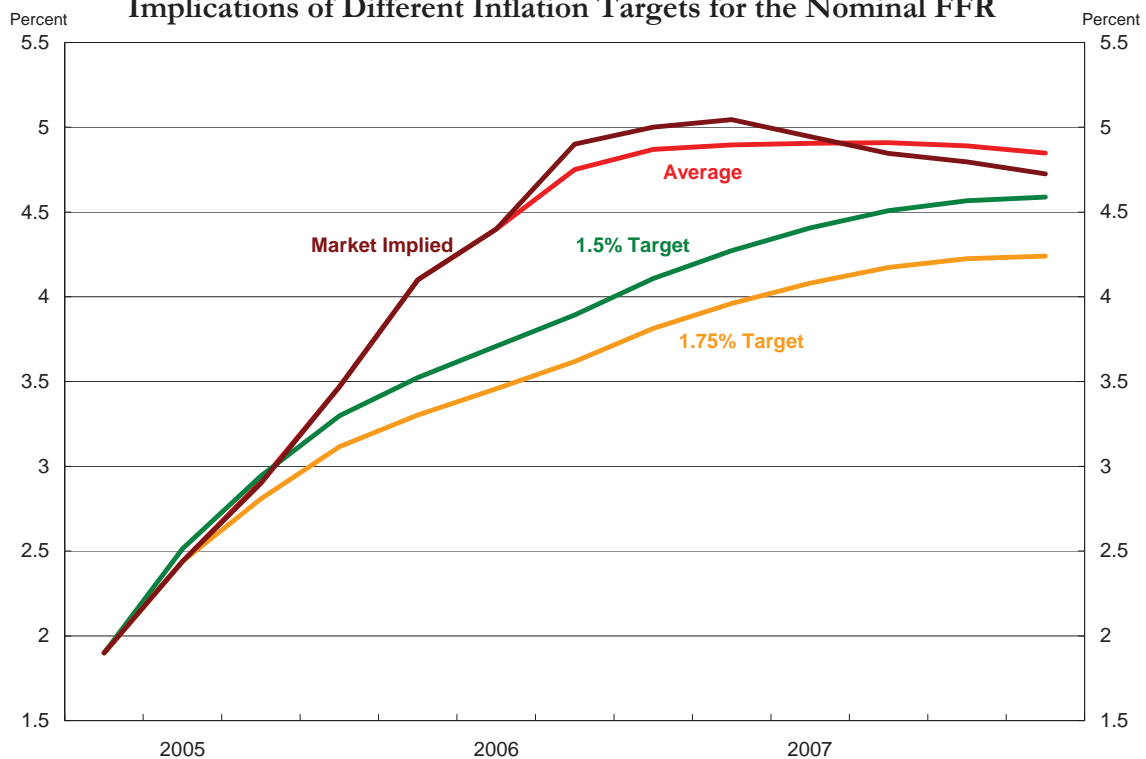


D. FRBNY Fed Funds Rate Projections

**Exhibit D-3:
Alternative Forecast Scenarios
Under "Inflation Hawk": Real FFR**



**Exhibit D-4:
Implications of Different Inflation Targets for the Nominal FFR**



D. FRBNY Fed Funds Rate Projections

Exhibit D-5: Fed Funds Rate Distributions

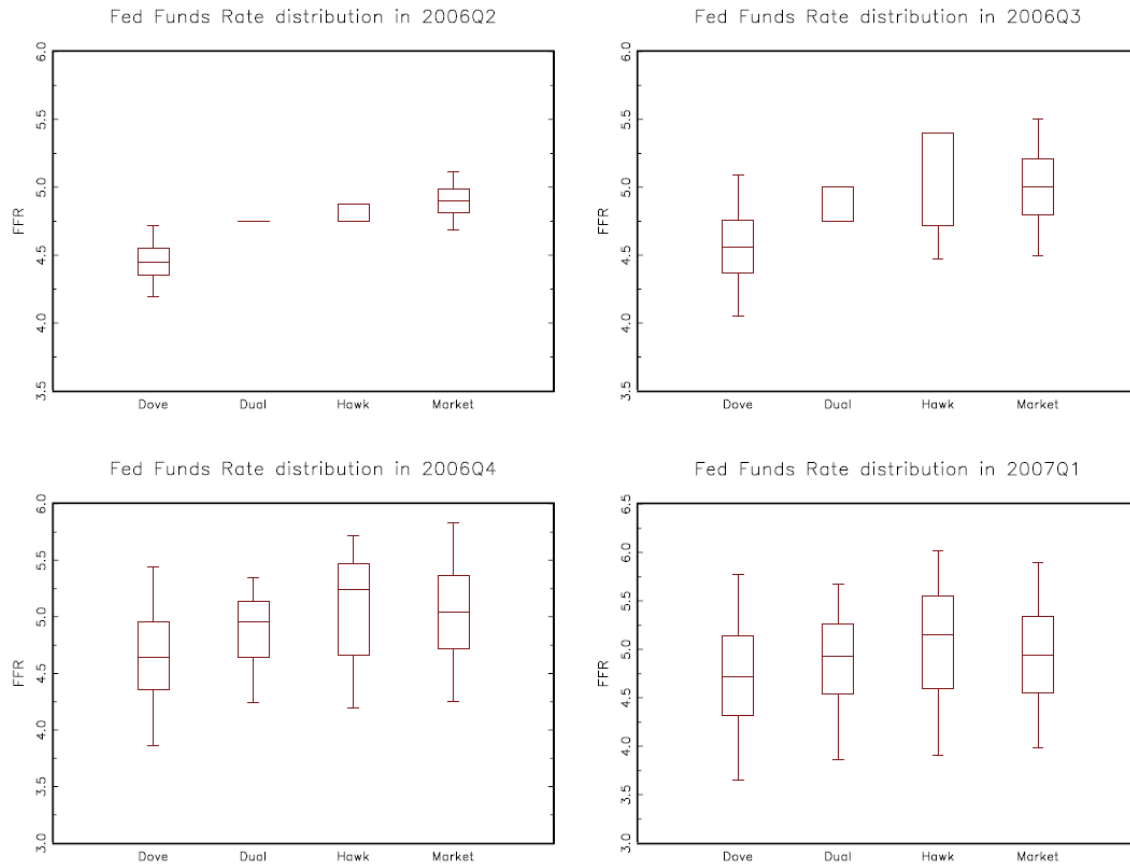


Exhibit D-6: Market Expectations of Future FFR and FRBNY Outlook for FFR

	Percentile of FRBNY Expectation in Market Distribution	Percentile of Market Expectation in FRBNY Distribution
<i>Dove</i>	14 (37)	80 (58)
<i>Dual</i>	32 (56)	62 (27)
<i>Inflation Hawk</i>	51 (77)	42 (27)
<i>Average</i>	38	54

Note: "Average" weights dove at .1, dual at .5, and hawk at .4.
Values in parentheses are prior values from January Blackbook.

E. Regional Charts

Exhibit E-1. Federal Reserve Bank of New York's Indexes of Coincident Economic Indicators

The chart in this exhibit shows our monthly coincident indexes for New York, New Jersey, and New York City through January 2006. The indexes 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. Federal Reserve Bank of New York's Indexes of Leading Economic Indicators

This chart shows the growth in our monthly leading indexes for New York, New Jersey, and New York City through January 2006. 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 indexes differ slightly, but include: housing permits, stock prices, the national leading index, 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 in the 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.

Underlying data can be found at:

<http://stats.bls.gov/news.release/laus.t06.htm> and
<http://stats.bls.gov/news.release/metro.t02.htm>

Source: U.S. Bureau of Labor Statistics

Exhibit E-4. Unemployment Rates

This chart shows the monthly unemployment rate for New York State, New Jersey, New York City, and the U.S. from 1992 to present.

Source: U.S. Bureau of Labor Statistics, New York State Dept. of Labor and the New Jersey Department of Labor.

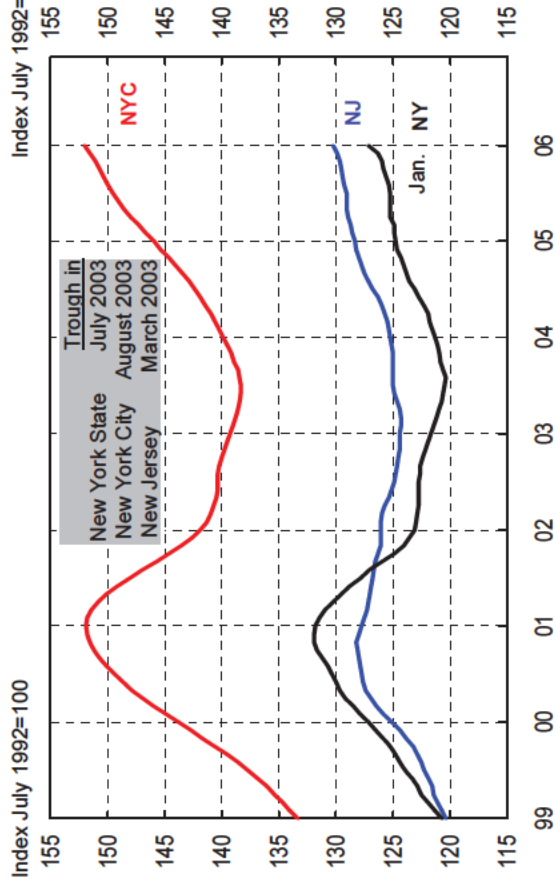
Data can be found at:

<http://www.labor.state.ny.us/agency/pressrel/pruistat.htm>

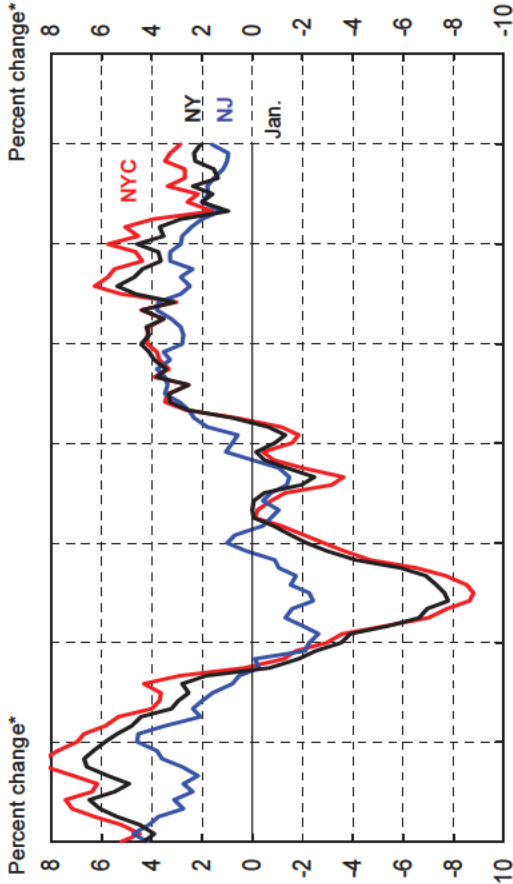
<http://www.wnjp.in.net/OneStopCareerCenter/LaborMarketInformation/lmi16/release1.htm>

E. Regional Charts

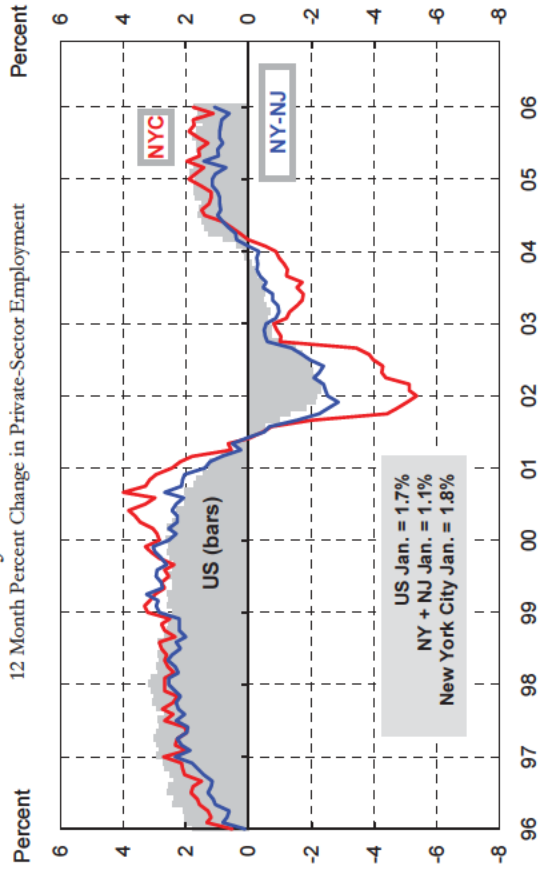
E1: INDEX OF COINCIDENT ECONOMIC INDICATORS



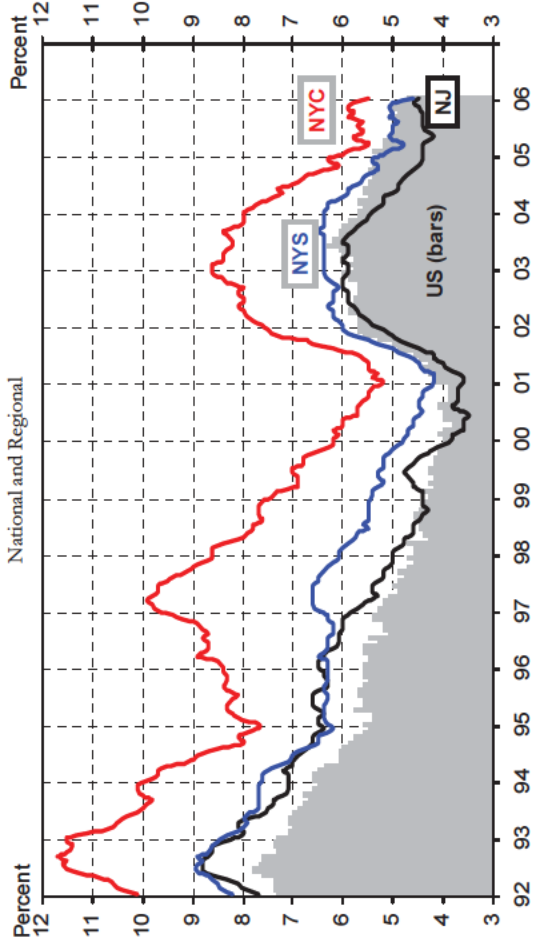
E2: INDEX OF LEADING ECONOMIC INDICATORS



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



E4: UNEMPLOYMENT RATES



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