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It is a pleasure to be with you today to discuss the economic outlook for 2006 and beyond. It is a pleasure, in part, because the economic outlook is fairly encouraging. Growth is on a solid footing, despite this year's run-up in energy prices and the disruptions of a devastating hurricane season. And after a brief pause this fall, employment is expanding again at a healthy pace, consumer spending continues to grow briskly, and business investment spending is robust. Granted, housing activity seems to be softening, and at least some potential price level pressures remain, so it may be too soon to break out the champagne. But inflation expectations remain contained, and we at the Fed are well-positioned to resist inflation pressures, should they emerge.

So all in all, it is quite a good outlook.

In my remarks today, I would like to review the economic outlook in a bit more detail, and then talk about monetary policy. As always, my remarks reflect my own views, and not necessarily those of my colleagues in the Federal Reserve.

The really striking feature of the current outlook is the extent to which economic activity in general and consumer spending in particular has rebounded from the shock of last year's hurricane season. In the immediate aftermath of Hurricane Katrina, fears were widespread that consumers might pull back sharply on spending, both in response to sharply higher retail gasoline prices and out of a general sense of heightened anxiety about potential fallout from the storm damage.

Survey measures of consumer confidence, which plummeted in September, seemed to bolster this view. But the effect of the storms on consumer outlays have turned out to be far more limited than expected, exemplifying the oft-cited resilience of the U.S. economy. Apart from auto sales, which slid following expiration of the summer's "employee discount" promotions, retail sales have held up fairly well and overall consumer spending has continued to advance. And on the whole, holiday spending came in stronger than many feared in the immediate aftermath of Hurricanes Katrina and Rita.

I would argue that this episode illustrates quite well how consumption expenditures are governed predominantly by households' assessment of their own future income prospects, rather than by any general economic nervousness, despite how they respond to telephone pollsters. With healthy income growth ahead and a reasonably strong overall job market, the outlook for consumer spending looks good. Housing market activity has been very strong over the last several years, and the historically low level of inflation-adjusted mortgage interest rates explains much of that strength. The fall in interest rates that began early in 2001 stimulated spending in interest-sensitive sectors like housing and durable goods and partially offset the then-emerging weakness in business investment spending. As the latter has recovered in the last two years, and real interest rates have had to rise as a consequence, a gradual "handoff" from housing investment has been expected.

That handoff has yet to occur; the ratio of business to residential investment outlays fell from around **2.75** in 2000 to about **1.75** last year, and has been fairly constant since then. Instead, the combination of low inflation-adjusted interest rates and sustained real income gains have continued to provide a strong stimulus to housing demand.

In recent months, we have received widespread anecdotal reports of what one informant of ours called "a return to normalcy" in several housing markets in our District. The multiple first-day bids and final sales at above-asking prices that were observed in some markets seem to have become less common. And in some markets, the amount of time a home stays on the market has returned to more typical levels.

At the same time, the aggregate measures of housing activity have so far shown only limited pull-back from their peaks and remain at historically high levels. The fact that housing market activity typically declines in the last few months of each year is making it difficult to collate quantitative and qualitative evidence and assess seasonally adjusted housing market trends. Still, mortgage rates are likely to stay somewhat above their recent lows in the coming year, so I would expect housing price appreciation to flatten out next year and aggregate residential investment to stop growing or perhaps even decline.

The fundamentals for business investment in equipment and software look quite sound. Business output is expanding steadily and real funding costs are relatively low, both because inflation-adjusted, risk-free rates have been low and because corporate risk spreads are relatively narrow.

Evidently, there has been a sufficient flow of opportunities to deploy new capital profitably. Business investment in equipment and software has grown at over **11** percent in real terms since the first quarter of 2003, and it appears poised to grow at rates almost that strong next year. Capital formation, particularly investment in information and communications technology (ICT), played an instrumental role in the widely noted surge in productivity growth that took place in the late 1990s. The fundamental driving force was the sustained and rapid fall in the relative prices of these technologies.

Although initial productivity growth figures for that period were revised downward in subsequent data releases, our best estimates now are that productivity accelerated significantly in the mid-1990s from the relatively stagnant pace of **1.5** percent seen over the previous 20 years to **2.6** percent over the second half of the 1990s.

Productivity has grown at surprisingly strong rates since then — **3.4** percent since the end of 2000 — despite significantly lower rates of capital formation. Productivity growth in the first half of this decade thus must be mainly attributable to gains in what economists call "total factor productivity" — that is, output growth in excess of *all* input growth through reorganization of the use of those inputs. At the risk of oversimplification, one could say that firms increased productivity in the 1990s by providing workers with better technology, but in this decade by restructuring business processes to better exploit the technology they had.

One interpretation of these two episodes is that ICT investment outlays yield both an initial productivity gain (which our standard methods attribute to capital deepening) and then further productivity gains down the road as business processes are steadily optimized for the new infrastructure.

One implication of this perspective on recent productivity trends is that the current expansion in business investment is laying a foundation for future growth in total factor productivity, and thus provides at least some grounds for optimism that productivity growth might come in at **2.5** percent or higher, rather than the long-run trend rate of **2.25** percent.

Unfortunately, empirical evidence on this is limited, and as always, forecasting productivity growth should be done with humility, given economists' notably poor track record in this area.

Gains in labor productivity, whether due to capital deepening or improved business processes, ultimately pass through to real incomes. As a result, total real personal income has grown recently: over 2 percent per year since the rebound in employment in mid-2003, despite significant energy price increases. If productivity growth continues at or above trend, as seems likely, then we should see healthy growth in real income next year, anticipation of which should continue to support consumption growth in 2006.

Labor markets have recovered from the recession of 2001. Although employment was stagnant for a time following the downturn, hiring picked up in 2003. Of course, Hurricane Katrina disrupted labor markets by forcing the displacement of close to a million people from the Gulf Coast region. That separated a substantial number of workers from their employers, and damaged a substantial portion of the capital stock in the affected areas. As a result, U.S. employment growth was noticeably depressed in September and October, although quantitative estimates of the storms' effects are imprecise.

Payroll expansion has averaged over **200,000** jobs per month since October, however, more than enough to keep up with the growth in working-age population.

The overall outlook therefore is for a healthy expansion next year. Real GDP should grow at about **3.5** percent. Household spending should grow at about the same rate in real terms. Business investment should expand substantially faster than overall output and

residential investment should expand more slowly, perhaps even falling in real terms. And I expect employment to track the growth in the working-age population in 2006.

This is a fairly balanced picture, but naturally there is some uncertainty attached to it. Economic fundamentals could depart from their anticipated trajectories in any number of ways that could leave a mark on U.S. economic aggregates.

For example, spot oil prices — or other commodity prices for that matter — could well turn out either above or below the path embodied in futures prices. Many global commodity markets have been affected by the unanticipated surge in worldwide demand over the last several of years; those for which supply elasticities are low have experienced significant price run-ups. Commodity price surprises in either direction could alter aggregate supply conditions and either add or subtract from output growth.

On the demand side, there is some uncertainty regarding the rate at which housing activity is at all likely to cool in the coming year. Although I do not think that a sharp fall in housing investment is likely, a range of forecasts from flat to moderately declining seem reasonable.

And while continued growth in the share of output devoted to business investment seems highly probable, it is difficult to foresee with any certainty the scale of investment that businesses will find profitable to undertake, so spending growth in this category could well deviate from expectations.

In contrast, growth in household spending is easier to forecast, because both economic theory and empirical evidence indicate that consumption growth is tied closely to income growth over time. The range of likely outcomes for real consumption growth is correspondingly more narrow.

Differences between how economic fundamentals are expected to unfold and how they actually unfold can have important implications for real interest rates and thus for monetary policy.

As I have emphasized elsewhere, a real interest rate is a *relative price* — the price of current resources relative to the future resources one either forgoes by borrowing or obtains by investing. Real interest rates need to respond to changes in the *relative* pressure on current versus future resources.

Unpredicted movements in economic fundamentals, to the extent that they affect the relative pressure on current and future resources, thus will have implications for policy rates, even in situations in which inflation and inflation expectations are low and well-contained.

Core inflation has been low and relatively steady in the last several years. The inflation measure that is widely preferred on methodological grounds, the price index for core personal consumption expenditures, has averaged **1.8** percent over the 12 months ending

in November. That is within the **1-to-2** percent range that I and others have proposed as an announced target.

Even before Katrina, overall inflation, including food and energy prices, was elevated due to the run-up in energy prices in the spring and summer. Hurricanes Katrina and Rita severely disrupted energy production in the Gulf and led to sharp increases in refining margins and prices for gasoline and natural gas. U.S. natural gas production and petroleum refining are still down **5** percent since Katrina, and crude oil production is down **10** percent.

Immediately following Hurricane Katrina, as the magnitude of the effects on Gulf Coast energy production became clear, many observers came to fear that the resulting sharp increase in energy prices might lead to a broader increase in inflation, and perhaps even recessionary forces. These observers appeared to be reasoning by analogy to the 1970s, **but I believe that analogy is seriously mistaken**.

Inflation expectations were unanchored in the 1970s, the credibility of the Federal Reserve was low, and people *expected* the Fed to allow energy price shocks to feed through to overall inflation. The Fed often accommodated that expectation by preventing short-term real interest rates from rising. In fact, at times we kept nominal rates from rising as fast as inflation and thus provided further monetary stimulus. The Fed was then forced to raise rates dramatically to bring inflation back down, and in the process induced an economic contraction, exacerbating the real effects of the oil price shocks.

Thus, the proper lesson from the 1970s is not that energy price shocks induce major recessions or cause widespread inflation; it is that monetary policy that reacts to energy price shocks by accommodating the rise in inflation can induce major recessions.

Monetary policy should to respond to energy shocks by remaining focused on price stability. That way, the economy can respond to energy price shocks the way it should — the relative price of energy increases, but core inflation remains anchored. In the immediate aftermath of Hurricanes Katrina and Rita, monetary policymakers naturally have focused on the risk that the attendant energy price increases would "pass through" to an acceleration in core inflation. While the lack of an upsurge in the core PCE inflation figures since September is somewhat encouraging, I think it is too soon to declare that "pass-through risk" is entirely behind us. This assessment is consistent with the statement released by the FOMC following its December meeting, which noted that, "…*elevated energy prices have the potential to add to inflation pressures.*"

To my mind, any energy price pass-through to core inflation that is more than marginal and transitory would be unwelcome.

Thus far, market participants appear to believe that core inflation will remain contained. Survey measures of expected inflation rose sharply in September when retail gasoline prices reached their peak, but have come back down since. Measures of expected inflation derived from market prices of inflation protected U.S. Treasury securities drifted up a bit this fall, but they too have returned to mid-summer levels.

To maintain credibility for price stability, it is essential that monetary policy should respond vigorously to any visible erosion in inflation expectations.

Many of you may have noticed that in the statement released following the last FOMC meeting, the term "*accommodation*" was dropped, or, in the words of one of my colleagues, "given an honorable discharge." Many observers are taking this as a sign that the Committee may be coming close to completing the current sequence of tightening moves that began in June of 2004.

I discussed earlier that in an era of low and stable inflation, real interest rate movements will predominantly reflect the relative pressure on current versus future resources. Recessions, in modern industrialized economies, are associated with transitory declines in the demand for current goods and services. Since demand ultimately will recover, real interest rates need to fall in recessions to reflect the abundance of current relative to future resources. Thus, the FOMC engineered a reduction in real interest rates in 2001 that lasted until mid-2004, when a steady recovery in demand became evident. Since then, the economy has been on a transitional trajectory toward a path characterized by sustained and balanced expansion with relatively full utilization of resources. Along this transition, real interest rates have been rising toward a range consistent with the sustained growth path to which the economy has been headed.

It deserves emphasis, however, that sustained growth is not likely to be perfectly smooth and predictable. Unpredicted variations in economic fundamentals can and will affect economic conditions, even if they are not so large as to induce a recessionary break in growth.

And as I emphasized earlier, if those variations have implications for the relative pressure on current versus future resources, they will have implications for real interest rates as well. The long expansions of the 1980s and 1990s were both cases in which interest rates fluctuated as the economy experienced sustained growth.

Thus, whenever the current sequence of tightening moves reaches completion, short-term interest rates should not be expected to remain constant for an extended period of time. Instead, they will likely move from time to time during the expansion ahead.

Policymakers will need to be alert for movements in economic fundamentals that shift the relative pressure on current versus future resources in ways that require changes in real interest rates, even if inflation pressures subside.