Reacting to the Stock Market

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Stock market assets figure prominently, both directly and in a variety of indirect ways in the U.S. personal balance sheet. Current period of turbulence in financial markets raises important questions about the appropriate response of monetary policymakers to extreme movements in asset markets and market reactions to such response. In this essay I review recent developments in the U.S. monetary policy and financial markets and then offer a few remarks on the nature of policy-market interactions.

1. Monetary policy and developments in fixed-income markets

The U.S. yield curve behavior is influenced by a number of factors. Monetary policy is largely responsible for the short-end movements, while the middle section and the long end are determined mainly by demand and supply conditions. Policymakers looking for the evidence of tightness in capital markets examine the longer part of the curve, while private participants modify their debt-related strategies in part according to the expected stance of monetary decisions. Private expectations of changes in the official rates can be read off the prices of instruments traded in private markets: federal funds futures and Eurodollar futures as well as off the forward yield curve. Longer sections of the yield curve are influenced by a complex set of private decisions of different origin, first and foremost corporate funding demand, linked to underlying business strength and corporate financial policy factors, such as target degree of leverage, and by financing constraints such as changes in credit rating or the availability of only limited forms or terms of debt financing. Financial sector demand is another key factor, connected with the extent of interest rate risk management and speculation, as well as arbitrage and hedging strategies involving repo, swap and derivative markets. Further factors include the behavior of the market for mortgage-backed securities, the stock market situation as well as fiscal policy outlook and debt management policies of the Treasury.

In mid-2000 the federal funds rate stood at 6.5%, after a series of five 25 bp and one 50 bp tightening moves over the previous year. As noted in the minutes of the June FOMC meeting, signs of softening demand became to emerge

at that period. Stock prices contracted appreciably after peaking earlier in the year with the S&P500 index reaching 1527 points on 24 March. But the demand for IT equipment remained strong growing still at the annual rate of 20-30%. Imbalances in the capital market were evident in the yield curve. Short rates were at the level of or slightly higher than long rates and there was a hump in the 1-2 year section, a sign of expectations of a further 25-50 points tightening, evident also in the federal funds futures market after the May meeting. But there were also warning signs that became more visible in the 3rd quarter. The NAPM manufacturing index actually stabilized already in the September 1999-February 2000 period at the high level of over 55 points and then started easing, falling in August below the contraction-indicating 50 level. Capacity utilization began falling in that quarter and there was a brief period of payroll contraction. During the October earnings season companies started to substantially downgrade their business prospects. The deteriorating business conditions were confirmed in the sudden large drop in durable goods orders data in October. Oil prices remained at elevated levels, prompting a release of some of the U.S. official reserves of that commodity, and the dollar remained strong, despite a concerted central bank intervention to support the euro and a large US current account deficit. Further, there were uncertainties connected with the presidential elections in the U.S. Later in the year, due to a severe winter, natural gas prices soared. At the beginning of December markets looked forward to the fed funds rate easing in the near future and 10-year Treasury prices soared pushing yields over 80 bps lower over a short period of time. There were signs of a heightened risk aversion in credit markets, with the spread between the prime rate and the 10-year Treasury yield at over 400 bps. Policymakers had now to weigh a potential threat from energy prices to inflation against the probability of a slowdown and a reduction in inflationary pressures. Leaving rates unchanged in previous meetings, the FOMC members decided in December to wait further for more data to confirm the slowdown. Then, on 3 January in an unscheduled teleconference they lowered rates by 50 bp, after the release of an unexpectedly low reading of the NAPM index a day earlier, softer than expected Christmas retail sales and possible credit risk fallout from an energy crisis developing in California. The easing lowered the short end of the yield curve and the term structure of futures contracts predicted further easing. At the beginning of the year 2001 most economists forecasted a quick recovery in the 3rd quarter. After the initial easing in January 10-year Treasuries rose again in February and March as more economic data pointed to a further deterioration of business conditions. The FOMC continued easing by 50 points at each of the subsequent 4 occasions including an unscheduled teleconference in April, then eased twice by 25 bp, in June and August, then again three times by 50 bp, bringing the official rate down to 2%. In January 2-year yields fell below 10-year yields for the first time in a year and in April 3-month yields fell below 2-year level for the first time since mid-2000. During this period futures market essentially went along

the easing and in end-August implied some monetary tightening by March 2002. 10-year yields rose over 70 bp in the March-May period and then slid over 100 points. Following the terrorist attack in September debt markets become subject to considerable imbalances and that triggered official interventions. Immediately after the attack the Fed expanded its balance sheet by around $100 bn. But strong pressures emerged soon in repo markets, as some participants reportedly stayed away causing repo rates in some sections of the curve to drop almost to zero. To alleviate the situation and prevent failed trades the Treasury held an unscheduled auction of 10-year securities and the Fed swapped some of its holdings of government paper with private participants providing them with the issues in increased demand. Although short term rates dropped substantially long rates remained elevated due to an ongoing fiscal easing. The U.S. Treasury decided then to discontinue issuing 30-year bonds. This event and the collapse of oil prices helped to push the long section of the curve by 50 bp lower. Most recently, in mid-November the long end returned earlier gains as optimism about recovery and soaring stock markets absorbed attention of debt dealers. Interest rate futures pointed to a possible tightening by early next year.

Bond issuance reached high levels in 2001. Credit deterioration induced short term debt downgrades for some participants and shut them from the commercial paper market. Volatile equity markets prompted many companies to seek funds in bond markets and to try to improve results by leverage. Interestingly, the prime rate/10-year Treasury spread decreased, and the Baa/10-year Treasury spread widened, perhaps reflecting changing rating and demand conditions. Equity-linked paper registered also a record volume of issues. Market participants were also adjusting duration of their portfolios to profit from changing yields. There were also ample opportunities for speculating with yield curve strategies.

2. Corporate earnings and market volatility

Changing corporate profit expectations may be gauged by looking at the evolution of the consensus forecast for forward earnings per share of the components of the S&P500 index. At the peak of bull stock market in the 1st quarter of the year 2000 analysts predicted the 2001 operating earnings at the level of $67. That figure started to be revised during the 2nd half of the year 2000, and in mid-November 2000 stood at $62, still more than 10% higher than the actual 3Q99/3Q00 earnings. In 1999, and earlier in 2000, profits grew at the rate of 28%. In the 4th quarter profits contracted by some 10%, a result below analysts' earlier predictions. This fall in profits coincided with sharp selloffs in the markets, first by 12% in September, then, after a small rise, by similar amount in the 4th quarter. In January markets rose following the surprise easing. This was followed by a prolonged 20% fall in the February-mid April period, when the Fed again took markets by surprise. Actually there were expec-

tations for another unscheduled move a few days earlier but as nothing happened investors concluded that the Fed will not act. As became clear later the FOMC indeed held a teleconference one week before the April move, but decided to wait at that time and then lowered rates, perhaps not to give an impression of coming to the direct rescue of the stock market. Following that decision markets rallied almost 20% until the late June, when the Fed lowered again, this time only by 25 bp, and the sentiment regarding further developments became more mixed. Markets fell broadly during August and after terrorist attacks, reaching levels some 1/3 below the 2000 peak, but then the S&P regained earlier losses rising again over 20 % along with three 50 bp interest rate reductions. During 2001 the S&P EPS forecast was coming down gradually and stood at $55 in April, $50 in July, with the 2002 forecast coming down from $65 in the first quarter to $60 at the end of the 2nd quarter 2001. In mid-November consensus forecast was for the 2002 EPS of $54. This implied over a 30% rise over the projected 2001 EPS of $40, a rise larger than in 1999 when economy grew at the rate of 4.1%, a fairly optimistic scenario given current economic conditions.

An important development during that period was an increasingly dubious treatment of company profit statements. During the slowdown many companies reported huge write-offs, and these were frequently treated by analysts as one-time events. Companies followed broadly the practice of including as many such items as possible, to gain from favorable comparisons in the future. Some resorted to other forms of creative accounting. Official changes in the treatment of some cost items in the statements added more complexity to the situation. As a result a substantially larger than usual wedge developed between reported and operating earnings, and the latter, which decelerated much less, were being used increasingly in comparisons.

Market volatility in 2000 and 2001 reached high levels. The CBOE VIX options volatility index remained around 30 since end-March 2000 until the May 2000 FOMC meeting. Then it fell below 20 in end-August and remained in the low 20s until October when bad corporate news began to accumulate. It rose to over 30 following the inconclusive December FOMC meeting. After a reduction in rates in the first days of January it fell to below 25 and started rising in February reaching 40 after the March FOMC meeting. After another surprise Fed decision it fell gradually into low 20s and climbed into the 35 level only in the first days of September. Volatility peaked following the terrorist attacks and then fell again into the 25 region.

Investors expectations in the past year were mainly driven by an accommodating stance of monetary policy and by the prospect of a policy-induced recovery in profits. As time went on this profits recovery started to recede into the future. The profits shock of October 2000 lead to an extreme volatility and resulted in broadly falling markets with several major rallies sparked by the FOMC decisions in January, April and September. These rallies may have produced sizeable gains to some investors, especially in the more speculative

sections of the market. Although the absolute level of prices was reduced forcefully it fell only with the rate of reduced profit expectations. Prices were high as measured by forward P/E ratios. During the peak in 2000 the market stood at the forward P/E of 22.5 and in 2000 reached the maximum level of 24. In November 2001 market was trading on a multiple of 28 optimistic 2001 earnings and 20.5 estimated 2002 operating earnings. Investors frequently ignored the pitfalls of new accounting and profits forecasting. Profit, arguably one of the more tangible notions in business, became at times a hazy concept. The vagaries of internet-era investing evident in many major companies' balance sheets were sometimes overlooked. The wide divergence between reported and operating profits during the slowdown, estimates based on highly uncertain scenarios and the continuing lack of profits visibility imply that 2002 estimates must be treated with caution.

3. What is the role of the stock market in monetary policy decisions?

The nature of challenges facing the FOMC members was different in 2000 and in 2001. In 2000 their main concern was to reduce imbalances in overextended factor markets and consequent inflation risks. Labor markets as well as markets for long-term capital were tight for the whole year. Preoccupied with dangers to inflation implicit in the too-fast growth, policymakers met with several factors complicating their response. First, energy prices remained on the highest level in years adding to inflationary pressures and taxing personal balances. Second, monetary decision-making process coincided in that year with the electoral process. As the FOMC did not want to make moves during final stages of the presidential campaign and immediately after the election, the number of meetings available for policy changes was effectively reduced, the more so as the conclusion of the voting process dragged on. Third, in their inflation-related deliberations members faced questions relating to the putative productivity-induced shift in the short-term Philips curve as the nature of the impact of information technology investments of the late nineties on the productivity level started to be widely discussed (see e.g. Jorgenson [2001]) and the revised 1998-2000 GDP data published in July 2001, which lowered some productivity figures for that period). On the other hand, members' semi-annual projections of inflation figures in the nineties clearly show that they tended to overestimate the actual inflation (Kohn [1999]). While one of the reasons may have been uncertainty about the nature of the structural shift, the threat of inflation and costs associated with its reduction, should such reduction be necessary in the future, may have also played a role.

In 2001 the FOMC focus shifted to growth, changing weights on the price stability and the balanced growth components in the policymakers objective function. Unemployment began to rise considerably reaching 5.4% in October from the cycle low of 3.9%. The manufacturing sector remained in recession

with capacity utilization at 74.8% in October, its lowest level since 1983. In the post-attack situation the FOMC adopted what seems to be a policy of zero real rates. With inflation rates and expectations at a reduced level, problems of conducting effective policy with nominal rates close to zero might come to the fore.

Within this context the Fed faced more volatile markets driven by falling corporate profits and had to decide to what degree their actions needed to be influenced by the stock market dynamics (for an attempt to measure the Fed response based on 1985-1999 data see Rigobon and Sack [2001]) and its impact on the economy. The scale of the much-publicized wealth effect was only one aspect of the problem. From the welfare perspective markets priced substantially out of equilibrium are not desirable. They may tend to reduce the number of new investment projects or lead ultimately to some capital destruction as cheap capital is not always appropriated in the optimal fashion. High volatility may reduce social benefits of the stock market operation and increase some ongoing financial costs such as the costs of hedging. The effective shutdown of the market for the new offerings in 2001 is another consequence of such developments. It seems that the FOMC members faced the problem of how to respond to such negative volatility dynamics at least on three occasions, before taking the unscheduled decisions in January, April and September, clearly judging that risks to business investment and growth process were bigger than longer-term costs that might be associated with developing closer link between their decisions and the stock market action. After the December and March meetings, when policy decisions seemed inadequate by market participants and volatility rose, the FOMC members lowered rates in an unorthodox manner which caused stock markets to rally and volatility to abate.

In deciding on its behavior towards the stock market the Federal Reserve confronts problems relating to the real extent of both long and short-term impact of the stock market on the economy.

First, there are some questions about the actual operation of the stock market channel of monetary policy transmission. The standard transmission channel may be distorted if the stock market is out of equilibrium or may become more complex if there are some additional areas influenced by the stock market, other than direct consumption and investment mechanisms mentioned above. But, to react to imbalances in the stock market as it reacts to imbalances in other factor markets the Fed should know what constitutes the stock market equilibrium. This is not easy to establish in the current period, characterized by the rapid technological change, new investment practices and the occurrence of a possibly persistent period of the reevaluation of basic risks. Recent low real yields on stocks may serve as a manifestation of the latter. Further, it is not clear to what extent elevated prices may be a result of the high growth rate of monetary aggregates which the Fed stopped targeting. Second, the role of the stock market in attracting foreign capital, sustaining the dollar, financing the current account deficit and, on the long-term welfare

side, in the pension fund management may point to a broader stock market influence on the economy.

The second set of questions relates to the role played by the more immediate investor behavior characterized by their response to and expectations of the rate-setting decisions. Reacting to the market should be distinguished from rescuing it in the period of bubble-related movements. Such quasi bail-out operations may enhance opportunistic behavior of investors who will try to free-ride monetary policy and may lead to moral hazard problems. It is possible that the Fed reaction should be asymmetric, different for large downward moves as opposed to rallies. Policy may change in a period of excessive market volatility. Investors, in turn, may concentrate on monetary changes when other variables influencing prices give no positive signals. They may react differently in periods of an activist Fed policy and become oblivious to fundamental corporate realities or grow to rely too much on the prospect of indefinite easing. Further, increased speculation may be triggered by more uncertainty about the outcome of a specific FOMC meeting. To what extent taking such short-term interactions into account while making monetary decisions enhances the operation of the basic stock market transmission channel?

Financial market stability, fears of a crash and its profound social costs feature prominently in the Federal Reserve decision making process, as is clear from its behavior in 1987, 1998 and in the recent months. Gauging the effects of stabilizing efforts on future volatility presents a daunting task, especially when decisions must be taken under a time constraint. Adding to these complexities, a dynamic-game character of short-term market-policy interactions may distort the longer-term stock market channel of policy transmission.

References

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