

## DEVELOPMENTS AND SOURCES OF RISK IN THE MAJOR FINANCIAL CENTERS

The deterioration in financial market conditions that has taken place since the release of the June 2002 *Global Financial Stability Report* appears to have been driven primarily by mutually reinforcing rounds of eroding investor confidence and heightened risk aversion. Against the background of the deflation in the TMT “bubble,” investor confidence was affected by growing uncertainties about the strength and durability of the global economic recovery, additional revelations of accounting irregularities, and downward revisions to corporate earnings forecasts. The attendant price adjustments in the mature equity, credit, and currency markets, and concerns about their implications for balance sheets, further weakened investor confidence and increased risk aversion. The sharp deterioration in market conditions through mid-July—when the major equity markets reached lows—also raised questions about the resilience of financial institutions, particularly in Europe. Meanwhile, financial institutions seemed to be reassessing their business strategies, particularly the relative profitability of wholesale versus retail banking.

So far, the major markets and institutions have remained resilient, and market adjustments have been orderly.<sup>1</sup> One reason for this is that financial risks and rewards (and losses) are more widely dispersed among many types of bank and nonbank financial institutions as well as retail investors. In addition, the major institutions that intermediate the bulk of international capital flows had relatively favorable capital and liquidity positions before entering this most recent period of market adjustments. Nevertheless, profitability has weakened, and institutions have pulled back from risk taking.

Overall, and despite a significant rise in risk aversion and sharp price declines in some markets, the market adjustments thus far can be characterized as a shedding of risk and shift to quality (but not yet flight to safety). Market adjustments so far have not been accompanied by the types of heavy flows out of risky assets and into safe assets—in particular by retail investors—that are associated with panic selling. Panic selling could cause prices to overshoot on the downside and result in outsized effects on financial markets (including emerging markets), financial institutions, and, in the worst of circumstances, the real economy. These market risks may be counterbalanced to some extent by the stabilizing behavior of longer-term institutional investors looking for bargains, as well as the behavior of contrarian investors, who have attracted inflows of funds and already appear to be searching for underpriced assets. Finally, there are significant uncertainties about macroeconomic fundamentals, notably whether sustained high productivity growth and low inflation in the United States will once again support corporate profitability over the medium term; low European growth and above-target core inflation will continue to constrain global growth; and financial and corporate sector problems in Japan will begin to be resolved.

After reviewing these and other developments and the associated risks, the second part of this chapter examines the more medium-term financial risks associated with a more rapid decline in capital flows to the United States, which was the largest net recipient of international capital flows during the 1990s. The dollar’s recent decline suggests that international investor sentiment toward U.S. assets has deteriorated,

<sup>1</sup>Disorderly markets would be characterized by: (1) very wide bid-ask spreads, (2) imbalances between buy and sell orders that would, for example, lead the New York Stock Exchange to stop trading, (3) the activation of circuit breakers on exchanges, and (4) a widespread sense of panic by investors.

notwithstanding questions about the relative economic strength of Europe and Japan compared with the United States, and factors that would continue to support the U.S. role as an important international financial center or financial “hub.” The apparent turn in the dollar highlights the risk that additional shocks and price adjustments could lead international investors to further reappraise investments in the United States relative to their home countries. Such a reappraisal could cause an abrupt shift in the pattern of capital flows among the major financial centers, triggering increased volatility in the major currencies and sharp adjustments in national and international financial markets.

### The Market Deterioration Stemming from Eroding Investor Confidence and Heightened Risk Aversion

The period under review was marked by significant declines in the prices of risky assets across a range of mature and international markets (see Table 1.1 in Chapter I). In spite of strong first-quarter U.S. economic growth, equity prices fell globally, as the first-quarter U.S. equity-market correction spread to overseas markets. Market corrections, along with pressures on financial institution earnings and credit quality, were reflected in steep declines in stock prices for some banks and insurers, particularly in Europe. As government bond markets rallied, credit spreads widened, particularly for subinvestment-grade borrowers. Meanwhile, high-yield bond issuance fell to half the level attained in the second quarter of 2001. Gross and net foreign inflows to U.S. securities markets slowed, and the dollar declined against the yen and euro.

The adjustments in global asset markets reflected, in part, more widespread sentiment that both risk and uncertainty were rising, and in part the continued aftereffects of the bursting of the TMT bubble, which have been ongoing since the first quarter of 2000. The run-up in the TMT bubble was characterized by a confluence of excesses, including the accumulation of financial imbalances, such as a buildup of debt and

leverage on corporate balance sheets that ultimately proved unsustainable. The boom phase was also marked by steep rises in equity prices, related to misaligned incentives that led corporate managers to inflate earnings in order to boost share prices. A combination of overambitious promises of above-average returns and compensation systems geared toward incentives to maximize short-term share price increases provided powerful, sometimes irresistible, incentives to use every trick in the book, especially when growth rates started to flatten.

Notwithstanding corporate managers’ stated adherence to the principle of shareholder value, heavy grants of share options and other excesses served to dilute that value, much as managerial underperformance had done in more banking- and creditor-oriented financial systems in earlier years. By the late 1990s, the last stages of the boom brought aggressive accounting practices by some companies, lapses in investor oversight and scrutiny by fiduciary intermediaries, gaps in official enforcement, and what U.S. Federal Reserve Chairman Alan Greenspan has characterized as an environment of “infectious greed” in the business community (Greenspan, 2002). This environment has led many to believe that there is a need to remove the asymmetry in current business practices between accelerating the recognition of revenues and management rewards, while deferring (or even hiding) liabilities and costs, including the expensing of stock options, until well into the future.

Revelations of the excesses and imbalances of the bubble led to sharp repricings of assets for the affected companies and others—along with widespread demands for reforms to improve corporate governance and accounting practices. The attendant adjustment has unwound at least some of the excesses and imbalances, as suggested by deflation in TMT stocks worldwide, sharp increases in credit spreads for TMT companies, and substantial numbers of defaults and bankruptcies. Moreover, there is anecdotal evidence that restructuring firms and distressed-asset specialists are receiving inflows of capital from investors and stand ready to more actively

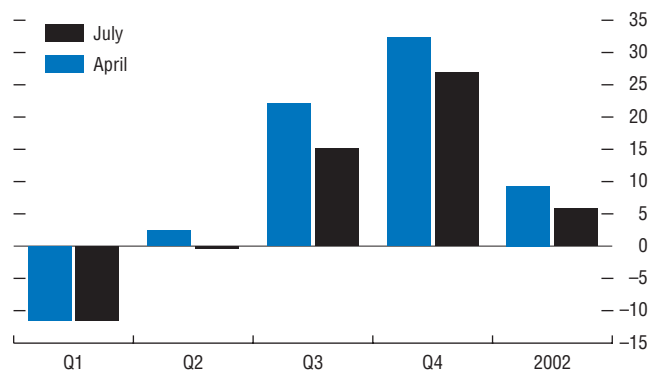
buy underpriced assets. These activities could help to establish a floor for asset prices and stabilize markets.

Most recently, the deterioration in asset markets seemed to be driven by an erosion of investor confidence and heightened risk aversion that had two main underlying causes. First, there was growing uncertainty about the strength and durability of the global recovery and in particular about corporate earnings, for which forecasts were revised down for the United States and other mature markets (Figure 2.1). Since July 2001, estimated S&P 500 earnings growth for the second quarter of 2002 has been revised down from 29 percent to roughly flat. Estimates for the second half of 2002 have been markedly reduced as well, partly reflecting the uncertainty about the economic outlook.

At first glance, the first-quarter year-on-year contraction in firm-reported profits seemed to contrast with the positive growth in the national income and product accounts (NIPA) measure of profits (Figure 2.2). Analysis reveals that the difference in growth rates partly reflected the fact that NIPA profits are adjusted for the costs associated with the exercise of stock option grants and adjustments for accelerated depreciation allowances in last autumn's economic recovery legislation, whereas firm-reported profits do not reflect these effects (Greenspan, 2002). In particular, the granting of fewer options packages in the latest reporting periods contributed to a year-on-year percentage increase in reported NIPA profits.

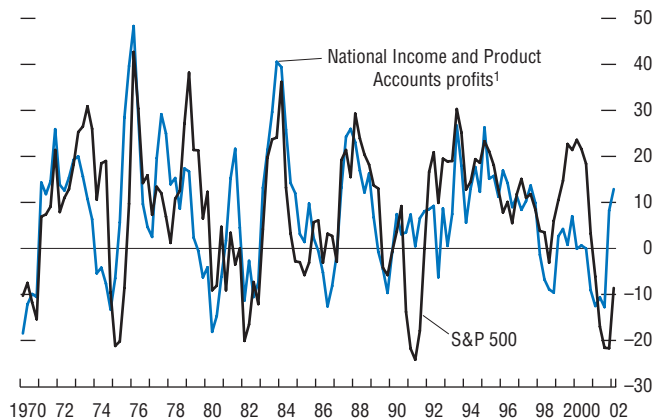
Second, investor trust in reported earnings and accounting practices was shaken by several major restatements of earnings by high-profile firms. The firms included WorldCom, which incorrectly classified operating expenses as capital expenditures, overstating income by \$7.2 billion during the five quarters from the first quarter of 2001 to the first quarter of 2002; Xerox, which improperly booked revenues from long-term leases in the current period, overstating income by \$6.4 billion; energy companies that engaged in "energy swaps"—some exceeding \$1 billion—to inflate revenues; and Vivendi, which was sus-

**Figure 2.1. S&P 500 Earnings Growth Forecasts for 2002**  
(In percent)



Source: Thomson Financial First Call.

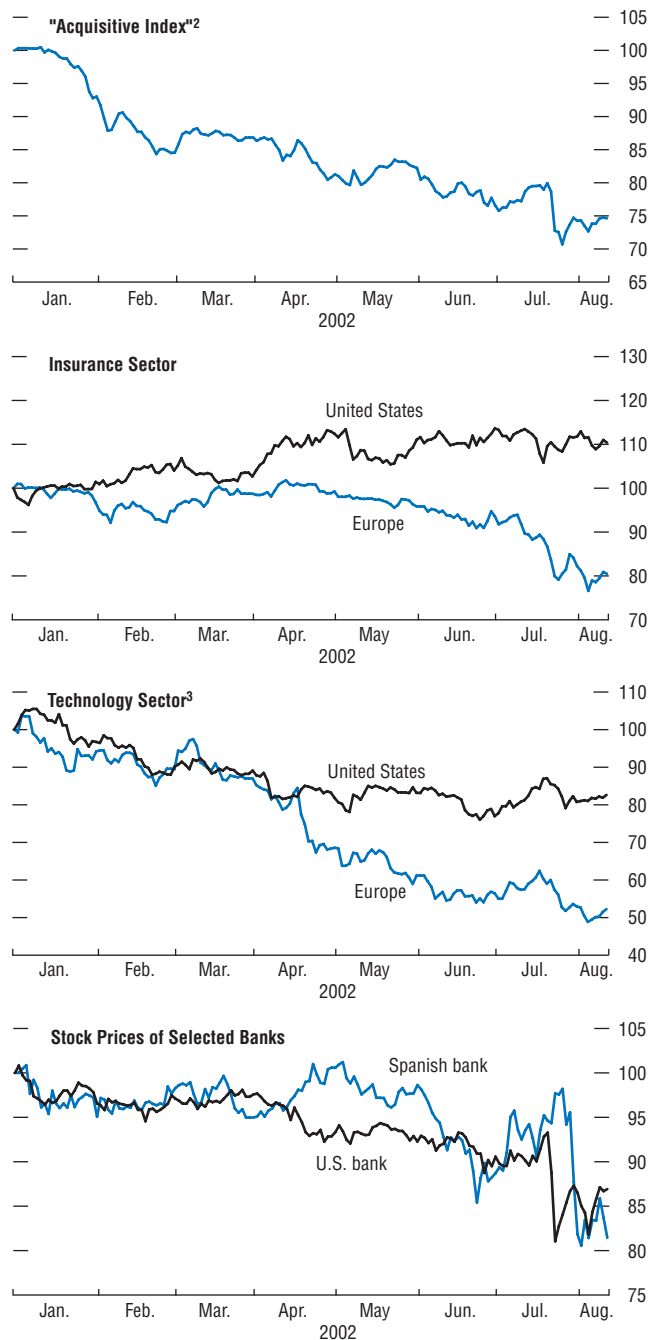
**Figure 2.2. S&P 500 and National Income and Product Accounts Profits**  
(In percent; year-on-year change)



Sources: U.S. Department of Commerce, Bureau of Economic Analysis; Bridgewater Associates; and Thomson Financial First Call.

<sup>1</sup>Corporate profits with inventory valuation and capital consumption adjustments.

**Figure 2.3. Relative Performance in Stock Markets<sup>1</sup>**  
(January 1, 2002 = 100)



Sources: Bloomberg L.P.; and IMF staff estimates.

<sup>1</sup>Performance of the specified price index relative to the overall stock price index (S&P 500 for the United States, and FTSE Eurotop 300 for Europe).

<sup>2</sup>Performance of the stock prices of the most active acquisitive companies in the United States to S&P 500 price index.

<sup>3</sup>Hardware subindexes.

pected of inappropriately accounting for the sale of a stake in a British pay-TV firm. These incidents brought the issues raised by Enron's collapse back into sharp focus, fueling the debate over accounting, disclosure, and transparency issues (Box 2.1). They particularly called into question the valuations of firms that have aggressively made acquisitions, which are subject to accounting manipulation—as indicated by the sharp decline in their stock prices relative to broader price indexes (Figure 2.3).

In this environment, a confluence of factors created an environment of uncertainty that was conducive to heightened risk aversion. These factors included the aforementioned downward earnings revisions and revelations of aggressive accounting practices and in some instances outright fraud. In addition, concerns arose about the soundness of corporate balance sheets, including the extent of remaining imbalances in sectors such as telecoms. Finally, investors also appeared to become increasingly uncertain about more fundamental and structural aspects of the global economy and markets. Examples included uncertainty about the sustainability of the “new economy” business model; the veracity and usefulness of corporate financial reports and accounting standards more generally; and, especially in emerging markets, the transparency, efficacy, and continuity of legal and policy frameworks.

Eroding investor confidence and heightened risk aversion were reflected in declining equity prices globally. U.S. markets sank to near or below autumn 1998 lows, with the S&P 500 index down about 20 percent in the year through mid-August, and down more than 40 percent compared with its March 2000 peak. Meanwhile, European stocks declined by more than 25 percent so far this year, partly reflecting a sharp decline in bank and insurance stocks. A 2000-point decline in the Nikkei that started in mid-June left the index down 10 percent, reflecting continued uncertainties about Japan's economic recovery and the pace and depth of reform. Declines in TMT stock prices occurred amid concerns about overcapacity and high debt lev-

### Box 2.1. Governance and Accounting Issues

The recent series of reported corporate irregularities in the United States and elsewhere has imposed large costs on investors and regulators alike. These irregularities have brought to the fore questions about appropriate official responses to improve governance, accounting, and disclosure practices, not just in the United States but also in global markets generally.

The cases of Enron and WorldCom have seen both governance and accounting failings that have resulted in the manipulation of earnings and concealment of underlying liquidity and solvency problems. The Enron case saw management disregard accounting principles and choose “aggressive” interpretation of accounting rules to disguise losses off-balance sheet. The WorldCom case, on the other hand, appears to be a disregard by management of a fundamental accounting principle in order to bolster earnings. The latter case illustrates that the best principles do not matter unless implemented. History also contains examples from other countries of governance and accounting abuses. These and more recent practices reveal what could amount to wider reaching corporate governance and accounting issues including:

- **Accelerating recognition of revenues**—for example, by advancing the timing of recognition of revenues on long-term leases, and long-term license fees, or booking revenue when a product is shipped to a distributor or reseller without an obligation to repurchase (referred to as “channel stuffing”).
- **Boosting revenues by recording nonoperating transactions as revenues**—for example, by recording the sale of an equity stake as revenue, or engaging in “swap” trades of like products to give the appearance of economic activity where there is none.
- **Altering transactions with other parties to delay or avoid recognition of expenses**—for example, by prematurely recognizing vendor allowances and rebates, recording false credits from vendors for damaged and outdated goods, and capitalizing operating expenses.
- **Exploiting classification alternatives**—for example, the choice between capital versus operat-

ing leases (especially airlines), and for financing instruments (trust preferred shares) constructed to be treated like debt for tax purposes but treated like equity for accounting purposes and the investor community.

- **Treatment of stock options grants**—for example, by not expensing stock option grants in the determination of net income or providing good disclosure, and re-pricing of stock options as market conditions change.
- **Other revenue enhancing measures**—for example, by using securitizations and sale of receivables to smooth earnings, or by changing assumptions for pension funding requirements.
- **Nonconsolidated or off-balance-sheet entities**, such as by using Special Purpose Vehicles and limited partnerships to hide debt, or by using guarantees, contingent liabilities and credit for liquidity triggers.

The regulatory response to governance and accounting weaknesses will reflect varying regulatory responsibilities across markets and disciplines. In the United States, for example, several proposals have been forthcoming for new oversight arrangements for accountants and auditors, and stricter rules for corporate governance and disclosure. On July 30, President George W. Bush signed into law the Public Company Accounting Reform and Investor Protection Act of 2002, which replaces the accounting industry’s self-regulation with a public oversight body and raises the benchmark for auditor and management accountability. Meanwhile, the New York Stock Exchange has approved rules that would mandate more stringent standards for corporate governance and disclosure practices of NYSE listed companies. In the United Kingdom, the Institute of Chartered Accountants of England and Wales Council have recently adopted new recommendations to strengthen auditor independence.

In the area of accounting and disclosure standard setting, the recent debate has seen discussion of the relative merits and demerits of rules-based versus principles-based standards setting mechanisms—the approaches underlying U.S. accounting standards and international accounting standards, respectively. Against the back-



**Box 2.1 (concluded)**

ground of efforts in recent years to seek improvement and global convergence of standards, the European Commission, for example, has mandated that listed companies prepare financial statements in accordance with International Accounting Standards (IAS) by 2005. In the same vein, work is also under way within the International Organization of Securities Commissions (IOSCO) for continued improvement of national accounting standards and the development of mechanisms for consistent application and enforcement, as well as progress in convergence between IAS and U.S. GAAP. In the United States this falls within the ambit of the SEC. In this context, the above-mentioned Act of 2002 mandates the SEC to report to Congress on the U.S. adoption of a principles-based accounting system.

At the international level, IOSCO has formed a committee of heads of securities regulatory agencies to identify common issues arising from

Enron. This high-level committee has identified accounting and audit standards and continuous disclosure standards as key issues and will report on its progress to the Financial Stability Forum in September. The work of the committee also includes a dialogue with IFAC (the body responsible for preparing International Standards on Auditing) on the structure of the audit industry—in particular, on the concentration of audits in the big four accounting firms.

The IAS Board has several projects of relevance in its work plan. These include: (1) a project on consolidation and special purpose vehicles and a project on revenue definition and recognition (both of which were added as a matter of some urgency following the Board's June meeting this year); (2) an Exposure Draft on employee stock options, which is planned for issue in the fourth quarter of 2002; and (3) further research to address the dichotomy between financial and operating lease accounting.

els, as indicated by the near 33 percent fall in the Nasdaq.

Increasing risk aversion and deteriorating investor sentiment were also reflected in price/earnings (P/E) ratios and equity options prices (implied volatilities) (Box 2.2 and Figure 2.4). P/E ratios and implied volatilities suggest three main shifts in investor beliefs in the major equity markets. First, implied volatility has risen in European, Japanese, and U.S. markets, consistent with an increase in investor uncertainty and concern about the risk of future price moves (although peaks in implied volatility have also coincided with market turns, in some instances). Second, P/E ratios imply a downward shift in future earnings expectations in Japan and the United States, notwithstanding (in the U.S. economy) some evidence of an improved near-term outlook. Third, the equity risk premium has risen in the recent period, although it remains below its early 1990s' average. These indicators suggest that shifts in investor sentiment and beliefs have played a role in recent price

corrections, and that an additional deterioration in investor sentiment could result in further corrections.

Deteriorating investor sentiment, along with a still-elevated pace of corporate defaults, was also reflected in credit market prices and flows. Credit losses continued apace as imbalances from previous years continued to be worked off, including in the TMT sector globally. The global speculative-grade default rate stood at 6.6 percent in the year through July 10, above the 2000 level of under 5 percent, while the investment-grade default rate was well below both 2000 and 2001 levels. European speculative grade default rates were especially high in the year to July 10—8.5 percent on EU issues, against 4.9 percent for U.S. issues. In addition, the period under review saw reports of financial troubles at prominent European companies such as Philipp Holzmann, Kirch Group, and Vivendi. These companies' troubles were not uniformly reflected in credit market prices and flows, given the heavy reliance of European corporations on bank loans.

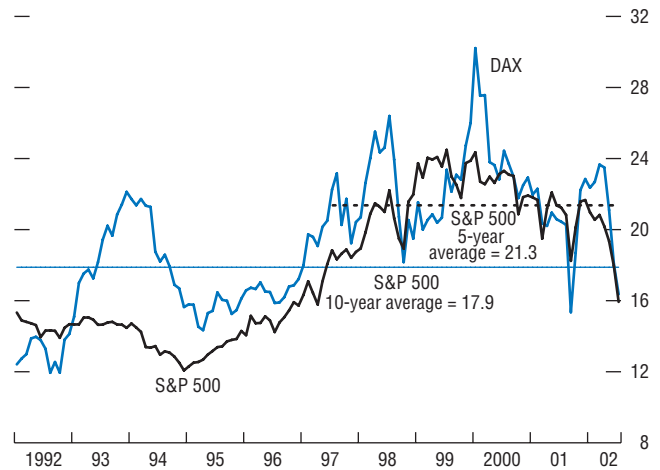
Instead, they were implicit in the 22 percent decline in European bank stocks in the year to mid-August.

Overall, developments in the credit markets suggested a “shift to quality” and growing risk aversion. Consistent with the still high pace of defaults in high-yield markets, high-yield spreads rose by about 160 basis points to more than 800 basis points, the highest levels since the post-September 11 blowout in spreads. By contrast, investment-grade spreads widened only modestly, and remained below their post-September 11 peaks. In the primary markets, high-yield issuance was 55 percent lower than in the same quarter of 2001, whereas investment-grade issuance was about a third lower. The continued deterioration in markets suggested that in the period ahead, higher-risk borrowers, including in emerging markets, could face even tighter financing conditions.

Although the deterioration in credit markets was worst among high-yield issuers, problems emerged among high-grade issuers as well, as evident in conditions in commercial paper (CP)—particularly in the United States—and long-term bond markets. During the first half of 2002, many lower-tier issuers exited the CP market, turning to commercial banks or the bond market for financing. With many firms exiting and others reducing their liquidity exposures, the U.S. commercial paper market continued to contract through the spring, albeit at a slower pace than over the previous five quarters. The outstanding amount of nonfinancial domestic CP fell to \$148 billion, less than half its late 2000 peak. The quality tiering in the market decreased somewhat as a result of these reduced supply pressures, and spreads between rates paid by A2P2- and A1P1-rated issuers narrowed from the elevated levels in the first quarter to 30 basis points or less (still higher than typical).

In the bond market, “fallen angels,” firms that fell from investment grade to subinvestment grade, now account for the highest share of the total corporate market since the previous recession. Firms in the telecom sector and those with questionable accounting have figured promi-

**Figure 2.4. Twelve-Month Forward Price/Earnings Ratios<sup>1</sup>**  
(In percent)



Source: I/B/E/S.  
<sup>1</sup>Price/earnings ratios are based on rolling average quarterly consensus earnings expectations.

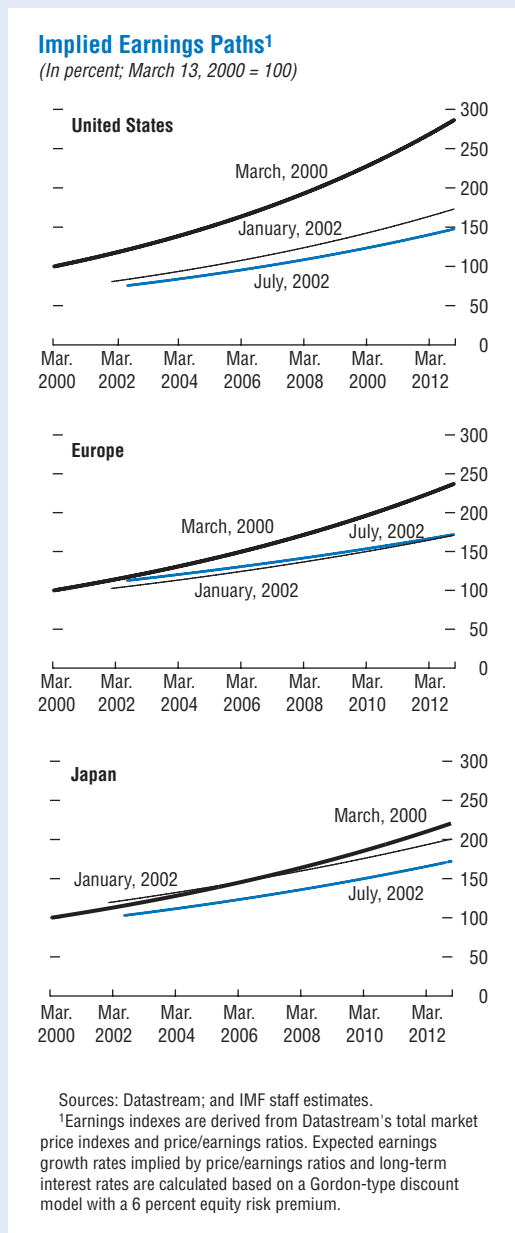
**Box 2.2. Equity Markets Indicate Deteriorating Investor Confidence, Lower Earnings Expectations, and Rising Risk Perception/Aversion**

Recent equity price movements in the major markets have been associated with:

- surging implied volatility;
- declining earnings expectations embedded in equity prices; and
- rising equity risk premiums.

Implied equity price volatility derived from option prices—which is indicative of investors’ uncertainty about future stock prices—increased in key advanced countries despite relatively small increases in actual equity market volatility (see the first figure). In Germany and the United Kingdom, implied volatility almost doubled in the second quarter. Implied volatility also appears to have become more correlated across countries than in the past (with the exception of September 11 and market turbulence in 1998). From a longer-term perspective, in June 2002, implied volatility in some European countries, the United States, and Japan was approaching the upper end of the typical range of the past few years. A surge in program trading and, more recently, in short selling and short covering may have contributed to the increased historical volatility in equity markets, particularly in the United States.<sup>1</sup>

Stock market valuations indicate that future earnings expectations have been revised downward, chiefly in the United States. Future earnings paths implied by equity prices based on a Gordon-type discount model with a constant equity premium have shifted noticeably (see the second figure).<sup>2</sup> Actual earnings in the United States have declined sharply since the peak of the equity market in March of 2000, and the implied future earnings path has flattened. In Europe, implied earnings paths have rotated around relatively stable earnings, with current earnings slightly higher than at the beginning of



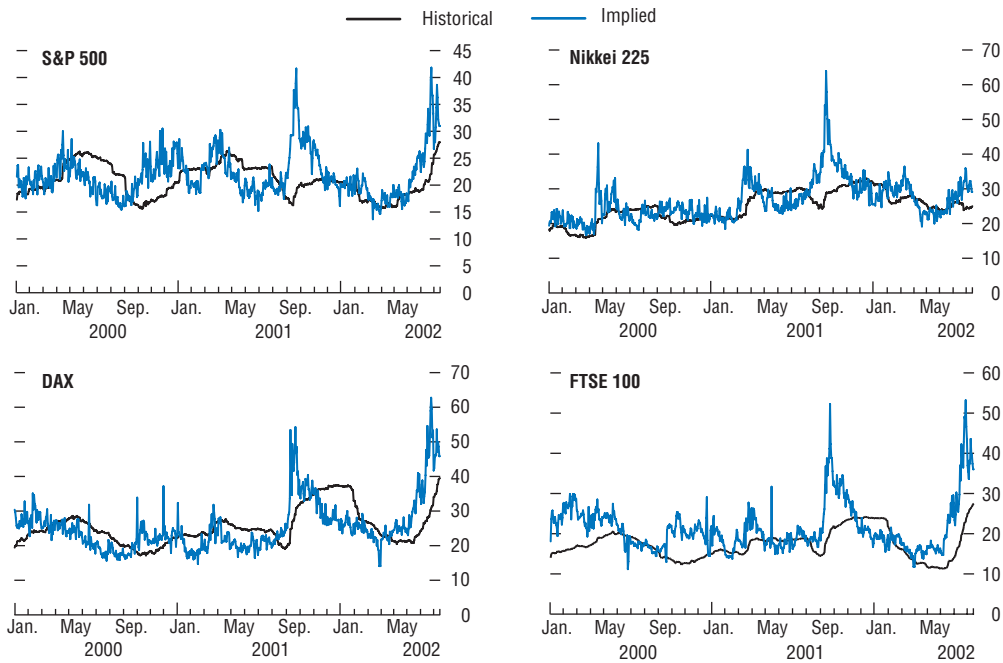
<sup>1</sup>In the last week of June, program trading accounted for 51 percent of the trading volume on the New York Stock Exchange, up from 28 percent in 2001 (Financial Times, July 17, 2002).

<sup>2</sup>The model is described in IMF (1998), pages 48–49, and in IMF (2001), pages 12–13. See also Gordon (1962).

2002. In Japan, implied earnings expectations have shifted down mostly since the beginning of this year. Equity valuations currently imply future earnings growth rates of 6.6 percent, 4.1 percent, and 5.1 percent in the U.S., Europe, and Japan, respectively, down from 8.6 percent,



### Implied and Historical Volatility in Equity Markets



Sources: Bloomberg L.P.; and IMF staff estimates.

Note: Implied volatility is a measure of the equity price variability implied by the market prices of call options on equity futures. Volatilities are expressed in percent rate of change.

7.0 percent, and 6.4 percent anticipated in March 2000.<sup>3</sup>

The recent drop in equity prices also appears to partly reflect rising equity risk premiums that suggest larger perceived equity market risks and/or rising risk aversion. In the United States, the equity risk premium—approximated by the difference between the earnings yield on the S&P 500 (based on expected earnings) and the real 10-year treasury bond yield—has risen from

<sup>3</sup>The implied earnings growth rates are predicated on an equity risk premium at its long-run average of 6 percent. All other things equal, implied earnings growth rates move approximately one-for-one with changes in the assumed equity premium. Between mid-1990 and mid-2002, actual earnings grew on average by 6.3 percent, 4.9 percent, and -2.7 percent per year in the United States, Europe, and Japan, respectively.

close to zero in early 2000 at the height of the market to about 3 percent in late June 2002.<sup>4</sup> A further increase to 4 percent (the average risk premium in the early 1990s), while holding constant the path of expected earnings, would reduce equity valuations in the United States by about 15 percent.

<sup>4</sup>Similarly, estimated risk premiums rose in Germany from close to zero in early 2000 to about 3 percent in June 2002, and in Japan from zero in early 2001 to about 2 percent most recently. For more explanation of this measure of the risk premium, see United States, Board of Governors of the Federal Reserve System (2001) and Deutsche Bank (2002). Inflation expectations in the United States were measured by the 10-year expected CPI inflation rate from the Federal Reserve Bank of Philadelphia Survey, and in Germany and Japan by the 10-year ahead Consensus CPI inflation forecast.

nently in downgrades. The removal of these troubled companies from the investment-grade class has moderated the impact of lower aggregate credit quality on spreads, as measured in investment-grade indices.

Price adjustments in equity and credit markets and a continued elevated pace of defaults adversely affected the balance sheets of global financial intermediaries, including commercial and investment banks that were already coping with the effects of reduced issuance and mergers and acquisitions (M&A) activity and rising credit costs on wholesale business earnings. U.S. banks had relatively strong core earnings, reflecting the steep yield curve, effective loss-reserve management, and abundant liquidity that derived partly from the outflow of funds from stocks into deposits. For securities firms, earnings have begun to rebound modestly in the second quarter, but increasing competition with banks entering the investment banking business has intensified already strong competitive pressures. Looking ahead, some U.S. institutions may face reputational risks owing to their relationships with companies involved in accounting irregularities and fraud.

European financial institutions have generally had to cope with a worse economic environment than U.S. financial institutions. Subpar economic growth has adversely affected European financial institutions' profitability, although it has not affected their systemic stability. In Germany, for example, while systemic stability is not in question, a significant increase in credit costs has added to an already high cost base of many banks. Moreover, German banks' substantial direct and indirect exposures to equity markets, on account of both extensive cross-shareholdings and, in some instances, close links to insurance companies, have recently depressed profitability. European banks' share prices—which have performed more poorly than those of U.S. institutions—may also have been affected by concerns over their generally complex accounting structures, similar to some of the more diversified U.S. financial institutions. German banks have sought to improve

upon low domestic profit margins—reflecting the dominant role of public financial institutions—by expanding into investment banking and international markets. These banks have been hit particularly strongly by deteriorating profits in the securities business, forcing many of them into strong cost-cutting efforts. Further consolidation in the domestic banking sector is likely to take place as public guarantees for the *Landesbanken* and *Sparkassen* are slated to expire in stages through end-2005. European banks have also been adversely affected by the deterioration in emerging markets. This included Spanish banks exposed to Latin America (see Figure 2.3).

From a more medium-term perspective, questions also arose about how a strategic reorientation of wholesale banking by European and U.S. institutions might more broadly affect market activity and credit flows. A confluence of factors—the aftershocks of the bursting TMT bubble, widespread market corrections, the drying-up in IPO and M&A activity, the deteriorating credit quality of corporate borrowers, and the sharp drop-off in trading and brokerage revenues—led a range of financial institutions to reassess their wholesale banking activities. Many banks announced plans for cutbacks in investment banking staff, seemingly reflecting a view that fee-driven market activities would not recover soon. In tandem, retail businesses began to look more attractive than wholesale businesses. If sustained, these trends could be consistent with a curtailment or drying up of credit to riskier borrowers, including those in emerging markets.

For Japanese banks, the economic environment—which had improved until recent months—has again deteriorated, depressing credit quality. Moreover, stock values have declined below levels attained at the end of the fiscal year in March 2002. As a result, continued high loan losses as well as losses on banks' substantial equity portfolios will reduce bank capital. Although banks have attempted to boost core profitability, including by charging higher loan margins, the weak financial state of most

borrowers (especially small and medium-sized enterprises) provides limited room for growth. Operating profits are therefore unlikely to increase significantly, particularly since bond and derivatives trading gains—which boosted profits of the major banks in the latter half of fiscal year 2001—appear largely unsustainable (Yamaoka, 2002).

Meanwhile, institutional investors, and in particular European insurance companies, were also affected by stock price adjustments and ongoing credit losses, raising concerns that they might sell riskier parts of their portfolios to raise cash.<sup>2</sup> Institutional investors generally experienced losses from credit problems as companies such as WorldCom defaulted on debt (for WorldCom, some \$30 billion in bonds—a significant share of which was held by insurance companies). Insurance company stocks in particular came under pressure, and European insurers saw their stock prices fall by 38 percent between the end of March and the end of July amid concerns about their exposures to global equity and credit markets. Reinsurers have come under pressure as well. Moody's and Standard and Poor's both initiated reviews of the triple-A credit rating of Munich Re following its move to recapitalize its U.S. subsidiary and increase provisions for claims resulting from the September 11th attacks by €500 million.

In some cases the size of losses has raised questions about the adequacy of the insurance and reinsurance sectors' capital reserves. In particular, concerns arose that pressure on solvency ratios could lead insurers to sell liquid financial assets—particularly equities—or turn to their parent companies (if any) for capital injections. In July, the U.K. Financial Services Authority changed its “resilience tests” on equity portfolios to allow insurers to base the tests on the three-month average of past equity prices, rather than the current price.<sup>3</sup> Similarly, the Swiss govern-

ment may lower the mandated rate of return for pension funds.

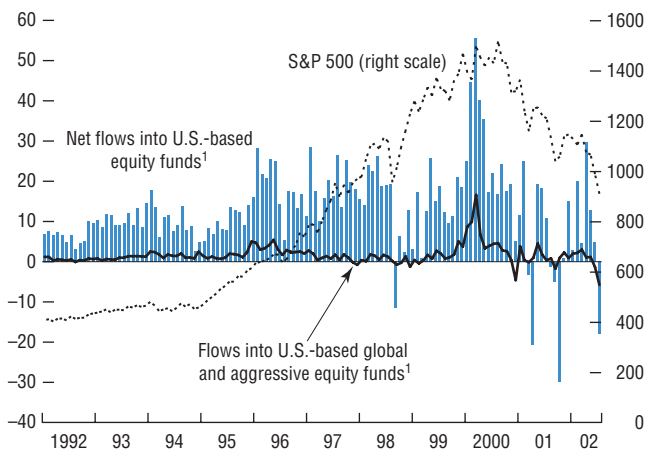
A substantial part of the revaluation in asset markets was absorbed on household balance sheets, reflecting increasing retail ownership of financial assets in major countries. In recent years households in major countries have held an increasing share of their wealth in traded assets (IMF, 2002a). As a result, financial risk is more widely spread throughout the economy, and tends to have a less direct effect on the condition of financial institutions. At the same time, this implies that financial risk could have more of an effect on economic activity. A 20 percent decline in U.S. equities is estimated to reduce U.S. consumption growth by 1 percent of GDP over two years. Moreover, the wealth effect of the recent decline in U.S. equity markets amounts to about 70 percent of disposable income—the highest percentage in the postwar period (Bridgewater Daily Observations, 2002b). Another implication is that financial market conditions may rely more on the portfolio behavior and attitudes of retail investors than in the past.

Concerns about possible retail selling have heightened amid signs of outflows from equity mutual funds. The period from 1990 to 2002 saw an unprecedented surge of flows, cumulatively totaling \$1.7 trillion, into U.S.-based equity mutual funds (Figure 2.5)—about half of which occurred when the market was above its current level. Net monthly inflows peaked at \$55.6 billion, about five times the average monthly level, in February 2000—one month before the S&P 500's peak. Flows into U.S.-based equity mutual funds held up relatively well through the first quarter of 2002, but there were \$18 billion in outflows in June and industry sources are suggesting a record high outflow of about \$47 billion in July. These recent outflows are reflecting, in part, a shift into high-grade bonds. Even with these recent outflows, the amount of retail funds

<sup>2</sup>Chapter III of the June 2002 issue of the *Global Financial Stability Report* (IMF, 2002b) discusses some of these problems, and the implications of insurers' and reinsurers' increasing financial market activities.

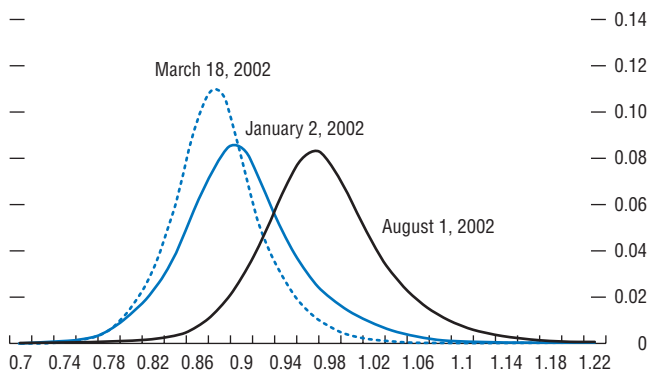
<sup>3</sup>Financial Services Authority (2002). A 25 percent fall in stock prices would be calculated as a 15 percent fall in the current price, if current prices were 10 percent under their three-month average.

**Figure 2.5. Flows into U.S.-Based Equity Funds**



Sources: AMG Sample Data; and Investment Company Institute.  
<sup>1</sup>In billions of U.S. dollars; left scale.

**Figure 2.6. Implied Risk-Neutral Probability Density Functions, Euro-U.S. Dollar, Three-Month Horizon**  
*(In percent)*



Sources: Reuters; and IMF staff estimates.

that has remained invested in equities is high relative to the accumulated inflow during the past several years. A continuation of the estimated record outflows seen in July is a risk in the period ahead, and would be consistent with households selling parts of their equity portfolios to preserve wealth and future pension incomes. This would become more likely if there were continued increases in unemployment and/or a sharp reduction in the values of other assets, such as housing.

Concerns have also arisen about a potential further deterioration of international investor sentiment toward U.S. financial markets, as seemingly reflected in the pattern of international capital flows. In the first five months of 2002, net foreign purchases of U.S. stocks were substantially lower compared with 2001. This coincided with a sharp decline in euro-area investors' purchases of foreign portfolio assets, while Japanese investors were net sellers of U.S. securities in the first five months of 2002. First quarter foreign direct investment (FDI) into the United States was also below 2001 levels, reflecting muted foreign M&A; FDI outflows also declined, putting net flows roughly in balance (Table 2.1).

Coinciding with reduced securities and FDI inflows, the dollar declined against the other major currencies. Through end-July, it declined 10 percent against the euro—temporarily breaking through parity on July 15—and 9 percent against the yen. The dollar also declined about 8 percent in nominal effective terms, unwinding its 2001 appreciation. In real effective terms, the dollar is well above its average in the 1990s, but below its peaks in the 1980s.

Derivatives markets are pricing in a possible further decline in the dollar against the other major currencies (Figure 2.6). Several conclusions can be drawn from examining the movement of probability density functions (PDFs) extracted from currency options prices:<sup>4</sup>

<sup>4</sup>Implied PDFs are intended to quantify market views of exchange rate movements and, like implied volatilities, reflect underlying assumptions and calculation methods.

**Table 2.1. Composition of U.S. Capital Flows<sup>1</sup>***(In billions of U.S. dollars; at annual rates)*

|  | 1997   | 1998   | 1999   | 2000   | 2001   | 2002:Q1 |
|--|--------|--------|--------|--------|--------|---------|
| <b>Current account balance</b>                   | -128.4 | -203.8 | -292.9 | -410.3 | -393.4 | -449.9  |
| <b>Financial account balance</b>                 | 219.2  | 63.8   | 264.9  | 409.5  | 381.8  | 397.7   |
| <b>Official capital, net</b>                     | 18.1   | -27.1  | 55.2   | 36.4   | -0.2   | 38.7    |
| Foreign official assets in the United States     | 19.0   | -19.9  | 43.7   | 37.6   | 5.2    | 36.1    |
| U.S. official reserve assets                     | -1.0   | -6.8   | 8.7    | -0.3   | -4.9   | 1.6     |
| Other U.S. government assets                     | 0.1    | -0.4   | 2.8    | -0.9   | -0.5   | 1.0     |
| <b>Private capital, net</b>                      | 201.1  | 90.9   | 209.7  | 373.1  | 382.0  | 359.1   |
| Net inflows reported by U.S. banking offices     | 151.9  | 38.3   | 57.5   | 115.1  | 110.0  | -101.8  |
| Securities transactions, net                     | 172.9  | 48.8   | 125.9  | 250.7  | 305.3  | 266.8   |
| Private foreign net purchases of U.S. securities | 291.8  | 184.9  | 254.3  | 378.2  | 400.0  | 258.6   |
| Treasury securities                              | 130.4  | 28.6   | -44.5  | -77.0  | -7.7   | -22.7   |
| Corporate and other bonds                        | 92.6   | 110.7  | 185.9  | 262.8  | 288.2  | 181.4   |
| Corporate stocks                                 | 68.8   | 45.6   | 112.9  | 192.4  | 119.5  | 99.9    |
| U.S. net purchase of foreign securities          | -119.0 | -136.1 | -128.4 | -127.5 | -94.7  | 8.2     |
| Bonds  | -61.4  | -34.9  | -14.1  | -23.9  | 12.1   | 2.3     |
| Stocks   | -57.6  | -101.3 | -114.3 | -103.6 | -106.8 | 5.9     |
| Direct investment, net                           | 0.8    | 36.4   | 100.6  | 129.5  | 3.0    | 12.7    |
| Foreign direct investment in the United States   | 105.6  | 179.0  | 289.5  | 307.7  | 130.8  | 102.8   |
| U.S. direct investment abroad                    | -104.8 | -142.6 | -188.9 | -178.3 | -127.8 | -90.1   |
| Foreign holdings of U.S. currency                | 24.8   | 16.6   | 22.4   | 1.1    | 23.8   | 18.1    |
| Other  | -5.2   | -15.1  | -17.1  | 23.4   | 68.0   | 122.7   |
| <b>Statistical discrepancy</b>                   | -91.2  | 139.3  | 31.3   | 0.0    | 10.7   | 51.4    |

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. International Transactions Accounts Data*; and Board of Governors of the Federal Reserve System, *Federal Reserve Bulletin*, May 2002.

<sup>1</sup>Data for 2002:Q1 are annualized. Capital account balance is not shown.

- First, market participants are less certain about their expectations of the dollar than they were earlier this year. The increase in implied volatility of euro/dollar options is reflected in a wider degree of dispersion of the most recent PDF.
- Second, the market attaches considerably more weight to a stronger euro vis-à-vis the dollar than it did earlier this year. For example, whereas in March the market placed virtually no weight to the euro reaching parity against the dollar (three months out), the market is now putting considerable weight on that possibility.<sup>5</sup>
- Third, the balance of expectations is skewed toward further dollar depreciation over the next three months. The cost of insuring against a dollar depreciation relative to the cost of insuring against a dollar appreciation of the same degree—the so-called risk reversal price—has risen to a level last seen during the uncertainty generated by the September terrorist attacks.<sup>6</sup> Thus, if taken at face value, market beliefs imply a continued depreciation of the dollar.

They should not be interpreted as accurate forecasts of future asset values. Nonetheless, their informational content is reasonably reliable. Comparing risk reversal prices as a leading indicator of expected dollar depreciation over the following three months with actually realized dollar depreciation over that period indicates a reasonable fit of the past year. Correlations between forecast and realized currency appreciations indicate a broad ability to predict the direction of movements.

<sup>5</sup>The probability associated with a particular exchange rate outcome is the result of the location of the PDF. This, in turn, is driven by the current forward rate (the mean), which is determined by the spot rate and interest differentials.

<sup>6</sup>A risk reversal is the price of a long out-of-the-money foreign currency call option relative to the price of an equally out-of-the-money short foreign currency put option.

## Main Financial Market Risks Associated with Shifts in the Pattern of Global Capital Flows

Slowing foreign purchases of U.S. financial assets, the apparent underlying “shift to quality,” and the weakening dollar raise questions about potential further changes in the pattern of international capital flows. In particular, the record net demand for U.S. assets during recent years—amounting to \$400 billion in 2001, or a full two-thirds of the rest of the world’s net savings—seems to have reflected widespread and persistent expectations that the U.S. economy would continue to generate the highest risk-adjusted returns on investments.<sup>7</sup> This raises three questions. First, what could be the international financial market implications if international portfolio managers and investors were to begin perceiving relatively more attractive investment opportunities elsewhere—including in the home markets that they have traditionally overweighted? Second, through what channels might a change in the pattern of capital flows impinge on international markets? And third, based partly on historical experience, is there cause for concern about the financial stability implications of such adjustments?

The experience of 1987–1991—when an adjustment in the U.S. external imbalance from 3½ percent of GDP to zero occurred without triggering turbulence in mature markets—suggests that U.S. capital inflows might decline without unduly affecting international financial stability. Nevertheless, history may be an imperfect guide to the risks ahead, given the structural changes during the 1990s. In addition, adjustments in mature markets during the 1990s have significantly affected financing to emerging markets. This is not surprising—emerging markets comprise only 5 to 7 percent of global bond and equity market capitalization, and in 2001 *gross* emerging market financing was less than half of *net* U.S. inflows. A

full assessment of the risks, therefore, requires an understanding of the main forces that have led to the current situation in which the United States intermediates and absorbs an outsized share of international capital flows, and of the attendant risks of a shift in the pattern of flows that could affect conditions in U.S. and international financial markets.

## The Major Financial Centers as Global Intermediaries and Investment Destinations

The major countries’ financial systems, particularly the U.S. financial system, are major “hubs” for gross international capital flows and investment. In 2000, the peak year for total global flows, the Group of Seven (G-7) countries accounted for \$2.6 trillion in gross capital inflows and \$2.3 trillion in outflows, or about 70 percent of the respective totals (Table 2.2; gross emerging markets inflows amounted to 6 percent of total G-7 outflows).<sup>8</sup> In effect, the major country financial systems serve as “international banks,” taking in gross inflows of capital from abroad, retaining some of the flows, and distributing the rest internationally. In return, international financial centers generate jobs in the financial industry, incomes, and even tax revenues, and national markets benefit by having greater access to international capital and liquidity. This role as a hub reflects a number of characteristics of these financial systems, including the wide range and sophistication of products and services offered by financial institutions and exchanges; the existence of diversified institutions that have large capital bases to support an array of business lines; and strong and predictable legal, regulatory, and supervisory environments.

The U.S. economy and financial system stands out as a large intermediary, accounting for more than one-third of global gross inflows and one-fifth of outflows. On the supply side, U.S. in-

<sup>7</sup>The macroeconomic counterpart of this has been concern about the size of the current account deficit, which at just over 4 percent of GDP in 2001 is approaching the level historically associated with reversals in the major countries (Freund, 2000).

<sup>8</sup>The figures do not net out transactions between countries owing to a lack of bilateral data.



vestors have \$7 trillion in gross claims, and nearly \$5 trillion in direct and portfolio claims, on foreign entities. On the demand side, U.S. borrowers are the largest net issuers in international fixed-income markets and the second largest in international equity markets (in 2000, they were the largest equity issuers by a wide margin).

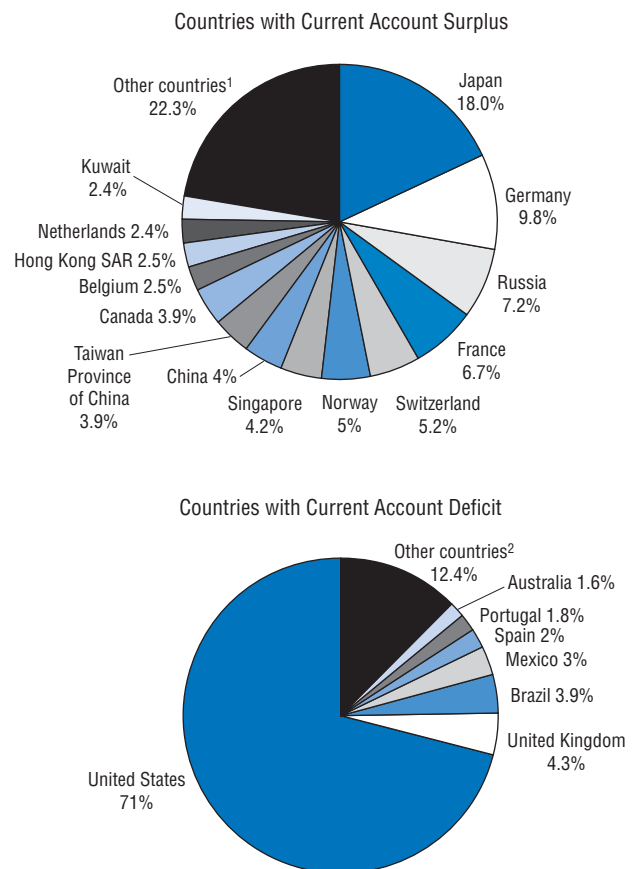
On balance, and as emphasized above, the United States attracts the lion's share—more than 70 percent—of global net foreign savings, absorbing a record \$400 billion in 2001 (Figure 2.7).<sup>9</sup> Three factors have driven the massive net inflows to U.S. financial markets and may provide clues about what might sustain—or cause further slowing in—net inflows. First, and most important, portfolio flows have been driven by international investors' perception that U.S. financial assets offer superior investment opportunities. This perception reflected higher productivity growth in the United States than in the other major economies, expectations that this growth will continue, and a belief that the U.S. macroeconomic policy framework has been more conducive to high output growth than the frameworks in place elsewhere. In the past, both risk-adjusted and unadjusted U.S. asset returns reinforced this perception, as U.S. equity and fixed income markets outperformed those in Europe and Japan on a risk-adjusted basis (Table 2.3).<sup>10</sup> Similarly, interest rate differentials—which reflect cross-country differences in short-term risk-adjusted returns, given that short-term money-market risks are small—have driven short-term banking flows.

Second, the economic globalization of the 1990s enhanced the strategic motives for businesses to expand internationally to compete, spurring a boom in cross-border M&A and FDI.

<sup>9</sup>To put this figure in context, U.S. GDP is about 60 percent of the total GDP of deficit countries. As an alternative measure, the United States absorbs about 6 percent of total global savings. Here, the focus is on cross-border savings flows that are reflected in capital flows.

<sup>10</sup>The table omits comparisons on FDI returns, which for FDI in the United States have been consistently low compared to the return on U.S. FDI abroad and the return on other U.S. companies. Research has been unable to explain much of this low return (Mataloni, 2000).

**Figure 2.7. Shares of Countries with Current Account Surplus and Deficit in 2001**



Source: IMF staff estimates.

<sup>1</sup>Other countries include all countries with shares of total surplus less than 2.4%.

<sup>2</sup>Other countries include all countries with shares of total deficit less than 1.6%.

**Table 2.2. Global Capital Inflows and Outflows<sup>1</sup>**  
(In billions of U.S. dollars)

|                              | Inflows |        |       |       |       |       |       |       |        |         |       |
|------------------------------|---------|--------|-------|-------|-------|-------|-------|-------|--------|---------|-------|
|                              | 1991    | 1992   | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999   | 2000    | 2001  |
| <b>United States</b>         |         |        |       |       |       |       |       |       |        |         |       |
| Direct investment            | 23.2    | 19.8   | 51.4  | 46.1  | 57.8  | 86.5  | 105.6 | 178.2 | 301.0  | 287.7   | 158.0 |
| Portfolio investment         | 57.5    | 72.0   | 111.0 | 139.4 | 237.5 | 367.7 | 385.6 | 269.4 | 354.8  | 474.6   | 540.3 |
| Other investment             | 30.1    | 78.9   | 119.7 | 120.5 | 170.4 | 131.8 | 267.9 | 56.9  | 158.0  | 262.0   | 197.2 |
| Reserve assets               | n.a.    | n.a.   | n.a.  | n.a.  | n.a.  | n.a.  | n.a.  | n.a.  | n.a.   | n.a.    | n.a.  |
| Total capital flows          | 110.8   | 170.7  | 282.1 | 306.0 | 465.7 | 586.1 | 759.1 | 504.4 | 813.8  | 1,024.2 | 895.5 |
| <b>Canada</b>                |         |        |       |       |       |       |       |       |        |         |       |
| Direct investment            | 2.9     | 4.8    | 4.7   | 8.2   | 9.3   | 9.6   | 11.5  | 22.5  | 25.2   | 62.8    | 27.6  |
| Portfolio investment         | 27.5    | 20.5   | 41.4  | 17.2  | 18.4  | 13.7  | 11.7  | 16.6  | 2.5    | 13.7    | 19.3  |
| Other investment             | -0.3    | -2.2   | -6.7  | 16.0  | -3.9  | 15.7  | 28.0  | 6.1   | -8.5   | 0.5     | 5.2   |
| Reserve assets               | n.a.    | n.a.   | n.a.  | n.a.  | n.a.  | n.a.  | n.a.  | n.a.  | n.a.   | n.a.    | n.a.  |
| Total capital flows          | 30.2    | 23.1   | 39.4  | 41.4  | 23.9  | 39.1  | 51.2  | 45.2  | 19.2   | 76.9    | 52.1  |
| <b>Japan</b>                 |         |        |       |       |       |       |       |       |        |         |       |
| Direct investment            | 1.3     | 2.8    | 0.1   | 0.9   | 0.0   | 0.2   | 3.2   | 3.3   | 12.3   | 8.2     | 6.2   |
| Portfolio investment         | 127.3   | 9.6    | -6.1  | 64.5  | 59.8  | 66.8  | 79.2  | 56.1  | 126.9  | 47.4    | 60.5  |
| Other investment             | -108.2  | -105.2 | -32.7 | -5.6  | 97.3  | 31.1  | 68.0  | -93.3 | -265.1 | -10.2   | -17.6 |
| Reserve assets               | n.a.    | n.a.   | n.a.  | n.a.  | n.a.  | n.a.  | n.a.  | n.a.  | n.a.   | n.a.    | n.a.  |
| Total capital flows          | 20.4    | -92.9  | -38.7 | 59.8  | 157.1 | 98.1  | 150.4 | -34.0 | -125.9 | 45.4    | 49.1  |
| <b>United Kingdom</b>        |         |        |       |       |       |       |       |       |        |         |       |
| Direct investment            | 16.5    | 16.6   | 16.5  | 10.7  | 21.7  | 27.4  | 37.4  | 74.7  | 87.8   | 119.9   | 53.9  |
| Portfolio investment         | 18.2    | 16.2   | 43.6  | 47.0  | 58.8  | 68.0  | 43.5  | 35.3  | 181.0  | 259.2   | 55.2  |
| Other investment             | 18.5    | 96.4   | 191.4 | -10.8 | 106.2 | 254.4 | 328.4 | 97.2  | 100.6  | 426.1   | 319.9 |
| Reserve assets               | n.a.    | n.a.   | n.a.  | n.a.  | n.a.  | n.a.  | n.a.  | n.a.  | n.a.   | n.a.    | n.a.  |
| Total capital flows          | 53.2    | 129.1  | 251.6 | 46.9  | 186.7 | 349.7 | 409.2 | 207.2 | 369.4  | 805.2   | 428.9 |
| <b>Euro area<sup>2</sup></b> |         |        |       |       |       |       |       |       |        |         |       |
| Direct investment            | ...     | ...    | ...   | ...   | ...   | ...   | ...   | ...   | 208.1  | 378.6   | 110.1 |
| Portfolio investment         | ...     | ...    | ...   | ...   | ...   | ...   | ...   | ...   | 279.2  | 270.0   | 270.1 |
| Other investment             | ...     | ...    | ...   | ...   | ...   | ...   | ...   | ...   | 208.2  | 328.6   | 221.6 |
| Reserve assets               | n.a.    | n.a.   | n.a.  | n.a.  | n.a.  | n.a.  | n.a.  | n.a.  | n.a.   | n.a.    | n.a.  |
| Total capital flows          | ...     | ...    | ...   | ...   | ...   | ...   | ...   | ...   | 695.6  | 977.1   | 601.8 |
| <b>Emerging markets</b>      |         |        |       |       |       |       |       |       |        |         |       |
| Direct investment            | 39.4    | 48.7   | 71.1  | 97.4  | 126.7 | 148.4 | 180.7 | 175.5 | 199.6  | 187.6   | 213.9 |
| Portfolio investment         | 26.6    | 43.7   | 101.7 | 91.2  | 21.7  | 79.5  | 56.6  | 31.2  | 48.2   | 30.4    | 9.6   |
| Other investment             | 35.2    | 74.4   | 11.9  | -13.8 | 104.8 | 52.5  | 89.9  | 22.7  | -74.3  | -68.9   | 2.3   |
| Reserve assets               | n.a.    | n.a.   | n.a.  | n.a.  | n.a.  | n.a.  | n.a.  | n.a.  | n.a.   | n.a.    | n.a.  |
| Total capital flows          | 101.2   | 166.8  | 184.8 | 174.9 | 253.2 | 280.5 | 327.3 | 229.4 | 173.5  | 149.0   | 225.8 |

Sources: IMF staff estimates; and IMF, *International Financial Statistics*.

<sup>1</sup>The total net capital flows are the sum of direct investment, portfolio investment, other investment flows, and reserve assets. "Other investment" includes bank loans and deposits.

<sup>2</sup>For Belgium and Luxembourg, data are not available.

This boom was particularly reflected in FDI into the United States, particularly from Europe and other regions with which the United States has had close trading relationships, and as many firms evidently sought to establish a strategic presence in U.S. markets. It was also reflected in financing transactions such as stock swaps.

Third, monetary authorities and others have accumulated U.S. dollar securities for transac-

tion purposes, and (for monetary authorities) to establish a cushion of dollar reserves to manage exchange rates. Significantly, central banks have bought considerable amounts of top-rated U.S. fixed income securities for their reserve portfolios, while other foreign financial institutions have bought dollar securities for hedging purposes (Schinasi, Kramer, and Smith, 2001).<sup>11</sup> These activities reflected the dollar's role in

<sup>11</sup>Eichengreen and Mathieson (2000) find that trade and financial flows significantly influence the currency composition of official reserves.

| Outflows |        |        |        |        |        |        |        |        |        |        |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1991     | 1992   | 1993   | 1994   | 1995   | 1996   | 1997   | 1998   | 1999   | 2000   | 2001   |
| -37.9    | -48.3  | -84.0  | -80.2  | -98.8  | -91.9  | -104.8 | -142.5 | -155.4 | -152.4 | -156.0 |
| -45.7    | -49.2  | -146.2 | -60.3  | -122.5 | -149.8 | -119.0 | -136.1 | -131.2 | -124.9 | -97.7  |
| 13.4     | 19.1   | 31.0   | -40.9  | -121.4 | -178.9 | -262.8 | -74.2  | -159.2 | -303.3 | -181.0 |
| 5.8      | 3.9    | -1.4   | 5.3    | -9.7   | 6.7    | -1.0   | -6.7   | 8.7    | -0.3   | -4.9   |
| -64.4    | -74.4  | -200.5 | -176.0 | -352.4 | -413.9 | -487.6 | -359.6 | -437.1 | -580.9 | -439.6 |
| -5.8     | -3.5   | -5.7   | -9.3   | -11.5  | -13.1  | -23.1  | -34.3  | -18.4  | -44.0  | -37.1  |
| -10.2    | -9.8   | -13.8  | -6.6   | -5.3   | -14.2  | -8.6   | -15.1  | -15.6  | -42.1  | -22.4  |
| 0.9      | -3.5   | -0.4   | -20.4  | -8.3   | -21.1  | -16.2  | 9.5    | 9.1    | -0.9   | -7.6   |
| 1.8      | 4.8    | -0.9   | 0.4    | -2.7   | -5.5   | 2.4    | -5.0   | -5.9   | -3.7   | -2.2   |
| -13.2    | -12.1  | -20.8  | -35.9  | -27.9  | -53.9  | -45.4  | -44.9  | -30.8  | -90.7  | -69.3  |
| -31.6    | -17.4  | -13.8  | -18.1  | -22.5  | -23.4  | -26.1  | -24.6  | -22.3  | -31.5  | -38.5  |
| -81.6    | -34.0  | -63.7  | -92.0  | -86.0  | -100.6 | -47.1  | -95.2  | -154.4 | -83.4  | -106.8 |
| 26.5     | 46.6   | 15.1   | -35.1  | -102.2 | 5.2    | -192.0 | 37.9   | 266.3  | -4.1   | 46.6   |
| 8.4      | -0.6   | -27.5  | -25.3  | -58.6  | -35.1  | -6.6   | 6.2    | -76.3  | -49.0  | -40.5  |
| -78.4    | -5.4   | -90.0  | -170.4 | -269.4 | -154.0 | -271.7 | -75.8  | 13.4   | -168.0 | -139.2 |
| -16.8    | -19.7  | -27.3  | -34.9  | -45.3  | -34.8  | -62.4  | -122.1 | -207.5 | -266.2 | -39.6  |
| -56.9    | -49.3  | -133.6 | 31.5   | -61.7  | -93.1  | -85.0  | -53.0  | -39.9  | -96.4  | -128.7 |
| 35.3     | -60.5  | -68.5  | -42.4  | -74.9  | -215.3 | -275.9 | -26.8  | -92.6  | -412.7 | -248.8 |
| -4.7     | 2.4    | -1.3   | -1.5   | 0.9    | 0.7    | 3.9    | 0.3    | 1.0    | -5.3   | 4.5    |
| -43.0    | -127.0 | -230.5 | -47.4  | -181.0 | -342.6 | -419.4 | -201.6 | -338.9 | -780.6 | -412.7 |
| ...      | ...    | ...    | ...    | ...    | ...    | ...    | ...    | -333.1 | -351.3 | -203.6 |
| ...      | ...    | ...    | ...    | ...    | ...    | ...    | ...    | -331.2 | -385.3 | -239.2 |
| ...      | ...    | ...    | ...    | ...    | ...    | ...    | ...    | -35.5  | -166.7 | -217.7 |
| ...      | ...    | ...    | ...    | ...    | ...    | ...    | ...    | 11.6   | 16.1   | 16.9   |
| ...      | ...    | ...    | ...    | ...    | ...    | ...    | ...    | -688.2 | -887.2 | -643.7 |
| -6.9     | -13.3  | -16.7  | -16.6  | -26.6  | -31.4  | -38.0  | -23.0  | -30.6  | -31.6  | -24.6  |
| 1.5      | -1.6   | 11.0   | 24.0   | 14.7   | 6.9    | 9.6    | -11.8  | -26.1  | -37.4  | -42.3  |
| 29.2     | -19.6  | -7.2   | -36.8  | -16.2  | -39.1  | -105.9 | -87.4  | -78.1  | -90.7  | -50.2  |
| -46.3    | -58.8  | -62.5  | -68.1  | -115.7 | -107.8 | -72.1  | -38.2  | -95.8  | -124.3 | -139.0 |
| -22.5    | -93.3  | -75.4  | -97.5  | -143.8 | -171.4 | -206.4 | -160.4 | -230.6 | -284.0 | -256.1 |

cross-border transactions, a belief in its continued strength and stability, and in some regions a motive to build up foreign exchange reserves. At the end of 2001, monetary authorities held dollar reserves of \$1.5 trillion, 75 percent of reserves in all currencies (Bank for International Settlements, 2002).

Over the past decade, strong foreign appetite for U.S. financial assets has been reflected in a rise in U.S. financial asset prices and the dollar that may have both validated and enhanced the view that U.S. markets offered the best risk-ad-

justed returns globally. Since 1991, and even taking into account its recent decline, the dollar has appreciated almost 30 percent in nominal trade-weighted terms and by more than 20 percent in real effective terms. From the beginning of 1991 to its peak in autumn 2000, the MSCI U.S. equity total return index rose 490 percent, and even taking into account the correction since autumn 2000, the index still rose by 270 percent. Since 1991, the high-yield U.S. corporate bonds have yielded an average of 11 percent a year. In light of these facts, it is hardly surpris-

**Table 2.3. Returns in Global Markets**  
*(End-December 1991 through end-May 2002; total market returns in U.S. dollars; in percent)*

|              | United States | Japan | EMU <sup>1</sup> |
|--------------|---------------|-------|------------------|
| Stock market | 217           | -22   | 157              |
| Sharpe ratio | 0.26          | 0.01  | 0.20             |
| Bond market  | 107           | 76    | 57               |
| Sharpe ratio | 0.42          | 0.15  | 0.15             |

Source: Primark Datastream.

<sup>1</sup>The bond market data refer to the German market.

ing that formal tests correlate the dollar's rise over the past decade with inflows to U.S. securities markets (Fender and Galati, 2001, and Brooks and others, 2001).

Heavy foreign ownership of U.S. financial assets means that a further deterioration in U.S. markets could impose mark-to-market losses on foreign financial institutions and cause them either to reduce their purchases of riskier securities or cut back riskier positions. As of the end of 2001, foreign investors held about \$1.7 trillion in U.S. equities, \$1.2 trillion in corporate debt, and another \$1.2 trillion in treasury debt, representing 12 percent, 24 percent, and 42 percent of the outstanding amounts, respectively (Table 2.4). Even a 10 percent reduction in these positions—which would be as large as 2001 inflows to U.S. equities and half of 2001 inflows to U.S. bond markets—could affect conditions in U.S. financial markets. A pullback by foreign investors in equity markets could particularly adversely affect liquidity in U.S. equity markets, where they account for about 20 percent of stock market transactions (Griever, Lee, and Warnock, 2001).

### Sources of Risks and Financial Stability Implications

As noted, the recent decline in the dollar has coincided with both a slowing in foreign inflows and a deterioration in U.S. financial market conditions. This suggests a risk that the motives for foreign investment in the U.S. highlighted above—which hinge on a virtuous cycle of favorable risk-adjusted returns in U.S. financial markets, a strong and stable dollar, and robust U.S.

productivity and economic growth—could weaken and further affect inflows and U.S. financial market conditions. In this light, the recent deterioration in U.S. asset markets and uncertainties surrounding the economic outlook and U.S. productivity raise questions about whether the United States will continue to attract and distribute substantial shares of international capital.

So far—and notwithstanding the recent losses in investor trust and confidence—although foreign demand for U.S. securities has declined, four factors have supported it at a reasonably high level. First, the market is still expecting a U.S. economic recovery, albeit at a slower pace. Second, it is unclear that activity will improve more quickly or strongly in the other major economies. Notwithstanding uncertainties about medium-term imbalances, market participants widely consider U.S. fiscal and monetary policies to be more aggressive in countering recessionary forces than those in the euro area, and more potent than those in Japan. Third, U.S. financial markets are still among the largest, most liquid, and diverse in the world, and it is unclear whether other markets could accommodate the sizable flows that the U.S. markets have absorbed without outsized price adjustments. In sum, while risk-adjusted expected returns on U.S. assets likely have declined, they are still seemingly perceived as superior to returns on the major alternatives. As a result, positioning by international investors has continued to supply large amounts of net foreign financing to the United States. Fourth, the aforementioned structural factors have supported strong gross flows into U.S. financial markets in the past, and will no doubt lend such support in the future, notwithstanding conjunctural factors that could affect net flows. In addition to these factors, in a volatile market environment, flight to quality could support gross inflows to the U.S. treasury market.

Against this background, and given the historical experience with U.S. capital account adjustments (explained later in this chapter), particularly in the 1980s, there would seem to be a

**Table 2.4. Market Value of Foreign Holdings of U.S. Long-Term Securities, by Type of Security***(In billions of U.S. dollars; amounts outstanding, end of period, not seasonally adjusted)*

|  | 1974    | 1984    | 1994     | 1995     | 1996     | 1997     | 1998     | 1999     | 2000     | 2001     |
|--|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|
| <b>Corporate equity</b>  |         |         |          |          |          |          |          |          |          |          |
| Total outstanding  | 627.8   | 1,763.2 | 5,690.7  | 7,698.0  | 9,278.7  | 12,093.0 | 14,101.1 | 17,554.6 | 15,779.4 | 13,684.3 |
| Foreign owned  | 23.9    | 107.0   | 397.7    | 527.6    | 656.8    | 919.5    | 1,175.1  | 1,537.8  | 1,748.3  | 1,697.7  |
| Percent foreign owned  | 3.8     | 6.1     | 7.0      | 6.9      | 7.1      | 7.6      | 8.3      | 8.8      | 11.1     | 12.4     |
| <b>Corporate debt</b>  |         |         |          |          |          |          |          |          |          |          |
| Total outstanding  | 274.5   | 671.7   | 2,261.7  | 2,548.7  | 2,843.1  | 3,179.5  | 3,708.2  | 4,156.4  | 4,545.4  | 5,189.9  |
| Foreign owned  | 4.0     | 90.5    | 311.4    | 369.5    | 453.2    | 537.8    | 660.0    | 820.8    | 1,003.9  | 1,234.6  |
| Percent foreign owned  | 1.5     | 13.5    | 13.8     | 14.5     | 15.9     | 16.9     | 17.8     | 19.7     | 22.1     | 23.8     |
| <b>Marketable U.S. Treasury securities<sup>1</sup></b>                       |         |         |          |          |          |          |          |          |          |          |
| Total outstanding  | 282.9   | 1,247.4 | 3,126.0  | 3,307.0  | 3,459.7  | 3,456.8  | 3,355.4  | 3,281.0  | 2,966.9  | 2,983.0  |
| Foreign owned  | 60.1    | 200.3   | 632.6    | 841.3    | 1,093.3  | 1,252.0  | 1,318.8  | 1,238.9  | 1,222.0  | 1,248.6  |
| Percent foreign owned  | 21.2    | 16.1    | 20.2     | 25.4     | 31.6     | 36.2     | 39.3     | 37.8     | 41.2     | 41.9     |
| <b>U.S. government corporation and federally sponsored agency securities</b> |         |         |          |          |          |          |          |          |          |          |
| Total outstanding  | 106.1   | 529.4   | 2,199.4  | 2,405.0  | 2,634.8  | 2,847.6  | 3,320.5  | 3,912.2  | 4,344.8  | 4,970.9  |
| Foreign owned  | 2.8     | 10.1    | 125.1    | 154.8    | 196.3    | 246.5    | 303.4    | 394.6    | 550.3    | 715.5    |
| Percent foreign owned  | 2.6     | 1.9     | 5.7      | 6.4      | 7.5      | 8.7      | 9.1      | 10.1     | 12.7     | 14.4     |
| <b>Combined market</b>   |         |         |          |          |          |          |          |          |          |          |
| Total outstanding  | 1,291.3 | 4,211.7 | 13,277.8 | 15,958.7 | 18,216.3 | 21,576.9 | 24,485.2 | 28,904.2 | 27,636.5 | 26,828.1 |
| Foreign owned  | 90.8    | 407.9   | 1,466.8  | 1,893.2  | 2,399.6  | 2,955.8  | 3,457.3  | 3,992.1  | 4,524.5  | 4,896.4  |
| Percent foreign owned  | 7.0     | 9.7     | 11.0     | 11.9     | 13.2     | 13.7     | 14.1     | 13.8     | 16.4     | 18.3     |

Sources: Federal Reserve Statistical Release, Z.1 *Flow of Funds*, Table L, June 6, 2002; and Bureau of Public Debt, *Monthly Statement of the Public Debt of the United States*.

<sup>1</sup>Amounts outstanding of marketable Treasury securities are from the Bureau of Public Debt, *Monthly Statement of the Public Debt of the United States*. The data on foreign holdings are from the Z.1, *Flow of Funds*.

small likelihood of a sudden and marked shift in investor sentiment against U.S. assets, an abrupt reversal of flows into U.S. financial markets, precipitous declines in the international value of the dollar and U.S. securities prices, and accompanying rises in U.S. dollar interest rates. These risks nonetheless warrant consideration, for three reasons.

First, financial market shocks are more easily transmitted between global financial centers and institutions than in years past, reflecting portfolio rebalancing by large complex financial institutions that hold positions and intermediate flows in a variety of markets and countries (the “common ownership” channel of transmission). These large institutions have concentrated and rapidly changing financial exposures (direct and through counterparties) to interest rates and other financial asset prices, in domestic and global interbank, foreign exchange, and securities markets, including the OTC derivatives markets. Shocks to one part of this portfolio can reduce the capital cushion allocated to it, and

efforts to rebuild that cushion can transmit the shock to other markets as institutions rebalance their exposures and/or reduce risk through widespread cutbacks in market-making and positions.

Second, because a greater number of developing countries have become integrated into the global economy and financial system, emerging market economies (in particular) have become more vulnerable to shocks that are transmitted through patterns of capital flows and international financial markets—much more so than are the mature market economies. In particular, changes in conditions in U.S. dollar markets have increasingly affected international financing conditions for emerging markets. For example, periods of rising U.S. dollar interest rates and more volatile financial asset prices have substantially adversely affected the cost and availability of external financing for Latin American economies, largely because of the indirect effects of lower perceived creditworthiness and higher investor risk aversion. Asian emerging markets

have been affected through both the higher cost of external finance and the effects on domestic financial markets, which tend to be linked with and reflect disruptions in U.S. dollar markets. These relationships are reflected in the aforementioned correlation between U.S. and mature financial market conditions and financing conditions for emerging market countries.

Third, and as noted, foreign investors have an increasing and significant presence in U.S. financial markets and effect on pricing, liquidity, and flows in those markets. Thus, an adjustment in foreign investors' portfolios could have a more marked effect on U.S. financial market conditions than past adjustments have had. Moreover, foreign investors can have significant exposures to price fluctuations in U.S. financial markets; it has been estimated that foreign investors have sustained mark-to-market losses of \$400 to \$600 billion on equity and FDI exposures alone, not including credit and mark-to-market losses on corporate bond exposures (Bridgewater Daily Observations, 2002a). These losses have raised concerns about the associated wealth effects, and raise questions about whether foreign investors currently see themselves as overweight in U.S. dollar assets.<sup>12</sup>

In this environment, further portfolio shifts by U.S. retail investors and foreign investors (institutional and/or retail) are key sources of risk, in part because they could tip the balance of selling pressures in U.S. financial markets. Selling by domestic retail investors in U.S. markets, if it occurred, would put further downward pressure on asset prices and exacerbate the wealth effects on households and institutions from the price declines that have already taken place. Although low valuations might encourage greater buying by contrarian investors, this stabilizing influence might be partly offset if foreign demand for U.S. securities slackened further—if, for example, U.S. dollar securities came to be seen by foreign investors as no longer offering superior risk-

adjusted returns compared with other markets. The resulting stagnation in foreign demand for U.S. securities could lead the dollar and U.S. asset prices to decline in value and become more volatile, posing the risk of adverse market dynamics and spillovers across international capital markets.

A key question is how rapidly these adjustments would occur. Past market corrections, by and large, have not been characterized by widespread panic selling by retail investors. As for portfolio shifts by foreign investors, experience suggests that adjustment of net capital inflows themselves would probably occur at a relatively moderate pace over a period of time. Moreover, any adjustment of net financing to the United States would likely be spread over a number of years, based on historical experience (discussed later in this chapter). Meanwhile, the structural factors that have supported the U.S. role as a "hub" for international financial activity would remain intact, lending support to gross flows into and out of the U.S. financial system.

Abrupt adjustments could also substantially adversely affect emerging markets. The investor base for emerging market bonds is presently dominated by crossover (as opposed to dedicated) investors, many of whom view high-yield and emerging market bonds as asset classes that have similar levels of risk. Therefore, periods of heightened risk aversion following disturbances in the high-yield market can lead crossover investors to sell both high-yield and emerging market bonds. That said, the linkages between the two markets are not always tight, and in some instances reflect macroeconomic factors (Arora and Cerisola, 2000). Nevertheless, the sharp sell-off of high-yield bonds in October 2000 demonstrates that difficulties in high-yield markets can be accompanied by adverse effects on financing conditions for emerging markets.

An examination of episodes when the dollar depreciated significantly suggests that sharp, and

<sup>12</sup>Nevertheless, Mann (forthcoming) questions whether the share of U.S. assets in global portfolios predicts future adjustments. Similarly, Eichengreen and Mathieson (2000) suggest that the currency composition of central bank reserve portfolios is not apt to change abruptly.



even prolonged, moves in the dollar have not by themselves led to marked and sustained adverse price dynamics in the major equity markets or financial services stock prices. Nevertheless, the consequences of dollar adjustments have been much more severe for some emerging market economies. In addition, as suggested above, the changing structure of global financial intermediation limits history's usefulness as a guide to the risks.

Neither is there much precedent for the current degree of U.S. dependence on foreign capital, and the associated potential "stress test" of a reversal. During 1981–87, the capital account moved from near balance to a surplus of 3.4 percent of GDP; the surplus was then reduced (more rapidly at first) through 1991, when it balanced. In the event, the U.S. dollar appreciated in nominal effective terms through 1985, depreciated during 1986–1987 (following the Plaza Accord on official intervention), and has appreciated steadily since 1987. There is, therefore, no clear evidence that a reversal in net capital inflows precipitated a sharp depreciation in the dollar.<sup>13</sup>

In sum, the present level of capital flows to the United States is unprecedented, raising the question about potential effects on financial stability if and when an adjustment occurs. The limited historical evidence suggests the relatively benign conclusion that a manageable adjustment might occur through a combination of financial market quantities (i.e., flows) and prices, and would not involve serious threats to systemic financial stability. Such an outcome would most likely involve corrections in U.S. dollar asset markets, possibly a depreciating dollar and rising U.S. interest rates, and diminished optimism about U.S. corporate profitability. If abrupt adjustments in financial markets occurred, extreme market dynamics could cause difficulties for individual global financial institutions and for a broad range of emerging market economies.

\* \* \*

As noted in the first part of this chapter, since the publication of the June 2002 *Global Financial Stability Report*, there was a general further erosion of investor confidence and increased risk aversion, which seems to have subsided somewhat in recent weeks. As a result of this risk aversion, global financial markets, and the major equity markets in particular, experienced dramatic adjustments in both the level and volatility of asset prices and in trading volumes. In recent weeks equity valuations have rebounded somewhat, and by mid-August, equity valuations were by-and-large closer to historical averages in terms of traditional measures such as P/E ratios and ratios of market capitalizations to GDP. While credit market conditions remained tight for higher-risk borrowers and could get worse before they improve, a more economy-threatening withdrawal from risk taking and lending had been avoided. Moreover, although the financial institutions that intermediate the bulk of international capital flows—commercial and investment banks, institutional investors, and insurance and reinsurance companies—were clearly adversely affected by market conditions, many (though not all) of them were well capitalized and liquid going into this recent period of adjustment, and have remained resilient.

Nevertheless considerable downside risks remain in the immediate future:

- the possibility of further equity price declines, and in the worst case scenario panic selling by both institutional and retail investors;
- a further weakening of financial institutions' balance sheets and profit outlooks, in particular among banks and insurers in Europe; and
- an accelerating slowdown in net capital inflows to the United States and the associated potential for substantial exchange rate movements.

There are also risks emanating from emerging market economies and financial systems that could affect investor sentiment and lead to a fur-

<sup>13</sup>On the other hand, the U.S. stock market did fall sharply in 1987, and did not recover lost ground for nearly two years afterward. The 1987 stock market crash resulted in a number of official reports on the source of the crash, none of which tied the crash to the current account deficit or to the behavior of foreign investors.

ther erosion of confidence and greater risk aversion, as discussed in the next chapter.

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