

# How Capital Markets Enhance Economic Performance and Facilitate Job Creation

**Global Markets Institute**  

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## Introduction

Our main thesis is that well-developed capital markets generate many economic benefits, including higher productivity growth, greater employment opportunities, and improved macroeconomic stability. To focus on these significant benefits, we examine three issues: (1) the importance of capital markets in facilitating superior economic performance, (2) how the capital markets foster job creation, and (3) the necessary preconditions for the development of well-functioning capital markets. Our analysis focuses on two particular sets of comparisons. First, within the United States, how has macroeconomic performance improved over time as the capital markets have become more dominant? Second, across countries, can one explain the superior macroeconomic performance evident in recent years in countries that have well-developed capital markets such as the UK and the US relative to countries such as Germany and Japan, in which the capital markets are much less developed? We highlight the impact of capital market development on the economic performance of the United States because the capital markets are most well-developed in this country. Lessons from the US experience are nonetheless indicative to other economies of the value of well-functioning capital markets.

## Executive Summary

- The ascendancy of the US capital markets — including increasing depth of US stock, bond, and derivative markets — has improved the allocation of capital and of risk throughout the US economy. Evidence includes the higher returns on capital in the US compared to elsewhere; the persistent, large inflows of capital to the US from abroad; the enhanced stability of the US banking system; and the ability of new companies to raise funds. The same conclusions apply to the United Kingdom, where the capital markets are also well-developed.
- The consequence has been improved macroeconomic performance. Over the last decade, US labor productivity has risen and the United States has outperformed economies dominated by banking-based systems. Because market prices adjust instantaneously to new information, the development of the capital markets has introduced new discipline into policymaking. As a result, the quality of economic policymaking has improved over the past few decades.
- The development of the capital markets has provided significant benefits to the average citizen. Most importantly, it has led to more jobs and higher wages.
- By raising the productivity growth rate, the development of the capital markets has enabled the economy to operate at a lower unemployment rate. In addition, higher productivity growth has led to faster gains in real wages.
- The capital markets have also acted to reduce the volatility of the economy. Recessions are less frequent and milder when they occur. As a result, upward spikes in the unemployment rate have occurred less frequently and have become less severe.
- The development of the capital markets has also facilitated a revolution in housing finance. As a result, the proportion of households in the US that own their homes has risen substantially over the past decade.
- Effective capital markets require a firm foundation. This includes the enforcement of laws and property rights, transparency and accuracy in accounting and financial reporting, and laws and regulations that provide the proper incentives for good corporate governance. A well-developed financial system is a spur to growth, macroeconomic performance, and more rapid growth in living standards.

### Acknowledgement

We thank Sandra Lawson for her work on *Section IV: What's Required for Successful Capital Markets*, as well as for her expert editorial assistance; Themistoklis Fiotakis and Peter Stoute-King for their work in gathering and analyzing much of the data used in this paper; and the many others in the Goldman Sachs Economics Group who helped with the data and provided thoughtful comments and guidance.

## Section I: The Dominance of Capital Markets

Modern capital markets have two related parts: (1) the debt and equity markets that intermediate funds between savers and those that need capital, and (2) the derivatives market that consists of contracts such as options, interest rate, and foreign exchange swaps, typically associated with these underlying debt and equity instruments. The debt and equity markets help allocate capital within an economy. The derivatives market helps investors and borrowers to manage the risks inherent in their portfolios and asset/liability exposures (see the boxes on pages 7-8 for a more detailed discussion of these markets).

In the United Kingdom and in the United States, both of these parts have grown very rapidly over the past few decades. The capital markets in the United Kingdom and the United States dominate these countries' financial systems, in marked contrast to France, Germany, and Japan, where banks are more important. Regardless whether one examines the UK or the US over time, or compares the performance with other developed countries on a cross-sectional basis, the conclusion is unmistakable. Capital markets have been the driving force behind the development of the UK and US financial systems.

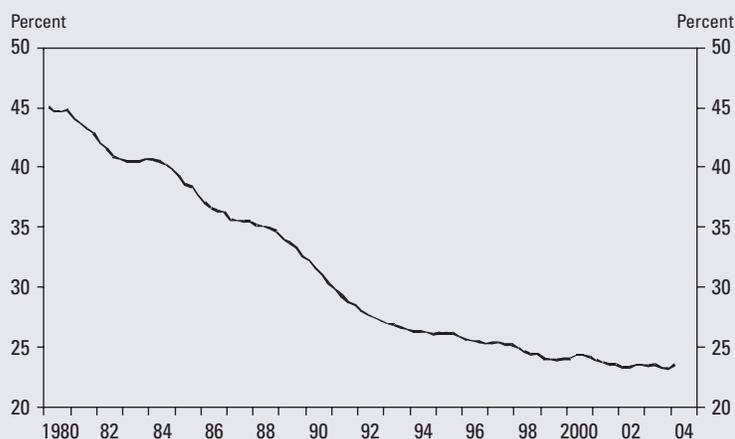
In the US, the capital markets have become the dominant element of the financial system in three ways.

- **First**, capital markets now outstrip depository institutions in the financial intermediation process. For example, the share of total credit market debt intermediated by US depository institutions has fallen by half since 1980, to 23 percent at year-end 2003 from 45 percent (see Exhibit

1). As a result, funds raised in US debt markets now substantially exceed funds raised through the US banking system.

- **Second**, the US equity market has become more important as an investment vehicle. More than half of US households owned equity in some form (directly, via mutual funds, or in retirement accounts) in 2001 (most recent data available), up from 36.7 percent in 1986. The development of an equity culture in the United States has been spurred by the shift from defined benefit pension plans to defined contribution plans and the widespread use of Individual Retirement Accounts and 401(k) accounts as long-term investment vehicles.
- **Third**, the derivatives market has grown extraordinarily rapidly. The notional value of derivatives securities outstanding rose to \$197 trillion as of year-end 2003 from about \$6.7 trillion at year-end 1990.<sup>1</sup> Interest rate swaps represent the biggest share of this market, followed by foreign exchange rate swaps and other derivatives obligations such as fixed income and equity-related options. Credit-derivative obligations are a particularly fast-growing segment of this market.

**EXHIBIT 1: US BANKING SHARE OF ASSETS HAS DECREASED**  
Assets Held at Depository Institutions as a Share of Total Credit Market Assets\*



\* Excludes assets held at the Federal Reserve.

Source: Federal Reserve Board.

<sup>1</sup> See "Bank for International Settlements Quarterly Review," June 2004 and November 1996.

In the UK, the equity market is also very well developed. However, in contrast to the US, the debt markets play a lesser role. In the nonfinancial corporate sector, firms still rely on banks and trade credit for much of their borrowing. However, even here, the role of the debt markets has been increasing. The corporate bond market has increased its share of total nonfinancial corporate debt to 26 percent of total debt in 2003, up from 14 percent in 1990 (see Exhibit 2). Moreover, London is the center of the global Eurobond market. Thus, the debt capital markets are better developed in the UK than the relatively low share of nonfinancial corporate debt implies.

In contrast, in other major developed economies such as France, Germany, and Japan, the banking system still dominates credit allocation. As shown in Exhibit 3, for the nonfinancial corporate sector, the ratio of capital market debt to total debt is much lower in France, Germany, and Japan than in the United States. Moreover, the capital markets have grown slowly in these countries. For the nonfinancial corporate sector, for example, the share of capital market debt in these countries today is still well below its share in the US several decades ago. In contrast, it is impressive how, over the past

decade, the capital markets have continued to increase their market share in the UK and the US despite starting at a higher degree of market penetration.

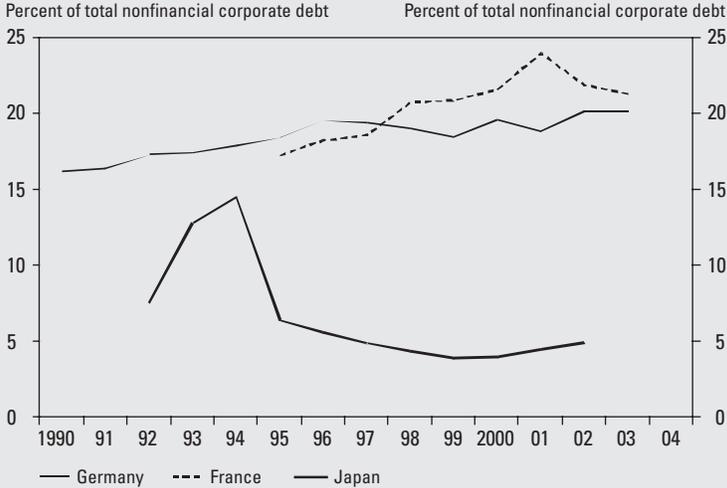
Similarly, the equity markets in Europe and Japan are less developed than in the United States. At year-end 2003, the market capitalization-to-GDP ratio for the US equity market was 123 percent, compared to 35 percent and 78 percent for Germany and Japan, respectively. The UK market capitalization ratio is lower than the US (74 percent at year-end 2003), comparable to Japan's, but higher than that of Germany.

**EXHIBIT 2: CORPORATE BOND MARKET DOMINATES IN THE US...**



Source: Federal Reserve Board. Bank of England.

**EXHIBIT 3: ...NOT THE SAME ELSEWHERE**



Source: Bundesbank. Banque de France. Bank of Japan.

#### WHY ARE THE UK AND THE US AHEAD?

The shift from depository institution intermediation to capital markets intermediation appears to be driven mostly by technological developments. Computational costs have fallen rapidly. As technology has improved, information has become much more broadly available. This has improved transparency. As this has occurred, depository institutions have lost some of their ability to charge a premium for their intermediary services. Often, borrowers and lenders interact directly, as they find that the lender can earn more and the borrower can pay less by cutting out the depository intermediary as a middleman.

The capital markets are more dominant in the UK and the US due to specific attributes of these countries. For the United States, economies of scale and US banking regulation have been important. Scale is relevant because the US is a big economy with numerous large companies. This fact has aided capital market development because securities issuance is characterized by relatively high setup costs, but very low incremental costs as the size of a securities issue increases. This condition implies that as the size of a transaction increases, the capital markets solution becomes much more compelling than the alternative of using depository intermediaries.

Banking regulation in the US has two distinguishing features. First, the Glass-Steagall Act of 1933 legally separated the commercial banking and the securities businesses. Although the Act was fatally weakened by the Federal Reserve's decision to allow commercial bank holding companies to establish "Section 20" securities affiliates in the 1980s, the prohibitions established by the Act were not formally dismantled by Congress until 1999. As a result of the Glass-Steagall Act, securities firms in the United States operated independently of commercial banks for most of the past 70 years. This separation fostered intense competition between the two groups. The fact that most capital-market innovations were developed in the US is presumably due to the innovation spurred by this competitive struggle.

In contrast, in Europe and Japan, the financial systems have been characterized by universal banks that have been able to compete in both the commercial banking and investment banking businesses.

Such systems may have stifled the incentives to develop capital market substitutes for depository institution intermediation. Universal banks in Europe have not had strong incentives to undercut their own commercial banking business in order to boost the capital markets side of their business.

Second, for much of its history, the US commercial banking system was regulated with the goal of preventing individual banks from achieving much economic power. One way this was accomplished was to limit the ability of banks to expand geographically. Until the past 30 years, banks' operations were largely restricted to their home states. In some states, banks were even limited in their ability to establish branch banking offices within the state. As a consequence, the US banking system has been much less concentrated than those of other countries.

In the UK, development of the capital markets was spurred by London's long history as a major financial center in the global economy. For example, until World War II, the pound sterling was the world's reserve currency. Even today, with the UK's role in the global economy much diminished, London still ranks first in the foreign exchange business.

The history of London as a financial center has helped to generate a virtuous circle based on scale. A larger market results in lower transaction costs and greater liquidity. Those factors encourage further development at the expense of potential rival markets in France or Germany. Also, the UK authorities have recognized the strategic benefits of remaining a leading financial center. This objective has encouraged an enlightened regulatory regime, which has caused participants to stay in London or has pulled in business that otherwise might have been done elsewhere. For example, the Eurobond market developed in the UK during the 1960s and 1970s largely because of the US enactment of the Interest Equalization Tax in 1963. This tax change encouraged US corporations to move their bond issuance to London to circumvent the rules enacted in the United States.

The development of capital markets in London was also spurred by "Big Bang" in 1986, which ended the fixed-rate equity commission system and spurred the entry of large-scale US investment banks into the London market. "Big Bang" reinvigorated the UK equity market and facilitated the further

growth of London as a global financial center.

Scale and first-mover advantages have also reinforced the development of London as a center for global/European capital markets. Investors and issuers typically want to do business in the most liquid markets. London's availability inhibited the development of Frankfurt and Paris as major capital markets centers.

Finally, in both the United States and the United Kingdom, capital market development was spurred by the development of a private pension system. The growth of large corporate pension plans created a large group of institutional investors who had strong incentives to operate directly in the capital markets in order to increase the returns on their plans' assets.

## Capital Markets versus Depository Institutions

Saving is funneled from savers to borrowers primarily via the capital markets or through depository intermediaries.

In the first case, intermediation occurs through the exchange of securities. The saver invests the proceeds in a financial market instrument issued by the entity (for example, a business or government) that wishes to obtain the funds. In the case of common stock, the transfer results in an ownership stake. In the case of debt, typically there is a contractual obligation to pay interest on the debt and ultimately to repay the debt on a well-defined schedule.

The use of securities for capital-market intermediation has two defining characteristics. First, the prices of the securities that set the terms of the exchange fluctuate in response to changes in supply and demand — often on a minute-to-minute basis. Second, the securities can be bought from or sold to third parties. As a result, the investor usually has a good idea of what the securities are worth and can obtain liquid funds by selling the securities to a third party — often at short notice.

In some cases, the securities trade on public exchanges (for example, the New York Stock Exchange). In other cases, the securities are traded over-the-counter. This means that prices for the securities are established by individual securities dealers who compete with one another to offer the best prices and execution. The capital markets intermediation occurs via a wide array of instruments, including common and preferred equities, convertible bonds, corporate bonds, mortgage-backed

securities, other asset-backed securities, and commercial paper.

In the second case in which depository intermediaries play a role, intermediation differs in three important respects.

- **First**, the investor does not have a claim on the ultimate beneficiary of the funds. Instead, the investor's claim is on the depository institution that acts as the intermediary.
- **Second**, the price of this claim does not typically fluctuate in response to shifts in supply and demand. Instead, the investor agrees to terms with respect to the rate of interest that will be paid and when the investment will mature.
- **Third**, the investor cannot normally sell this claim to a third party. Instead, to end the contractual arrangement early, the investor might suffer a penalty, such as 90 days of foregone interest in the case of early withdrawal of a bank certificate of deposit. Or, in the case of a demand deposit or savings account that has no maturity date, redemption can occur at any time at the discretion of the saver, but always — assuming the bank remains solvent — at par value.

For a more extended discussion, see R. Glenn Hubbard, *Money, the Financial System, and the Economy, 5th ed.*, Reading: Addison-Wesley, 2003, Chapters 3 and 12.

# The Growth of the Derivatives Market

A large financial derivatives market has developed over the past two decades. This market includes interest rate and currency swaps, options, and credit derivative obligations. The notional size — that is, the value of outstanding contracts — of this market is enormous. At year-end 2003, the Bank for International Settlements estimated the notional value of all over-the-counter derivatives at \$197 trillion and the value of derivatives outstanding traded on organized exchanges at \$17 trillion for futures and \$29 trillion for options.\* The breakdown for over-the-counter derivatives is shown in the table below. As

can be seen, interest rate swaps make up the bulk of all OTC derivative obligations.

The derivatives market serves a different purpose than the debt and equity markets. Whereas the debt markets are a mechanism to transfer loanable funds from savers to borrowers, the derivatives market instead primarily transfers risk. This market allows the attributes of a security to be broken down into its component parts. The investor can keep all the risk embedded in the underlying security, or the investor can dispose of a portion of the risk by engaging in a derivatives transaction. For example, an investor could sell a call option

on an equity security. In doing so, the investor would transform the uncertain prospects for high returns should the equity move up sharply in value into a fixed payment.

The derivatives market is important because it allows investors and borrowers to adjust the currency, credit, and interest rate risks associated with their assets and liabilities, and revenue and expense streams without necessarily having to adjust the underlying asset and liability mix. For example, a corporation might issue long-term, fixed-rate debt in order to reduce its rollover risk. But the company might wish to retain the volatility associated with potential future fluctuations in interest rates (retention would not necessarily raise risk because the interest rate expense might be positively correlated with the company's revenues). In this case, the corporation might enter into an interest rate swap agreement with a counterparty, agreeing to pay a fixed rate of interest to that counterparty in exchange for interest rate payments that floated with changes in a mutually agreed upon short-term interest rate benchmark, such as LIBOR. By engaging in the swap, the corporation would have reduced its rollover risk without changing its exposure to interest rate fluctuations.

## OTC DERIVATIVES OUTSTANDING

	National Amount			Gross Market Value		
	Dec 2001	Dec 2002	Dec 2003	Dec 2001	Dec 2002	Dec 2003
<b>Total contracts</b>	\$111.1	\$141.7	\$197.2	\$3.8	\$6.4	\$7.0
<b>Foreign exchange</b>	16.8	18.5	24.5	0.8	0.9	1.3
<b>Interest rate</b>	77.6	101.7	142.0	2.2	4.3	4.3
<b>Other</b>	16.7	21.5	30.7	0.8	1.2	1.4

Source: BIS, *Quarterly Review*.

\* See "Bank for International Settlements Quarterly Review," June 2004, Statistical Annex, pages A99. For more background on derivative contract, see R. Glenn Hubbard, *Money, the Financial System, and the Economy, 5th ed.*, Reading: Addison-Wesley, 2003, Chapter 9.

## Section II:

# Capital Markets Improve the Allocation of Capital and Risk

The development of the capital markets has generated two major sets of economic benefits. First, it has improved the allocation of capital. Because the prices of corporate debt and equity respond immediately to shifts in demand and supply, changes in the outlook for an industry (and/or company) are quickly embodied in current asset prices. The signal created by such a price change encourages (i.e., by higher prices) or discourages (i.e., by lower prices) capital inflows into the industry (and/or company). Businesses with high returns attract additional capital quickly and easily. When returns drop due to added capacity or a decline in demand, prices drop, and this signal causes investors to cut the flow of new capital to that industry.

The ability of companies in their early stages of development to raise funds in the capital markets is also beneficial because it allows these companies to grow very quickly. This growth in turn speeds the dissemination of new technologies throughout the economy. Furthermore, by raising the returns available from pursuing new ideas, technologies, or ways of doing business, the capital markets facilitate entrepreneurial and other risk-taking activities.

Second, the development of the capital markets has helped distribute risk more efficiently. Part of the efficient allocation of capital is the transfer of risk to those best able to bear it — either because they are less risk averse or because the new risk is uncorrelated or even negatively correlated with other risks in a portfolio. This ability to transfer risk facilitates greater risk-taking, but this increased risk-taking does not destabilize the economy. The development of the derivatives market has played a particularly important role in this risk-transfer process (see box on pages 12-13 for a discussion of the

benefits and costs of derivatives).

Thus the capital markets ensure that capital flows to its best uses and that riskier activities with higher payoffs are funded.

Empirical evidence that supports these conclusions includes: (1) higher returns on capital in the UK and the US than elsewhere; (2) the persistent, large inflows of capital to the UK and the US from abroad; (3) the stability of the US banking system, despite large fluctuations in financial asset prices; and (4) the high rate of private equity investment (including venture capital) and initial public equity offerings in the US compared to elsewhere.

### 1. HIGHER RETURNS ON CAPITAL

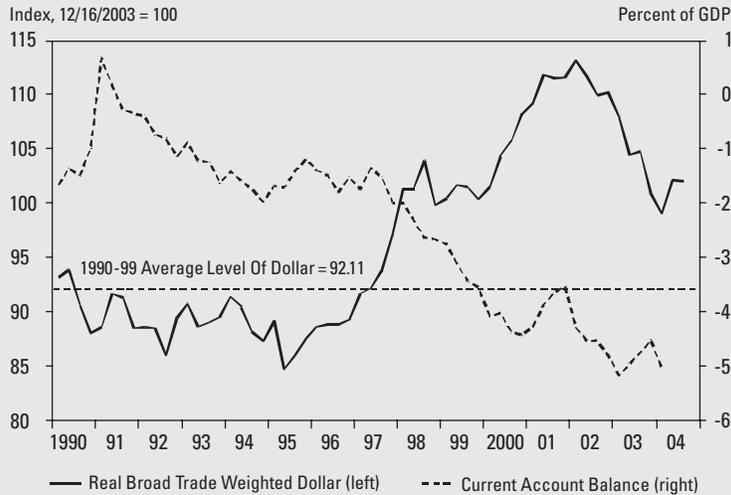
The returns on capital have persistently been much higher in the UK and the US than in the European Union and Japan (see Exhibit 4). Recently, the gap in returns has been particularly wide. For example, in 2003, the return on capital in the UK and the US was 12.6% and 11.1%, respectively, compared to 11.0% and 6.5% for the European Union and Japan, respectively. The fact that UK and US investors tend to earn higher returns strongly suggests that a capital markets-based economy results in a more efficient allocation of capital.

EXHIBIT 4: RETURN ON CAPITAL HIGHER IN THE UK AND US



Source: National Statistical Agencies. Our calculations.

**EXHIBIT 5: DOLLAR DECLINE RELATIVELY MUTED**



Source: Department of Commerce. Federal Reserve Bank of New York.

**2. INFLOWS OF CAPITAL TO THE UK AND THE US**

The willingness of foreign investors to continue to supply capital to the UK and to the US is also evidence of the more attractive risk/return characteristics available in these countries. As can be seen in Exhibit 5, the US current account deficit — which determines the amount of capital that must be recycled back by foreign investors into dollar-denominated assets each year — has climbed sharply over the past decade. Despite this increase, the US dollar on a broad, real trade-weighted basis is currently about 11 percent above its average value during the 1990s. This result demonstrates that foreign capital is flowing to the US willingly. The UK has also had little trouble funding its large current account deficit; in fact, in recent years, the pound sterling has appreciated. This shows that foreign investors want to increase their holdings of UK financial assets.

**3. MORE STABLE BANKING SYSTEM**

The rapid development of the capital markets over the past decade also appears to have made the US banking system more stable. Although there have been some very sharp adjustments in financial assets prices over the past decade

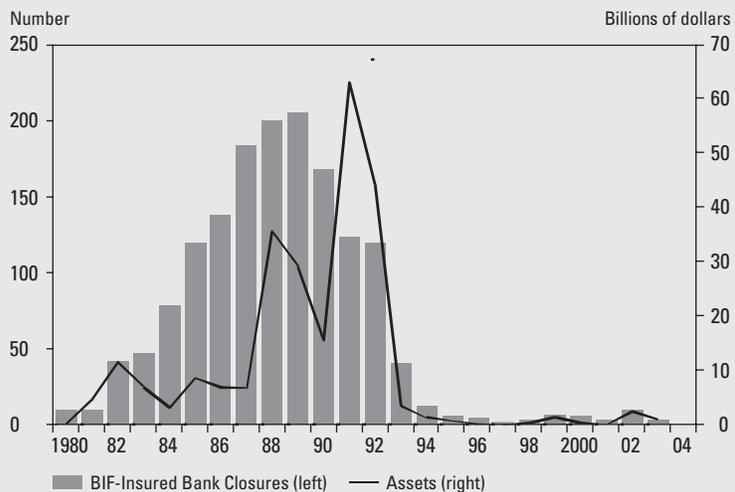
provoked by the Asian financial crisis (1997), the Russian default (1998), the demise of Long-Term Capital Management (1998), the bursting of the US equity bubble (2000-2003), and the Argentine peso crisis (2002), the number of bank failures has fallen sharply compared to past periods of recession and financial turbulence.

As shown in Exhibit 6, only 16 US commercial banks failed during the 2001-2003 period. Moreover, these banks were small, accounting for less than \$3 billion in total assets. In contrast, at a comparable point in the business cycle in 1990-1992, 412 commercial banks failed,

with assets totaling over \$120 billion.

Credit derivative obligations have become an important element that has helped protect bank lending portfolios against loss. These instruments allow a bank to obtain protection from a third party against the risk of a corporate bankruptcy. This protection allows the bank to continue to lend. At the same time, the bank can limit its credit exposure to individual counterparties and diversify its credit exposure across industries and geographically. The decline in banking failures is evidence that derivatives have helped to distribute risk more broadly throughout the economy.

**EXHIBIT 6: US BANK CLOSURES**



Source: Federal Deposit Insurance Corporation.

#### 4. GREATER SUPPLY OF EQUITY CAPITAL AVAILABLE TO START-UP COMPANIES

The US market also is noteworthy for its ability to provide new equity capital to start-up companies. This provision of capital occurs in two stages. In the first stage, venture capitalists and other investors make private equity investments. Later, in cases where the companies have prospered and developed a successful track record, these companies are taken public and equity is offered to the public through the initial public offering (IPO) process.

These two financing channels have been self-reinforcing. The existence of a dynamic IPO market encourages venture capital investment because it provides a viable exit strategy through which venture capitalists can monetize the value of their investments. As a result, entrepreneurs with novel business ideas can obtain funding relatively easily. This has facilitated the development of many companies — especially in technology — that have grown very rapidly and become important firms in the global economy. The existence of the venture capital/IPO nexus helps to facilitate risk-taking and speeds up the pace of innovation and the diffusion of innovation throughout the economy.

According to a study by PricewaterhouseCoopers, global venture capital and private equity fundraising and investment have been dominated by the United States. Exhibit 7 shows that over the 1998-2002 period, North America (predominately the US) accounted for about 70 percent of the total private equity capital raised and invested. In general, the UK has ranked second to the US.

EXHIBIT 7: GLOBAL PRIVATE EQUITY AND VENTURE CAPITAL 1998-2002 (Billions of dollars, cumulative)

	Investment	Funds Raised
North America	\$466.2	\$554.8
Western Europe	122.5	153.5
Asia Pacific	46.5	54.8
Other	24.9	24.9
<b>Total</b>	<b>660.1</b>	<b>788.0</b>

Source: PricewaterhouseCoopers.

Similarly, the US IPO equity market is much more well-developed than in other countries. For example, in 2002, there were 274 IPOs in the United States. Although this was sharply lower than the peak of more than 700 in 1999, this still easily outpaced Japan (135) and Germany (6) (see Exhibit 8). The flurry of activity on the Deutsche Börse in 1999 and 2000 during the height of the technology boom is now a distant memory.

The success of the US equity market is also visible in other ways. For example, foreign share listings on the New York Stock Exchange and NASDAQ and the use of American Depository Receipts for foreign companies have expanded rapidly over the past decade. Foreign companies who list their shares in the United States include both corporations domiciled in Europe and Japan and companies that have been recently privatized in developing countries such as China.

EXHIBIT 8: IPO ISSUANCE (no. of IPOs)

Year	US (AMEX, NYSE, NASDAQ)	Germany (Deutsche Börse)	UK (London Stock Exchange)	Japan (Tokyo and Osaka)
1995	625	20	285	59
1996	909	20	347	97
1997	874	35	217	76
1998	691	67	169	67
1999	759	134	161	99
2000	656	135	366	264
2001	255	21	236	147
2002	274	6	193	135

Source: World Federation of Exchanges.

# Buffett versus Greenspan on Derivatives

Warren Buffett, Chairman of Berkshire Hathaway, and Alan Greenspan, Chairman of the Board of Governors of the Federal Reserve System, have dramatically different views about the usefulness of derivative securities.\*

Buffett — the businessman — regards them as potentially very dangerous; Greenspan — the Fed chairman and bank regulator — generally regards derivatives with favor. Their views provide a useful point of departure in examining some of the more controversial issues surrounding the rapid development of the financial derivatives market.

Warren Buffett summarized his views in his annual letter to shareholders, discussing Berkshire Hathaway's 2002 results. He sees derivatives as "time bombs, both for the parties that deal in them and the economic system." This conclusion stems from four observations:

1. Today's earnings are based on estimates of derivatives value, which may be inaccurate. Earnings are affected because changes to the value of derivatives flow through the income statement as the derivatives are marked-to-market. The problem is that there often may be considerable ambiguity concerning the appropriate valuation. Suitable markets on which to base a valuation may not exist, or the markets used for valuation purposes may be illiquid.
2. The users of derivatives have incentives to value derivatives in ways that flatter current earnings. This is because compensation may be tied to current earnings, or is just a result of the human tendency to be optimistic.
3. "...huge-scale frauds and near-fraud have been facilitated by derivatives trades."
4. Derivatives can create systemic problems. For example, at times, derivatives contracts state that when a company's credit rating is downgraded, it has to respond by supplying additional collateral to its counterparties. This can lead to a full-scale liquidity crisis for the company. Another systemic issue is the "daisy-chain risk" by which a failure of one firm

hurts the financial condition of other firms. Buffet cites Long-Term Capital Management (LTCM) as a large user of derivatives whose demise caused significant systemic problems.

Buffett concludes: "In our view ...derivatives are financial weapons of mass destruction, carrying dangers that, while now latent, are potentially lethal."

In contrast, Chairman Greenspan takes a more sanguine view. He emphasizes:

1. The mark-to-market exposure is far smaller than the notional amount of derivatives outstanding. The Bank for International Settlements estimates that the gross market value of all outstanding over-the-counter derivatives instruments was about \$7 trillion at year-end 2003, compared to \$198 trillion of notional exposure.
2. The instruments are "...an increasingly important vehicle for unbundling risks. These instruments enhance the ability to differentiate risk and allocate it to those investors most able and willing to take it."
3. This use of derivatives leads to improved economic performance. As Greenspan notes: "The product and asset signals enable entrepreneurs to finely allocate real capital facilities to produce those goods and services most valued by consumers, a process that has undoubtedly improved national productivity growth and the standards of living."

While Chairman Greenspan notes that only a major economic adjustment will "test the underlying robustness of the derivatives markets," he emphasizes the market's fundamental strengths. These include:

1. Most derivatives are "plain vanilla" interest rate and currency swaps for which valuation is straightforward.
2. Credit risks are increasingly subject to comprehensive netting and margin requirements.

\* For Warren Buffett's views, please see Berkshire-Hathaway, 2002 Letter to Shareholders at <http://www.berkshirehathaway.com/letters/2002.html>. Chairman Greenspan's views on derivatives are summarized in his speech "Remarks on Financial Derivatives" to the Futures Industry Association, March 19, 1999, available at <http://www.federalreserve.gov/BOARDDOS/SPEECHES/1999/19990319.htm>

So what should one conclude? In our view, Warren Buffett's observations, although sensible in many respects, are mostly a case of "throwing the baby out with the bathwater." If one takes his critique at face value, an appropriate response would be to avoid long-dated derivatives contracts with potentially dodgy counterparties. That would enable one to avoid many of the potential risks that he discusses, but still allow one to take advantage of the many benefits offered by derivatives.

The problem lies not with the derivative instruments themselves, but the honesty of one's counterparties. That risk always exists in business, and can be summarized most simply by the well-known phrase, *caveat emptor* ("let the buyer beware"). In the case of derivatives, one can also protect oneself by sticking to derivatives contracts in well-developed markets that can be easily used to determine the appropriate valuation.

Finally, it is important to recognize that the derivatives market has been stress-tested. In the past decade, we have witnessed the Asian crisis, the Russian default, the demise of Long-Term Capital Management, a nearly 80-percent decline in the value of the NASDAQ, and widespread financial problems in newly deregulated industries such as airlines, energy trading, power generation, and telecommunications. Despite all of this stress, the derivatives exposures associated with these events were resolved without lasting damage to the

US financial system or economy.

The derivatives market played a major role in the LTCM crisis. But the problem there was not the derivative exposure per se, but the fact that LTCM's counterparties allowed LTCM to take on risks totally out of proportion to LTCM's capital base. This anomaly arose because some Wall Street counterparties were dazzled by the Nobel laureates advising LTCM and did not demand a full accounting of LTCM's positions. The problem was exacerbated by the fact that many of these counterparties had risk positions similar to those of LTCM. These positions rapidly lost value as LTCM was forced to liquidate its portfolio. As volatility increased, in turn, it raised risk exposures further. A vicious downward spiral of heightened volatility, rising risk, and forced liquidation ensued.

The end result was a temporary seizing-up of the capital markets that prompted the Federal Reserve to ease monetary policy. The Federal Reserve Bank of New York also helped to facilitate a recapitalization of LTCM by the investment banking community. This reorganization was done in order to forestall a panicked liquidation of LTCM's assets that would have caused further market disruption. Although the LTCM crisis was unnerving, it caused no significant or lasting damage to the US economy.

## Section III: Capital Markets Help Facilitate Superior Economic Performance

The improved allocation of capital and risk sharing facilitated by capital markets has led to superior economic performance. As the capital markets have become more developed in the UK and the US, the economic performance of these countries has improved. In addition, the gap in the relative performance of the UK/US compared to that of Europe and Japan has widened over time as capital markets have become more dominant in the UK and the US.

We find evidence of the superior economic performance in five major respects: (1) higher productivity growth, (2) higher real-wage growth, (3) greater employment opportunities, (4) greater macroeconomic stability, and (5) greater homeownership.

### 1. HIGHER PRODUCTIVITY GROWTH

Over the past decade, the growth rate of labor productivity in the UK and US has increased, and the gap in performance relative to Europe and Japan has widened (see Exhibit 9).<sup>2</sup>

The capital markets have played an important role in this process. First, the capital markets helped improve the allocation of capital, thereby raising the average return on capital. Second, the capital markets facilitated the allocation of risk and helped provide a mechanism by which start-up companies could raise capital.

With respect to the United States, part of the superior performance evident in Exhibit 9 is due to two factors: (1) the more rapid development and dissemination of technology in the US, and (2) the greater flexibility of the US labor markets. The ability to adjust labor needs quickly means that US firms have greater incentives to rapidly adopt new labor-saving technologies compared to countries where labor markets are more rigid.<sup>3</sup>

In the United Kingdom, labor market reforms and the privatization program initiated by Prime Minister Margaret Thatcher in the 1980s undoubtedly played an important role. After all, during the 1950s, 1960s, and 1970s, the UK economy was in relative decline, despite the existence of comparatively well-developed capital markets.

### 2. HIGHER REAL WAGE GROWTH

Not surprisingly, higher productivity growth accrues to workers in the form of higher real-wage growth. Exhibit 10 illustrates the respective performance of real-wage growth on a five-year moving average basis. As can be seen, the UK and US performance has tended to improve over time. Moreover, real-wage growth has persistently tended to be higher in the UK and the US than in France, Germany, or Japan.

### 3. GREATER EMPLOYMENT OPPORTUNITIES

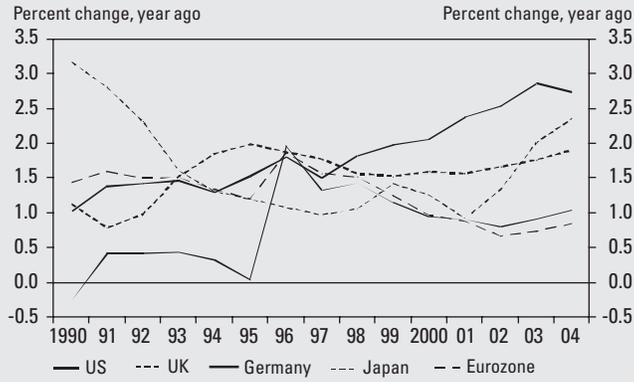
At the same time, higher productivity growth and higher real-wage growth have not impeded employment creation in the UK and the US compared to Europe and Japan. As shown in Exhibit 11, employment growth in the UK and the US has generally been substantially higher than in the European Union and Japan.

Moreover, the UK and the US have been able to operate at significantly lower unemployment rates than in the European Union (see Exhibit 12 on page 16). This stems directly from the superior productivity growth performance. Higher productivity growth allows these economies to operate at a higher rate of labor resource utilization without this tightness generating an increase in inflation. In economists' parlance, higher productivity growth lowers the non-accelerating inflation rate of unemployment (NAIRU).

<sup>2</sup> We use a five-year moving average to smooth out cyclical influences.

<sup>3</sup> US productivity growth is biased upward slightly, compared to other countries by the use of quality adjustments. However, this difference is insufficient to explain the large gap in productivity performance.

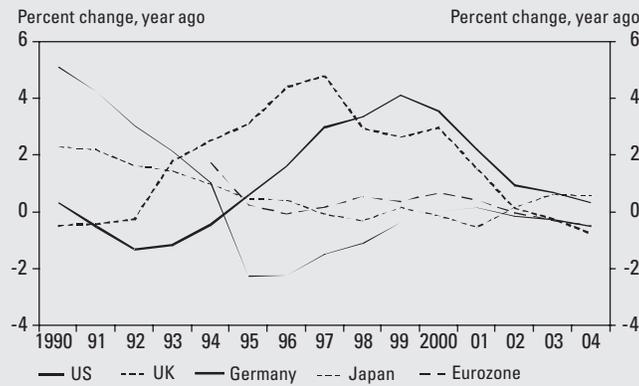
**EXHIBIT 9: PRODUCTIVITY GROWTH\* HIGHER IN US**



\* Data plotted as five-year moving average.

Source: OECD.

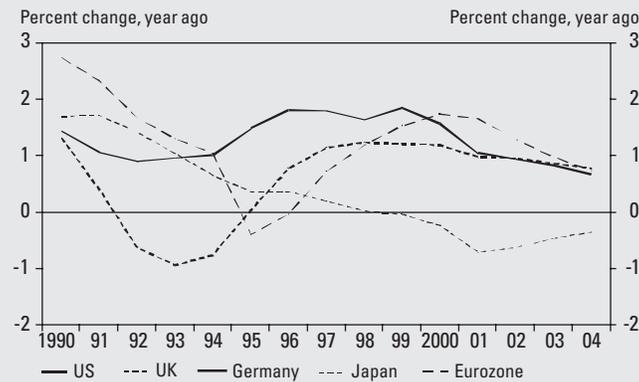
**EXHIBIT 10: ...SUPPORTING REAL WAGE GROWTH\***



\* Data plotted as five-year moving average.

Source: OECD.

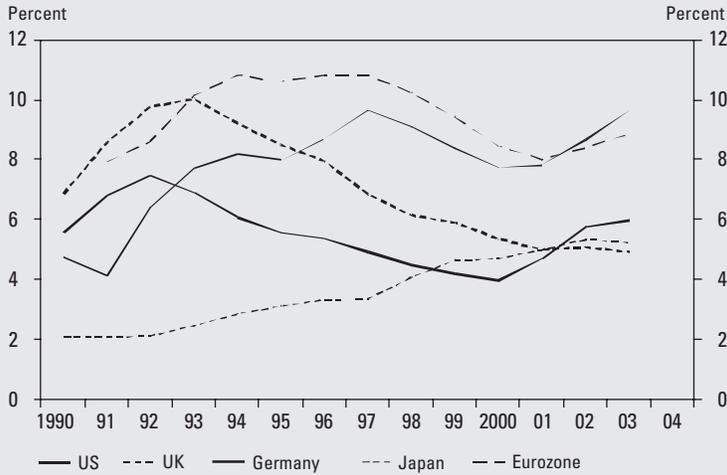
**EXHIBIT 11: EMPLOYMENT GROWTH\***



\* Data plotted as five-year moving average.

Source: OECD.

**EXHIBIT 12: UNEMPLOYMENT RATES\***



\* Data plotted as five-year moving average.

Source: OECD.

Exhibit 13 illustrates the linkage between productivity and NAIRU. Real wage growth in the US is strongly related to the unemployment rate. At a 4.5 percent unemployment rate, real wage growth has averaged about 3 percent; but at higher unemployment rates, real wages grow much more slowly. This means that the “safe” non-inflationary level of unemployment in the US depends on the productivity growth rate. The productivity growth rate determines the growth rate of real wages that is sustainable without generating an increase in the inflation rate.

The end result is that labor utilization is much higher in the US than in Europe. For example, the overall employment rate in Europe among potential workers was just 81 percent of the US in 2003. In addition, Euroland workers toil roughly 15 percent fewer hours than their US counterparts.<sup>4</sup> How much the hours-worked shortfall is due to choice — preference for leisure over work — higher taxes on work, or lack of opportunity is uncertain.

The increased utilization of labor resources has a number of benefits. First, the US economy has a relatively low rate of structural unemployment. Only about

1.5% of those in the labor force have been unemployed for 27 weeks or longer. Second, the higher level of resource utilization means that the US is better positioned to address the demands of an aging population than Europe or Japan. Although the US faces serious long-term budgetary issues, those problems pale in comparison to those faced by Europe and Japan (see box on page 18-19).

**4. GREATER MACROECONOMIC STABILITY**

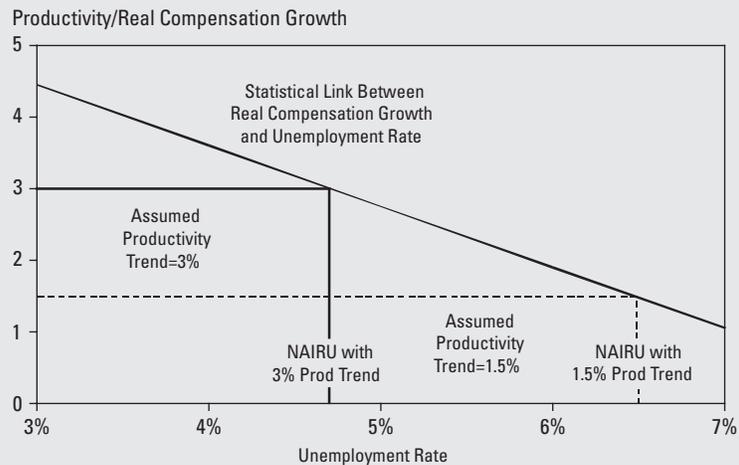
Both the UK and US economies have become much less volatile in recent years. In the UK, this is evident in the current expansion, which now has lasted nearly 12 years — the longest UK economic expansion in the post-

World War II period.

In the US, the business cycles also have shown greater durability. In particular, the last expansion, which ended in 2001, was the longest of the post-World War II period. The preceding expansion, which ended in 1990, was the third-longest in the post-war period.

In addition, when recessions have occurred, they

**EXHIBIT 13: STRONG PRODUCTIVITY GROWTH ALLOWS LOWER UNEMPLOYMENT**



Source: Goldman Sachs US Economic Research estimates.

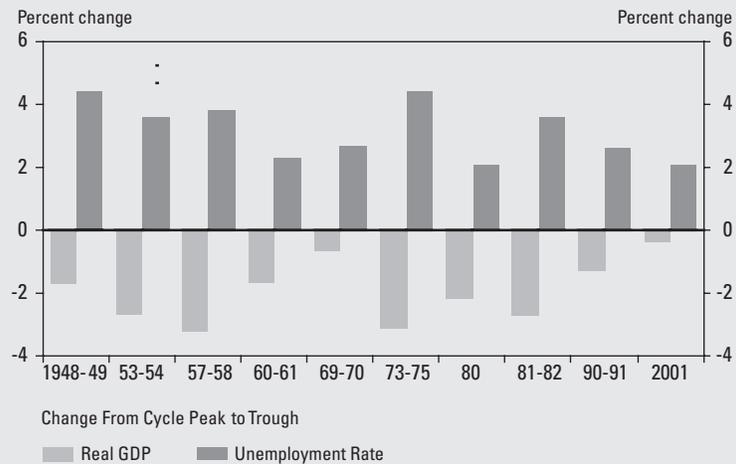
<sup>4</sup> See “Euroland’s Secret Success Story,” Goldman Sachs *Global Economics Paper* No. 102, p. 7, January 16, 2004.

have tended to be milder. For example, in the US, both the 1990-1991 and 2001 downturns were shallow recessions, marked by modest rises in the unemployment rate (see Exhibit 14). As a result, fluctuations in the civilian unemployment rate have diminished. In the case of the US, for example, the trough-to-peak rise in the unemployment rate during the most recent downturn was only 2.4 percentage points, the second smallest rise in the post-war period. In contrast, over the post-war period, the unemployment rate rise associated with recessions has averaged 3.6 percentage points. In the UK, the unemployment rate has not risen by more than 1 percentage point for more than a decade.

Capital markets have helped to reduce economic volatility in three ways. First, because the capital markets use mark-to-market accounting, it is more difficult for problems to be deferred. As a result, pain is borne in real time, which means that the ultimate shock to the economy tends to be smaller. In contrast, when depository institutions get into trouble as a group, the pressure for regulatory forbearance increases. Deferral causes the magnitude of the problem to increase. Usually — as can be seen with the US saving and loan crisis and in the case of Japan’s decade-long banking crisis — this forbearance just creates a much bigger problem that poses a greater threat to macroeconomic stability.

Second, by providing immediate feedback to policymakers, the capital markets have increased the benefits of following good policies and increased the cost of following bad ones. Good policies result in lower risk premia and higher financial asset prices. Investors are supportive. Bad policies lead to bad financial market performance, which increases investor pressure on policymakers to amend their policy choices. As a result, the quality of economic policymaking has improved over the past two decades, which has helped improve economic performance and macroeconomic stability (see box on pages 20).

**EXHIBIT 14:**  
**US RECESSIONS/UNEMPLOYMENT RISES HAVE BEEN MILD**



Source: Department of Commerce. Department of Labor.

Third, in the United States, the capital markets have helped make the housing market less volatile. With the development of a secondary mortgage market and the elimination of interest rate ceilings on bank deposits, “credit crunches” of the sort that periodically shut off the supply of funds to home buyers, and crushed the homebuilding industry between 1966 and 1982, are a thing of the past. Today, the supply of credit to qualified home buyers is virtually assured. The result has been to cut the volatility of activity in the economy’s most interest-sensitive sector virtually in half. This change is a truly significant improvement, because it means that the economy’s most credit-sensitive sector is now more stable (see box on pages 21-22).

#### 5. GREATER HOME OWNERSHIP

The revolution in mortgage finance has increased the ability of households to purchase their own homes.<sup>5</sup> The closing costs associated with obtaining a residential mortgage have fallen, and the terms (for example, the loan-to-value ratio) have become less stringent. At times, homeowners can obtain 100 percent financing to purchase a home. As a result, the proportion of households in the US that own their own homes climbed to 69.3 percent during the second quarter of 2004, up from 63.7 percent at the end of the 1980s.

<sup>5</sup> We view the increase in homeownership as a positive economic development. After all, the US government has made homeownership an important goal of policy. This can be seen in the tax deductibility of mortgage interest expense and the creation of two large government-sponsored enterprises, Fannie Mae and Freddie Mac, that were established to develop a mortgage securities market and thereby reduce the cost of residential mortgage loans.

## A Vibrant Labor Market Provides Support for an Aging Population

Europe, Japan, and the United States all face significant challenges in accommodating the retirement and health-care needs of their aging populations. In all three regions, old-age dependency ratios are likely to rise sharply over the next few decades. However, the problem facing the US is much less serious than the difficulties faced by Europe and Japan.

Part of this difference reflects the fact that the US Social Security system is less generous in terms of its benefits. The retirement age in the US tends to be higher than in most European countries, and the proportion of income that the US Social Security system replaces at retirement is generally lower than in Europe and Japan.

But this does not tell the whole story. The vibrancy of the US labor market is another key element that reduces the burden of an aging US population.

First, the active labor market supports more rapid population growth in the US through a more liberal immigration policy. As a result, the population growth rate in the US is much higher than in Europe and Japan. Thus, the old-age dependency ratio rises much more slowly in the United States compared to Europe and Japan (see exhibit on page 19).

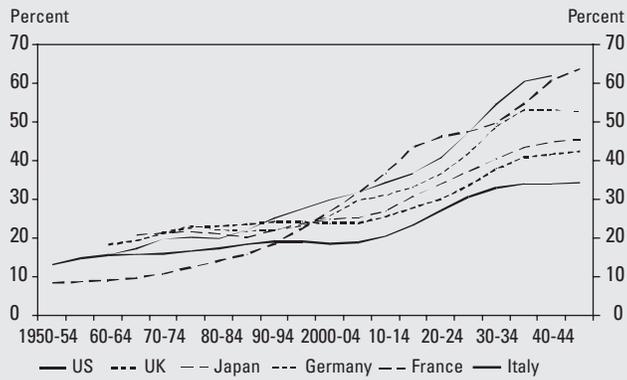
Presumably, the more liberal immigration policy is at least partially encouraged by the success of the US economy in generating employment opportunities. If the US labor market were moribund and the unemployment rate were high, then a backlash against immigra-

tion would likely have developed. Immigration rates would fall and this would have caused the average age of the US population to rise more rapidly. Even illegal immigration into the United States appears sensitive to US economic performance. As shown on page 19, when the US economy is performing well, arrests of illegal immigrants at US borders tend to increase. This shows that the success of the US economy in creating jobs directly influences immigration.

The ability of the US economy to generate employment opportunities can be seen most clearly in the recent increase in the labor participation rate among older workers. As shown on page 19, over the past decade, participation rates for both the 55-64 year old and 65 year and older groups have increased. This increase would not be possible without a vibrant labor market.

Second, as discussed earlier in the main body of the paper, productivity growth and real wage growth are higher in the United States than in Europe or Japan. This growth is important because it means that the US economy will expand more quickly, which in turn helps to generate the tax revenue needed to finance the nation's retirement and health care entitlement programs.

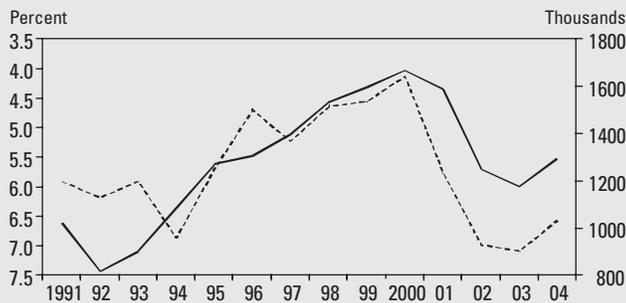
### OLD AGE DEPENDENCY RATIOS\*



\* Calculated as the number of people 65 years and older divided by the number of people 14-65 years old.

Source: United Nations. Bureau of Census. Our calculations.

### ECONOMIC OPPORTUNITY DRAWS UNDOCUMENTED MIGRANTS

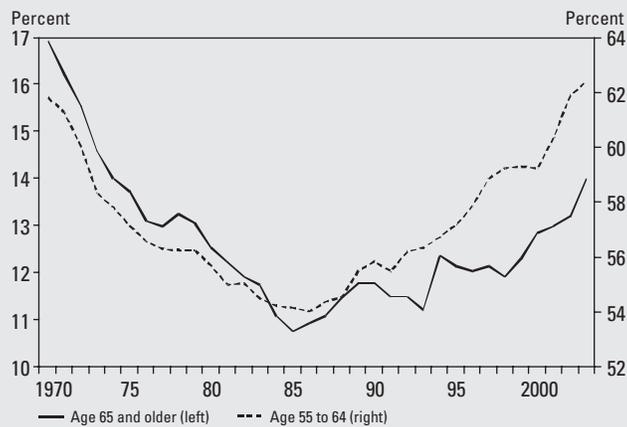


Note: Years are US fiscal years (ending in September).

— US Unemployment Rate (left, inverted)  
 --- Southwest Border Patrol Apprehensions (right)

Source: Departments of Labor, Homeland Security.

### US LABOR PARTICIPATION RATE



Source: Department of Labor.

# Capital Markets Result in Improved Policymaking

The capital markets have played an important role in improving economic policymaking. This improvement has occurred because the capital markets act as long-term discounting mechanisms that provide nearly instantaneous feedback to policymakers. When policymakers threaten to embark on bad policies, equity and bond risk premia tend to rise. Stocks and bonds go down in value. These price signals raise a red flag to lawmakers about the wisdom of pursuing the policies in question. In essence, because the capital markets anticipate future developments, they reduce politicians' incentives to do things that provide short-term gains that might improve their prospects at the polls, but that bring long-term costs that will ultimately hurt the nation's economic performance.

The importance of the capital markets in disciplining policymakers has presumably also increased because of the emergence of an investor class. The rise in the number of households that invest in the equity market and in mutual funds means that declines in financial asset prices may also erode political support. Several decades ago, most voters held their investable funds mainly in depository institutions, where there was no mark-to-market risk. Also, their pensions were provided mainly by defined benefit plans, where the market risk was borne by the sponsoring corporation or government entity. Again, the voters were insulated from market fluctuations.

In the space of 20 years, an increasing proportion of households became investors. More households have come to invest in the stock market and in equity mutual funds. Moreover, defined contribution pension plans have proliferated at the expense of defined benefit plans. In these plans, the household assumes the market risks associated with these pension plan investments. The proportion of households with investments in equities in some form had climbed to above 50 percent by 2001. The consequence is that voters now care much more than before about how the financial markets are performing. This shift increases the disciplinary role played by the capital markets.

A few examples can highlight this linkage between the capital markets and improved policymaking:

- 1. Bank of England given independence in setting monetary policy.** The United Kingdom's forced exit from the ERM in 1992 set in motion the series of events that culminated in the Bank of England's independence in conducting UK monetary policy. The Labour Party decision to establish an independent Monetary Policy Council in 1997 was designed to reassure financial markets worried about the Labour Party's historically poor track record in avoiding boom/bust economic cycles.
- 2. Independence of the Federal Reserve from US administration pressure.** At various times in the past, administration officials would criticize the interest rate policies pursued by Federal Reserve officials. This tactic became increasingly counterproductive as market participants — worried that the Federal Reserve might alter its policies under administration pressure — demanded greater risk premia. The administration's admonishments of the Fed tended to increase market volatility and drive down bond prices. As the capital markets became increasingly dominant, the executive branch eventually learned that this vocal pressure had become counter-productive. Today, the executive branch leaves interest rate policy to the Federal Reserve, and administration economic spokespeople refrain from commenting on the Federal Open Market Committee's interest rate decisions.
- 3. The Budget Enforcement Act of 1990.** This legislation was passed, in large part, because of worries among bond market participants concerning the long-term budget outlook. This act established the so-called PAYGO provisions, which essentially required that new tax cuts or spending initiatives must be financed by offsetting tax increases or spending reductions. The implementation of the PAYGO provisions was an important factor that helped push the budget balance from a large deficit in 1992 to a surplus by 1998. Unfortunately, the PAYGO provisions subsequently lapsed and have not yet been reinstated.

# The Revolution in Housing Finance

The capital markets have helped facilitate a major transformation of the US mortgage financing system over the past 25 years. This has made the housing sector much less cyclical because housing transactions have become much more resilient to interest rate increases. Before 1978, the principal residential mortgage-lending institutions in the United States — savings and loans, mutual savings banks, commercial banks, and credit unions — were subject to interest rate ceilings on the deposits they offered, and the secondary market for mortgage securities had not yet been born. In this environment, the housing industry went through sharp boom/bust cycles. Lacking an alternative channel of finance, it tumbled whenever increases in market interest rates rose above the legally mandated deposit-rate ceilings, sucking funds out of the banks and thrift institutions. The market then soared when interest rates fell back below these ceilings, unleashing a torrent of pent-up demand that had accumulated during the preceding contraction.

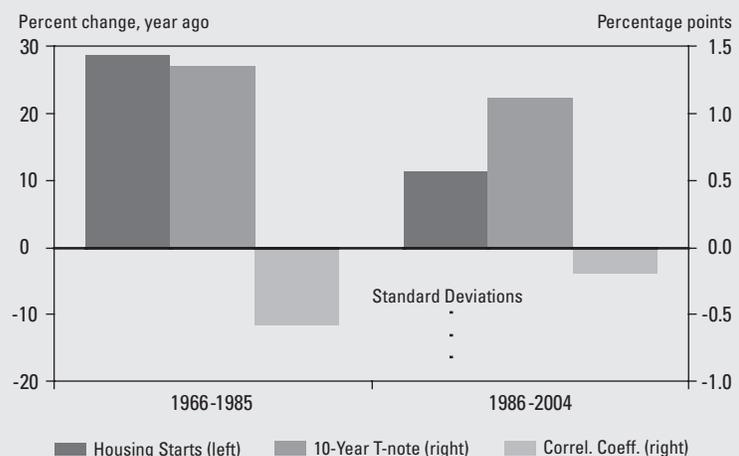
This system started to unravel in the escalating interest rate environment of the late 1970s and was completely overhauled in the 1980s. Deposit rate ceilings were eliminated, alternative financing vehicles such as the variable-rate mortgage were introduced, and the mortgage-backed securities market was created. Of all the changes, the last was probably the most critical because it provided a much-needed link between the mortgage market and other segments of the US capital market.

The result has been a dramatic decline in the cyclical volatility of housing activity and its sensitivity to interest rates. Since 1986, when deposit-rate ceilings became extinct, annual changes in housing starts have been much less volatile than before and less correlated with changes in long-term interest rates (see exhibit at right).

Another favorable consequence has been a sharp rise in the proportion of households that own their homes in the United States. As shown below, the share of households that own their homes had risen to 69.3 percent during the second quarter of 2004, up from 63.7 percent at the end of the 1980s.

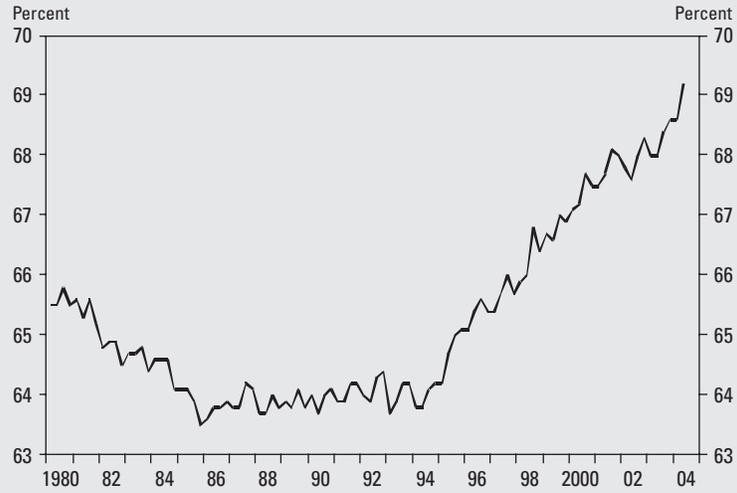
The revolution in housing finance has also led to another radical transformation that has been important in making the economy less cyclical — the dramatic drop in the cost of obtaining a mortgage loan. As a result, the cost of mortgage refinancing has tumbled. The consequence has been an improvement in the ability of monetary policy to provide stimulus to the economy during periods of weakness. When interest rates fall, households tend to refinance their homes. This provides two sources of support for economic activity. First, the interest rate on the refinanced mortgage falls, freeing up funds that can now be spent elsewhere. Second, when they refinance, homeowners often increase the size of their mortgage loans. This results in an influx of funds that can be used to support consumer spending. As shown on page 22, the revolution in housing finance has led to a large increase in mortgage equity withdrawal. This change is one reason why consumer spending held up well during the 2001-2003 period, even as employment and investment spending faltered.

## HOUSING ACTIVITY LESS VOLITILE, LESS RATE-DRIVEN IN LAST TWO DECADES



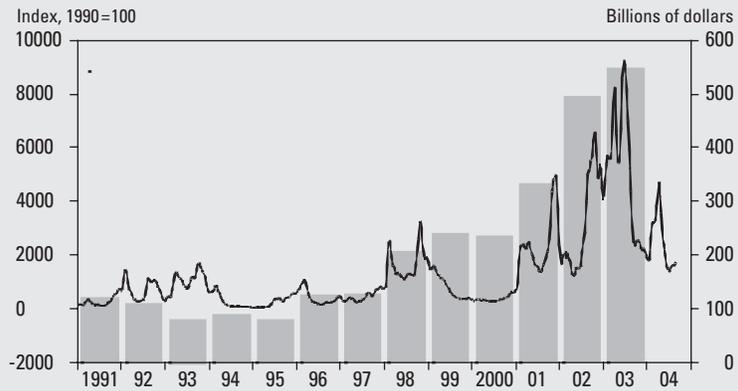
Source: Department of Commerce. Federal Reserve Board.

### US HOMEOWNERSHIP RATE



Source: Department of Commerce.

### MORTGAGE EQUITY WITHDRAWAL HAS SUPPORTED SPENDING



\* All equity extracted from existing homes.

- Mortgage Refi Apps, 4-Wk Mov Avg (left)
- Mortgage Equity Withdrawal\* (right)

Source: Mortgage Bankers Association. Federal Reserve Board.

## Section IV:

# What's Required for Successful Capital Markets

Academics and policymakers generally agree that financial development is associated with superior economic performance. All else being held equal, countries with better-developed financial systems have higher levels of per-capita real GDP. Moreover, the evidence strongly suggests a causal element running from financial market development to superior economic performance (see box on page 25).

What should countries do so as to be able to reap the benefits associated with the process of financial development? Once they have built up their bank-based systems, how do countries move to the capital markets-based system that is superior at the later, more advanced stages of economic development?

Financial system development does not occur overnight. As Federal Reserve Chairman Greenspan noted in the wake of the 1997-1998 Asian and Russian financial crises, developing a financial infrastructure requires a significant commitment of resources. In some cases, the payoff will only be seen decades later. Emerging economies that are focused on short-term growth and poverty alleviation may be reluctant to make the investment in this arena when the payoffs are not readily visible or are unlikely to be achieved quickly. Nevertheless, the investment is worth it.

In the early stages of financial development, the fundamental requirements for both a bank-based system and a market-based system are largely the same. Both require a basic institutional framework that includes well-defined property rights, bankruptcy laws, and competition laws; regulatory institutions for banks, markets, and corporations; and an effective judicial system that can uphold and enforce these. Some academics argue that the legal system is key to creating an environment in which growth can flourish. Others focus on the need to prevent corruption and to establish macroeconomic policies that are conducive to sustainable growth, as well as building robust political and economic institutions. Good management, accountability, and transparency in the public sector set the tone for good management at the corporate level. Good public finances are also important, though this is not always sufficient to ensure economic stability.

Political support for the idea that these prerequisites are fundamental to both financial development and economic growth comes from the Millennium

Challenge Account (MCA), a new organization established by the Bush administration. The MCA will disburse US development funds to countries that meet specified macroeconomic and political performance indicators, including government effectiveness, rule of law, and control of corruption (all as measured by the World Bank Institute). The criteria also include country credit ratings, inflation rates, budget deficits, and regulatory quality. The thinking behind the MCA is that creating incentives for countries to take the steps that will help to foster their economic development creates the conditions that will allow aid to be used effectively.

Once the macro-policy framework is in place, further steps can strengthen the financial system. Banking regulation is particularly important. In fact, a well-regulated banking system remains important even once capital markets have begun to assume a larger role in the economy. Some commentators, including Alan Greenspan, suggest that the strong bank-based systems in Europe may have helped to shield the region from the fallout of the late-1990s financial crises. In Australia, the diversification gained from the combination of a robust capital market and a strong banking system may have provided similar protection from the regional contagion associated with the Asian crisis. Accordingly, prudential banking regulations, including strict enforcement of capital adequacy ratios, are needed, as is strong, effective oversight. Banks may also need to develop advanced credit-assessment strategies before they greatly expand the scope of their lending.

In the wake of the emerging-market crises of the 1990s, which showed how weak institutional structures can exacerbate the risks of liberalization, recent academic work has focused on the need to space out reforms to avoid overloading a developing system during the transition from a bank-based to a market-based system (see box on page 26 for a discussion of financial reforms pursued by China and Singapore). Although there is no strong consensus on the appropriate sequence — or pace — of reforms, there is agreement that this transition should be undertaken gradually and carefully. The specific order of reforms is likely to depend on conditions in the local and regional economies, the state of the local banking system, the quality of the supervisory system, and the exchange-rate policy.

Key steps include:

- The creation of well-supervised money markets, debt and equity exchanges, and efficient clearing and settlement systems that support the provision of liquidity to the financial markets and reduce systemic and market risk.
- Regulatory policies that encourage secondary trading, including mark-to-market rules.
- The lifting of any controls on deposit and lending rates.
- The disavowal of explicit state-offered credit guarantees or deposit insurance, and an end to any state ownership of financial institutions. This would help to eliminate the problem of moral hazard that skews bank lending and constrains capital markets.
- The lifting of any restrictions on banks' "nontraditional" activities. This can encourage banks to enter the capital markets and promote competition in ways that appear to have been so helpful in advancing the capital markets in the US.
- A credible and largely independent central bank.
- Improved transparency and disclosure for all market participants: central banks, regulatory agencies, banks, corporations, and investors.
- Incentives for market intermediaries to gather better information and conduct better risk assessment.
- Harmonization of accounting rules and principles with international standards.
- A focus by the legal system on strong protection of minority shareholders, rather than of creditors. Boosting public confidence in markets is an important step.
- Opening of domestic markets (and brokerages) to foreigners who can deepen liquidity and introduce competition — even if this sometimes results in higher volatility.
- Encouraging the development and participation of institutional investors, including insurance companies and private pension schemes. In recent decades, institutional investors have

played an important role in the deepening of the capital markets in both the UK and the US.

- A shift in regulatory approach from one that is strictly rules-based to one that is more focused on risk management. As constraints are lifted and capital markets become more complex, opportunities for "gaming" a rules-based regulatory system grow, making the overall system more vulnerable. A focus on risk management allows greater flexibility and should reduce the system's vulnerability to shocks.
- The regular issuance of government bonds of varying maturities. Government benchmarks can help to establish a yield curve and a guide for credit ratings for privately issued debt. China has tapped international bond markets, despite its massive foreign reserve holdings, to do exactly this.

Most academics agree that capital account liberalization should be among the last steps on the path toward a US-style capital market. This change is an important part of financial liberalization, but it requires a stable macro environment, a strong prudential framework in the financial sector, capable risk and liquidity management, and strong monitoring. One clear lesson of the Asian crisis is that liberalization must be accompanied by improvements in banking regulation and that the process needs to be undertaken very carefully. Restrictions on short-term capital inflows may be appropriate while domestic banking systems are beefing up their prudential regulations.

Foreign-exchange regimes must also be considered in the context of capital markets development. Currency pegs can be especially dangerous after capital accounts are liberalized. Countries wishing to liberalize their foreign exchange regimes will need to strengthen their prudential standards so as to provide a strong bulwark against the potential risk posed by rapid withdrawals by overseas investors.

The creation of a derivatives market should also be among the later steps — as it has been in the US and the UK. While derivatives can help to deepen liquidity and manage risk, they require greater monitoring and are probably only suited to the best-developed capital markets.

Expectations matter throughout the process. A government that is truly committed to developing its capital markets will need to make its intentions clear and be convincing. In most countries this means persuading investors and lenders that no government bailout will be forthcoming in the case of a crisis. Establishing this credibility is not easy, but

steps may include disavowing implicit guarantees and standing back from small-scale solvency crises.

A capital-markets regulatory framework should be viewed as a continuous work in progress. Recent steps to improve corporate governance and to crack down on trading abuses by mutual funds in the US demonstrate that no regulatory regime can remain static for long. Ongoing improvements in corporate governance, market transparency, banking regulation, and convergence of international accounting stan-

dards will be needed if capital markets are to continue to deliver the types of economic benefits outlined in this paper. At the international level, the World Trade Organization is pursuing global liberalization of financial services, which is expected to offer new opportunities as well as bring new challenges. This important change may be a project for the future, however, given the current emphasis on negotiations over agriculture and tariffs.

## The View from Economic Research Academia — Financial Market Development Does Lift Growth

A vast body of economic research examines those factors that are the major determinants of economic growth. One strand of this literature investigates the importance of financial institutions and markets in facilitating economic growth.<sup>8</sup> The consensus view is that financial development is associated with superior economic performance. All else being equal, countries with better-developed financial systems have higher levels of per capita real GDP. In addition, the evidence strongly suggests that there is a causal element running from financial market development to superior economic performance. Countries with better-developed financial systems tend to grow faster in the future, all else being equal.

However, on the issue of what types of financial market development lead to superior economic performance — banks versus capital markets — the evidence is inconclusive. Academic research reaches no clear-cut conclusion concerning whether a capital market-based system or a bank-based system is better.

The lack of clarity on this issue may stem from two limitations of existing research. First, economists have had difficulty in creating summary measures that can accurately characterize the development of banks versus capital markets. Typically, the stock market's importance is modeled by the ratio of market capitalization to GDP or by a measure that captures the amount of trading activity. The measure of banking system development is usually a bank credit-to-GDP variable. We are skeptical whether these variables are robust enough to isolate the impact of financial market development on economic performance.

For example, they are not able to capture the importance of the development of the derivatives market.

Second, the academic studies that seek to examine the linkage of financial structure to economic performance typically look at a broad array of countries at different levels of economic development. This mixing of countries may obscure the benefits that stem from a capital markets-based system at more mature stages of development. After all, the consensus of most research is that a banking-based system should work better than a capital markets system when the legal and regulatory structure is less well-developed. That is because banks can enforce good corporate governance as a precondition to obtaining bank loans. Also, when financial accounting information is not readily available or not standardized, banks may be better placed to obtain the information needed to assess the creditworthiness of their borrowers. This point implies that for countries at earlier stages of development, a banking-dominated system may deliver superior economic performance. In contrast, the recent experience of the US suggests that a capital markets-based system is superior at a later, more advanced stage of development.

We believe that the economic performance of the United States over the past decade provides strong evidence of the benefits of well-developed capital markets. That is because US economic performance has improved over time, both absolutely and relative to other G-7 countries in which the capital markets are much less well-developed.

<sup>8</sup> See, for example, "Finance and Growth: Theory, Evidence and Mechanisms," Ross Levine, March 18, 2003, for a survey of this literature. Also, "Economic Growth: The Role of Policies and Institutions. Panel Data Evidence from OECD Countries," by Andrea Bassanini, Stefano Scarpetta, and Phillip Hemmings, Economics Department Working Paper No. 283, Bank for International Settlements.

## Designing Capital Markets: Singapore and China

Two countries in Asia illustrate the long path toward financial market development — and the importance of maintaining strong banking sectors even while shifting toward a greater reliance on capital markets.

Singapore's financial system has developed in the context of a robust institutional framework. All of the basic elements — a strong legal system and regulatory regime, transparency, and good management — have been in place for years, with tight regulation. The 1997-1998 Asian financial crisis did much to accelerate the development of the country's financial system. The Monetary Authority of Singapore (MAS), which regulates both banks and capital markets, responded to the crisis in two ways: by adopting a more risk-based approach to banking regulation and by fostering the development of the capital markets.

The MAS now sees its supervisory work as being guided by a focus on risk-based supervision rather than blanket regulation, and it seeks to reduce systemic risk rather than to prevent individual failures. Disclosure is a key element of the regulatory structure. Singapore is considerably more advanced than many countries in Asia in emphasizing technology to deepen its markets. In 2003, it became one of the first members of the Continuous Linked Settlement System, which eliminates foreign exchange settlement risk. Consumer education has also become a priority in recent years, as the MAS has moved away from merits-based regulation.

Recognizing the country's vulnerability to regional contagion, Singapore since 1998 has undertaken several steps to boost its bond markets. It began by issuing government debt on a regular basis to create a benchmark for corporate bonds and by introducing regulatory changes to increase liquidity. Singapore liberalized its foreign exchange regime to encourage foreign issuers. It has also established a regulatory framework for structured products.

China has had much further to go than Singapore in its financial development. When the reform era began in

the late 1970s, the country lacked even the most basic infrastructure for a financial system. Property rights had to be recognized, commercial and securities laws drafted, regulators separated from market participants, and the judiciary strengthened.

China has made considerable progress in developing both its banking sector and its capital markets over the past 25 years. Through restructurings, privatizations, and a loosening of administrative controls, the banking sector is gradually being transformed from an arm of the state into a collection of independent companies with authority over credit allocation. Prudential regulations are being introduced. The key challenge facing China's banking sector — one that will need to be more thoroughly addressed before the moral hazard problem disappears — is the non-performing loan problem. China's major banks are estimated to have bad loans worth 58 percent of GDP on their books. Although the government has established some asset management companies and conducted some bank recapitalizations, it has hesitated to tackle the nonperforming-loan problem head-on.

Development of the capital markets has been a high priority for the past decade. China allowed foreign investors to participate in domestic equity markets fairly early in the process and is steadily opening the capital markets (as well as the banking sector) to foreign competition. The regulatory structure has also evolved, although it has sometimes lagged developments on the ground. For example, the China Security Regulation Commission was not established until roughly two years after the opening of a Shanghai stock exchange.

Earlier in 2004, Chinese authorities in Beijing offered a program to expand the size, liquidity, and transparency of the capital markets, particularly the domestic bond market; expand participation by foreign firms and institutional investors; improve auditing rules, corporate governance, monitoring, and risk management; and reform the tax system to spur investment in these markets.

