

## The U.S. Financial Services Sector

Everyday life tends to expose people to the financial services sector. For example, people make deposits at banks and obtain loans from them. Nevertheless, understanding what this sector does can be difficult. Why do individuals go to intermediaries like banks for mortgages, rather than skip intermediaries (and their costs) and deal directly with savers? And why do financial service firms ask for so much information before making a loan and, afterward, place so many restrictions on borrowers?

This chapter explores what financial services do for an economy, how financial development relates to economic performance, and how financial services can be effectively regulated. In particular, it develops the following conclusions.

- The financial services sector addresses informational problems that can otherwise keep financial capital from finding productive uses. Moreover, the U.S. financial services sector tends to deliver these services in a cost-effective manner.
- Financial services facilitate innovation and thus encourage the economic growth that is necessary to increase living standards over time. They might also bolster economic stability.
- Financial regulation should protect consumers and ensure the system's safety and soundness. Moving too far in the public regulation direction, however, can stifle the productivity and innovation that are necessary for the economy to enjoy fully the benefits of financial services. An effective financial regulatory system appropriately balances the costs and benefits of public regulation.

### The Economic Roles of Financial Services

Financial services address information problems inherent in lending and investing. This section explains this and other benefits, and presents evidence that the United States enjoys a comparative advantage in producing financial services.

#### Financial Services Address Information Problems in Lending and Investing

##### *Adverse Selection*

In general, information problems can hinder efficient economic behavior. Consider an example from the used-car market. In this market, sellers are

likely to have better information than do buyers about the cars being sold. A buyer might have general information about the quality of a certain model, but the seller likely enjoys additional information about the particular car that is being considered. In this and related cases, information is said to be distributed *asymmetrically* across the transaction's parties.

Economic theorists have shown that, absent a tool for reducing information asymmetries, only the worst-quality cars will be sold. In the case of the used-car market, given the general nature of the buyer's information, he or she may be willing to pay only the average price that the model under consideration tends to command. But sellers may then only offer cars that are below average in quality—i.e., “lemons.” Indeed, a seller would incur a loss by selling an above-average car at a price based on the value of the average car. Consequently, high-quality cars might never make their way to the market.

This tendency for sellers of lemons to *adversely select* themselves creates difficulties in a number of markets, including those for financial capital. For example, just as a used car's owner has relatively good information about that car's quality, a manager likely has better information about his or her business projects than does an outside supplier of financial capital. This information asymmetry, in turn, can encourage “low-quality” projects to adversely select themselves into the financial market. As in the automobile example, relatively well-informed sellers (managers) may want to withhold highly valued assets (the right to share in the proceeds of a new project) if the general nature of available information lets buyers bid only an average price. An economy may thus forgo the very projects that are important for its performance.

### *Moral Hazard*

The above discussion shows that, when information is asymmetric before a transaction takes place, the side with relatively good information can adversely select itself. The prospect of this strategic behavior can discourage the financing of otherwise valuable projects. But even if parties to a potential transaction can address this problem, information can still be asymmetric after a transaction takes place. This latter type of asymmetry is known as *moral hazard* and, left untreated, it too can hinder economic efficiency.

Like adverse selection, moral hazard is problematic for a number of markets. For example, because insurance customers have better information about their behavior than do insurers, an individual who buys insurance can subsequently take on too much risk. Here, an insured driver might enjoy the benefit of driving faster (e.g., the value of time saved) while passing at least some of the costs on to the insurance agency (e.g., the value of an expected claim).

A similar phenomenon plays out in more narrowly defined financial services. Indeed, just as insurance customers tend to have better information about their behavior than do insurance sellers, businesses and households tend to have better information about how they use loans than do lenders.

Lending contracts, like insurance contracts, may thus be plagued by moral hazard problems. A manager might, for example, pursue a project that is more risky than what was agreed upon when the loan was made. In doing so, the manager enjoys the benefit of projects that ultimately perform well, but passes the cost of poorly performing projects onto the firm's lenders. Absent an institution that would discourage managers from acting in this manner, suppliers of financial capital will be reluctant to offer financing. Again, the problem of asymmetric information can lower an economy's level of productive activity.

### *Financial Services Can Mitigate Adverse Selection and Moral Hazard*

The above discussions show that information problems can impede the efficient use of financial capital. Because these problems can stand in the way of better outcomes for *both* demanders (i.e., businesses, households) and suppliers (i.e., savers) of financial capital, opportunities exist for a third party to reduce informational obstacles. Financial service providers frequently play this important intermediary role.

Financial service firms can, for example, build expertise in evaluating and monitoring borrowers. Understanding what is, and what is not, a productive project can check the problem of adverse selection. An effective monitoring program can then keep borrowers on task with agreed-upon projects and thus limit moral hazard problems.

Demanding collateral can help mitigate information problems in this regard. To see how, suppose that a low- and a high-quality applicant ask for a loan and notice that, while information about quality is important for deciding whether to grant a loan, low-quality applicants may not want to divulge that information. In terms of the above discussion, lenders are worried about low-quality individuals *adversely selecting* themselves into the pool of applicants.

Asking for collateral can address this problem by encouraging applicants to truthfully (rather than strategically) reveal this information. Here, high-quality applicants are more willing to post collateral because they are more confident that they will not lose it. In this manner, collateral requirements can induce applicants to truthfully separate themselves into distinctive types of borrowers (rather than strategically masquerade as more attractive types).

Likewise, asking for collateral can mitigate the problem of *moral hazard*. Recall from the above discussion that borrowers may find it attractive to opportunistically increase a project's risk. Collateral requirements can mitigate this problem by essentially exposing the borrower's own capital to such risk taking.

In each case, financial service firms reduce informational obstacles that can stand in the way of lending. A good project can benefit both the project's manager and lenders. But because managers tend to have better information about projects, both before and after the projects are underway, passive lenders

will be reluctant to offer the requisite funding. By specializing in setting collateral requirements and evaluating and monitoring projects, financial service firms can play the important economic role of reducing such asymmetries.

### *Financial Services Reduce the Cost of Collecting Information*

A well-developed financial system not only mitigates information asymmetries, it does so in an efficient manner. Notice from the above example that individual savers could, in principle, mitigate these asymmetries themselves. In doing so, however, they would unnecessarily reproduce the same information a number of times. The relatively high cost of collecting information in this manner would still leave an economy with considerable information asymmetries and thus prevent financial capital from being matched with its most productive uses.

A reputable car dealer illustrates this point. After carefully examining a car, a dealer might offer a guarantee. In that case, prospective buyers can take some confidence from the guarantee itself, as opposed to having to reproduce information about the same car through repeated examinations. In a competitive environment, the associated cost savings can make their way to consumers. By essentially delegating the process of information discovery to experts, savers can likewise benefit from having financial service firms examine prospective investments on their behalf. In both cases, intermediaries not only facilitate mutually beneficial trades by reducing information asymmetries, they produce these benefits in a relatively low-cost manner.

## Other Benefits of Financial Services

### *Diversifying Investment Risks*

In addition to being concerned with asymmetric information problems, individuals are concerned with the fundamental risks to which their savings are exposed. Indeed, independent of information problems, the return on investments can be very uncertain. This type of risk can also discourage financial capital from finding productive uses. Financial services can address this problem by economizing on the costs of investing in diversified pools of loans.

By saving at a bank, for example, individuals do not expose themselves to the risk of any one investment. Instead, they can participate in the return from a pool of investments, some of which will perform better at times than do others. On average, then, savers can reduce the volatility that they would otherwise face in an undiversified portfolio while maintaining a relatively high rate of return.

### *Transforming Long-Term Investments into Liquid Assets*

Financial services can economize on the cost of providing liquid access to even long-term investments. Individuals tend to save because they want to

expand their consumption opportunities in the future. But while investments in assets like long-term loans might be good at expanding these opportunities, they are typically not good at facilitating exchanges. It is much easier to buy groceries, for example, with currency than it is with a long-term loan. Absent a mechanism that can readily transform loans into more readily usable forms of money, savers will again be reluctant to invest in projects that could otherwise be mutually beneficial.

Financial firms provide savers with liquidity. Banks, coupled with Federal deposit insurance (discussed in the Policy section below), can fund long-term business projects while fulfilling the transaction demands of depositors. Absent such a service, savers may be reluctant to commit their capital for longer periods of time. But innovative projects frequently need long gestation periods to build themselves into productive endeavors. By giving savers ready access to the proceeds of even long-term investments, financial services again encourage capital to find its best uses.

### *Providing Cost-Effective Means of Payment*

The financial sector also furthers economic well-being by economizing on the costs of producing payment services. The most widely used means of payment, cash, is a good way to make small purchases, but creates difficulties for larger transactions and those made from a distance. Financial services have found innovative ways to make life easier here.

Services like processing checks and conducting electronic funds transfers, to name a couple, can enhance the speed, safety, and convenience of transacting. In addition, means of payment like these can open up opportunities to better match consumers with the producers of goods and services that they demand. Finally, the potential to expand these already considerable benefits is large. By moving even further toward an electronic payment system, for example, the savings in postage costs alone could reach into the billions of dollars.

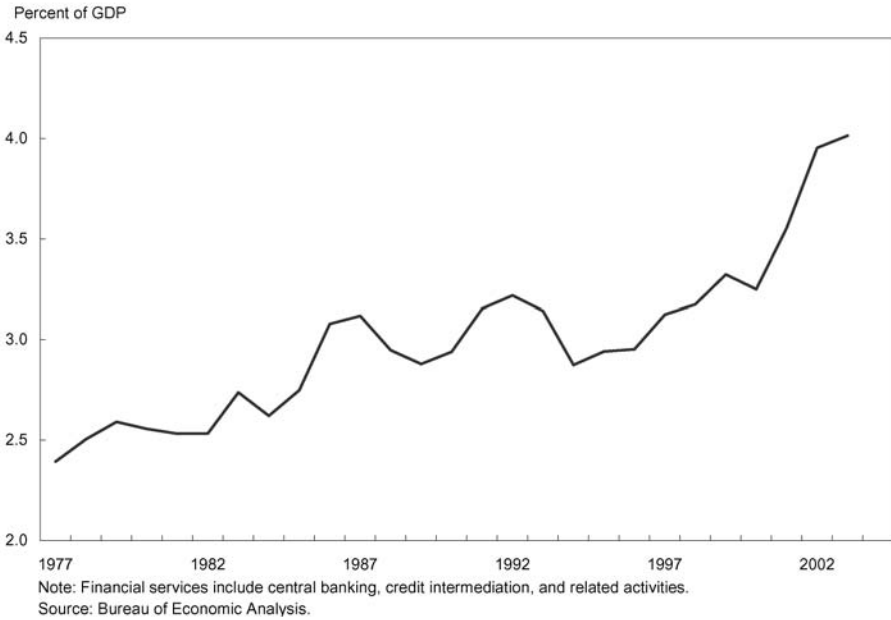
## The United States Enjoys a Comparative Advantage in Financial Services

The U.S. financial services sector has been making increasing contributions to GDP over the past several decades. The growing importance of this sector to the U.S. economy owes, in part, to the U.S. global comparative advantage in the production of financial services.

Chart 9-1 shows how financial services, such as central banking, taking deposits, and making loans, have accounted for a growing share of U.S. nominal GDP. This contribution has increased steadily from about 2 percent in 1977 (the first year for which data are available) to about 4 percent in 2003 (the most recent year for which data are available).

Chart 9-1 **Share of GDP from Financial Services**

The contribution of finance to GDP has risen about 68% since the late 1970s.



The growing importance of the financial services sector is consistent with U.S. workers having a global comparative advantage in the production of financial services. For example, financial firms open offices in other countries to serve foreigners (i.e., to export their services). Since 1997 (the first year for which these data are consistently available), exports of financial services have outpaced imports, with exports increasing by about \$15 billion and imports increasing by only about \$5 billion. In 2004, financial service exports totaled \$27 billion while imports of financial services were only \$11 billion.

## Economic Growth and Stability

The above discussion highlights the potential for financial services to mitigate information asymmetries and economize on transactions costs. Recent research cites these attributes as important channels through which financial services can increase living standards and promote economic stability. This section elaborates on the general economic benefits that financial services can generate in this regard.

## Financial Development and Economic Growth

Well-developed financial markets are important for economic growth. Equipped with a comparative advantage in reducing information asymmetries

and transactions costs, financial service firms can productively identify and guide promising entrepreneurs, and thus pave the way for scarce resources to find innovative projects. Innovations, in turn, can help turn a fixed amount of resources into more output, and thus facilitate increases in living standards.

This funneling of resources to productive projects can also encourage the replacement of outdated and inefficient technologies. Absent productive financial services, for example, individuals can pursue innovations only when they have enough resources to get their projects off the ground. “Idea-rich” but “capital-poor” innovators pose little threat to a market’s incumbents, who can become complacent and set the stage for poor performance to entrench itself. By easing the way for newcomers to participate in the economy, financial services can hasten the replacement of bad ideas with growing opportunities. Box 9-1 discusses the role of financial intermediaries in the development and implementation of particularly innovative ideas.

### **Box 9-1: Venture Capital and Innovation**

Venture capitalists raise funds, search for profitable investments, and then guide investments until sufficient proceeds can be returned to the original contributors. Working through this process, venture capitalists can be especially successful in identifying and guiding productive innovations. An influential study finds, for example, that a dollar of venture capital produces about three times more patents than does a dollar of corporate research and development (R&D). In addition, patents that ultimately emerge from venture capitalization tend to be of high quality.

The previous section of this chapter showed that asymmetric information can slow, or even preclude, mutually beneficial transactions from taking place. In this way, information problems can prevent financial capital from flowing to its most-productive enterprise. These problems can become even more difficult when the project that seeks funding is an innovative one. Indeed, the features of innovative projects tend to be intangible, and thus expand opportunities to strategically act on informational advantages. Without a mechanism for dealing with these advantages, an economy may thus forgo projects that would contribute most to its growth.

Venture capital firms are one such mechanism. Their expertise in identifying productive ideas and creating incentive structures that productively guide development therein lets them attract the type of long-term steady funding that is necessary to see innovations through from start to finish. This necessity for commitment creates risks that do not let other intermediaries succeed. Here, for example, even the most innovative borrowers may lack the credit or business track record that

### **Box 9-1** — *continued*

would make them attractive prospects to conventional lenders. Venture capitalists overcome such obstacles by taking extraordinary measures to examine prospective projects and maintaining a hands-on approach after making an investment. One study indicates that by discovering worthy projects and shepherding them to fruition, venture capitalists are able to annually attract upward of \$100 billion in funding, and channel this capital in a manner that accounts for about 14 percent of U.S. innovative activity.

Consistent with the argument that financial services encourage growth and discourage entrenchment, one study finds that industries that tend to lack their own funding (and thus rely heavily on external sources to finance projects) grow significantly faster when they are located in countries that have well-developed financial intermediaries (such as banks). In addition, studies show that countries that maintain well-developed financial systems tend to grow their economies at relatively high rates.

This relationship between financial development and economic performance also shows up in data from U.S. states. The relaxation of multi-state branch banking restrictions since the mid-1970s, for example, appears to have improved the quality of U.S. bank lending (as measured by a decline in nonperforming loans). Evidence suggests that the entrepreneurial sector responded to this enhanced development by leading state-level economies onto higher and more stable growth paths. Looking at data at the firm- and economy-levels, as well as across countries and U.S. states, researchers have thus found evidence to suggest that an economy's living standards and growth prospects depend to a considerable degree on its financial development.

## **Financial Services and Economic Stability**

The above discussion suggests that economic growth increases with the development of financial markets and services. Fortunately, such long-term benefits need not compromise short-term stability. Indeed, financial development may contribute to a reduction in the volatility of economic activity.

The reduction in economic volatility over the past several decades is well documented. As indicated in Chart 9-2, the volatilities of real output and consumption growth (measured by their standard deviations over 20-quarter periods) have both trended down since 1950. This remarkable decline in aggregate volatility, coined “The Great Moderation,” appears to have set the



stage for a stable macroeconomic landscape that better avoids the inefficiencies that might emerge from increased economic uncertainty.

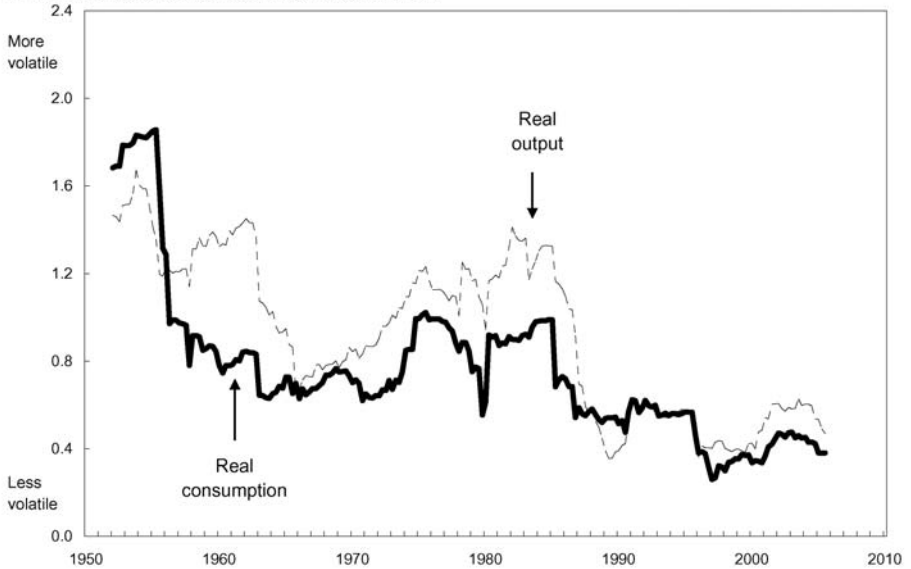
The evolution of the financial system may have played an important, though not exclusive, role in the Great Moderation. One change in the financial system that may have contributed to the Great Moderation was the removal of regulations that created volatility. Evidence suggests, for example, that Regulation Q, which limited the maximum interest that banks could pay on deposits until its repeal in 1980, depressed lending in high-interest-rate environments. As a result, banks may have created volatility by translating financial shocks into real ones.

The Great Moderation may also reflect the financial system's development of more sophisticated ways of managing and sharing risk. For example, banks now use *derivative securities* to insulate their balance sheets from interest-rate risk. Derivatives are contractual arrangements that specify payments between parties, where the payments are usually tied to some observable and verifiable measure (e.g., an interest rate or stock market index). Banks may also use derivatives to essentially purchase insurance against the defaults of large loans. In addition, banks have developed new methods for selling loans to investors through *securitizations*, the process of pooling loans and selling claims on these pools to dispersed investors.

Chart 9-2 **Long-Term Decline in Volatility of Macroeconomic Indicators**

The volatility of macroeconomic variables has declined over the past several decades.

20-quarter rolling standard deviation of quarterly growth rates



Source: Bureau of Economic Analysis.

Further, innovations in consumer financial products offered by banks, such as cash-out-mortgage refinancing (COMR), may have helped to moderate economic fluctuations. This role was evident in 2001, the year of the most recent recession, when households reportedly extracted \$83 billion of home equity, up from \$26 billion in the prior year. In addition, the widespread distribution of consumer credit has almost certainly allowed many individuals to insulate themselves from short-term economic shocks.

## Policy Issues

The financial services sector appears to favorably affect economic growth and may also reduce economic volatility. As the above discussions about financial mechanisms such as collateral and monitoring illustrate, private financiers do a lot to facilitate financial development. However, public policy plays a productive role. In particular, the desire to protect consumers and ensure the safety and soundness of the financial system has motivated policies in this area.

### Consumer Protection

Policies protect consumers in a number of settings. The Food and Drug Administration (FDA), for example, requires producers to disclose certain nutritional content and other information about their products. In the financial services sector, the Truth-in-Lending Act also requires informational disclosures. The Act requires that consumers be made aware of information about the amount and rate of interest that they are paying on a loan.

A consumer-protection issue of current interest is identity theft. To conduct their operations and reduce the risks of lending, financial service firms rely heavily on the Nation's credit-reporting system to both assess risk and verify the identity of credit applicants. Identity thieves prey on this system by using another consumer's personal information to obtain credit in the consumer's name.

*Identity theft* is a considerable problem. In 2005, banks, credit card companies, retailers, and data brokers were involved in high-profile security breaches that affected up to 50 million account holders. The entity whose security is breached generally bears the costs of direct losses from identity theft. However, consumers bear significant indirect costs of verifying fraudulent charges and correcting the damage to their credit profiles.

The Administration has taken substantial steps to protect individuals from identity theft. In 2003, the President signed the Fair and Accurate Credit Transactions Act, which allows all Americans free access to review credit reports annually to ensure the security and accuracy of their credit reports and to protect against identity theft. In 2004, the President signed the Identity

Penalty Enhancement Act, which defined a new crime of “aggravated identity theft” and increased penalties for identity fraud. Congress may enact additional protective measures, and the Administration has recommended that it consider extending to brokers and other entities the consumer safeguards that govern the way financial institutions secure their databases. The Administration also supports narrowly tailored legislation requiring companies to notify consumers if the security of their information has been breached in a manner that creates a significant risk of identity theft. Enacting this legislation would result in uniform national rules for dealing with identity theft, rather than the current patchwork of inconsistent state and local regulations. Of course, some regulations can be overly burdensome if not carefully crafted (see Box 9-2 for additional discussion).

### **Box 9-2: Regulation Is Not Costless**

While regulation can improve economic performance, it can also have the opposite effect if not carefully crafted. For instance, if consumer-protection laws for some transactions are unduly burdensome, financial service firms may stop engaging in those transactions altogether. Therefore, regulations must carefully assess the overall benefit to consumers to be sure the regulation’s benefits outweigh its costs.

Excessive regulation can increase the cost of producing financial services. The now-repealed Glass-Steagall Act is illustrative. The Act prohibited banks from producing commercial and investment services under the same roof. This prohibition addressed the concern that a bank’s investment arm (where banks sell financial securities, like stocks) could opportunistically sell low-quality investments, and then use the proceeds to shore up bad loans from its commercial arm (where banks take in deposits and turn out loans). However, by decreasing the scope of activities in which banks could engage, research has argued that it pushed out economical ways of producing financial services. The costs of regulation, in this case, could very well have outweighed the benefits.

Finally, regulation can work against the ability of financial services to encourage capital to find productive uses. As described in the previous section, research has found that historical restrictions on banks opening new branches in other states decreased the quality of loans. When banks make bad loans, financial capital may not find its most productive use. Consistent with this argument, state-level economies grew at faster and more stable rates after they relaxed bank branch restrictions.

## Safety and Soundness

Another policy concern, the financial system's safety and soundness, has deep historical roots. Until the 1930s, the banking sector was largely unregulated. As such, it was susceptible to *bank runs*, whereby depositors raced to withdraw funds in anticipation that others would do so first. Bank runs are problematic because banks cannot quickly turn loans into cash in order to repay depositors. Indeed, faced with a deposit run, a bank may be forced to sell loans at a discount, which could leave depositors toward the end of the run with little or no money.

To address this problem, the Federal government began to insure deposits. Depositors have little reason to run on a bank when their funds are guaranteed by the government. However, given that this insurance can expose the U.S. taxpayer to potentially large losses, the Federal government has an obligation to ensure that banks operate in a safe and sound manner.

Federal banking agencies have sought to achieve safety and soundness through *supervision* and the setting of *capital requirements*. Agencies supervise banks much like banks would monitor their loan customers. Bank capital requirements dictate the amount of capital or liquid assets that banks must hold as a cushion against potential losses.

### *The Basel Accords*

Capital requirements have found guidance over the past two decades from two international agreements known as the Basel Accords. These agreements were created under the auspices of the Basel Committee on Banking Supervision (which is organized and operated by the G-10 countries) within the larger Bank for International Settlements (BIS) located in Basel, Switzerland. The Basel Accords aim to produce general principles and guidelines rather than promulgate binding law.

Basel I was instituted in 1988, and Basel II was issued in June 2004 (but has not yet been implemented). Basel II was designed to improve upon its predecessor, Basel I, in the areas of risk management and capital adequacy. And while the Accords are intended for large international banks, a number of countries are using them to guide domestic banking industries.

In addition to protecting depositors, Basel I and II aim to mitigate global *systemic risk*: the risk that an event will trigger significant adverse effects on the economy through loss of economic value and confidence in the global financial system. Systemic risk is normally associated with spillover effects, in which the original shock spreads contagiously to other parts of the global financial system and disrupts output and employment. The adverse effects of systemic problems can arise from disruption of credit and capital flows. The failure of a major international bank due to inadequate capital financing provides one example of the type of "event" that could trigger adverse shocks.

Prior to Basel I, countries operated under very different regulatory capital regimes for their banks. Over time this arrangement raised competitiveness and financial soundness concerns, prompting banking supervisors in the industrialized countries to establish common approaches to defining regulatory capital and setting minimum regulatory capital requirements. Still, under Basel I, minimum capital requirements can lack sensitivity to the underlying riskiness of a bank's business activities. This encourages bank investments in higher-risk assets for which regulatory capital charges are too low, and fails to reward improvements in the bank's underwriting and risk-management processes. The lack of risk sensitivity also reduces the effectiveness of statutorily mandated, prompt corrective-action policies in the United States, which are tied to a bank's regulatory capital ratios. In recent years, financial innovations, such as securitization and credit derivatives, and the greater sophistication and complexity of risk-management techniques have rendered the current regulatory capital framework, and related bank-reporting and disclosure policies, increasingly outmoded for large, internationally active banking organizations.

On September 30, 2005, the four Federal banking regulators (the Board of Governors of the Federal Reserve System, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, and the Office of Thrift Supervision) announced their intent to issue in 2006 a Notice of Proposed Rulemaking for the U.S. implementation of Basel II. The banking regulators plan to implement only the so-called "advanced" Basel II approaches, under which minimum capital requirements would be much more closely aligned with a bank's actual risk taking by linking these requirements to the bank's own internal risk assessments. This new framework introduces three "pillars" intended to make reported regulatory capital ratios better indicators of a bank's financial condition and to make a bank's risk taking more transparent to both supervisors and the general public. Pillar 1 sets a bank's minimum capital requirement based on capital formulas whose basic inputs are derived from the bank's internal risk-management systems. Pillar 2 establishes a process through which supervisors and senior bank management will review a bank's overall capital adequacy in relation to its business activities and plans. Last, Pillar 3 attempts to enhance transparency through requiring expanded public disclosures of a bank's risk positions. Under the plan announced by the banking agencies, qualified U.S. banks could begin transitioning to the advanced Basel II approaches in January 2009.

Within the United States, only a few banks are expected to apply this new framework. It will be mandatory only for the largest, internationally active U.S. banks under the belief that the advanced risk-measurement and management standards are most appropriate and cost-effective for these institutions. However, any U.S. bank may elect to adopt the new framework voluntarily.

To address potential competitiveness concerns that might arise from banks being subject to different capital standards, the Federal banking agencies also are considering possible modifications of the U.S. capital rules that would apply to those banks not adopting the advanced Basel II approaches. Broadly, such modifications would be designed to make the rules applicable to the vast majority of banks more risk sensitive, but without sacrificing overall simplicity of the current capital framework.

As discussed above, capital standards for large banks are motivated by the need to protect depositors and limit systemic risk. Concerns about systemic risk extend beyond the traditional banking sector to other sectors, such as government sponsored enterprises (GSEs).

### *Government Sponsored Enterprises (GSEs)*

The Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation, more popularly known as Fannie Mae and Freddie Mac, are two *government sponsored enterprises* (GSEs) that are organized by the Federal government for the purpose of supporting the secondary market for residential mortgages. The original congressional intent behind the formation of these institutions was to provide stability and liquidity in the mortgage market and to promote home ownership, particularly among low-income families, by reducing the costs of mortgages. (The government also pursues these objectives through the Federal Home Loan Bank (FHLB) system.)

Fannie and Freddie primarily run two businesses: mortgage securitization and portfolio management. In their securitization program, Fannie and Freddie buy home mortgages from banks and other mortgage loan originators, package them into pools, and sell claims on these pools to investors as *mortgage-backed securities* (MBS). To augment investor demand, Fannie and Freddie guarantee the interest and principal on the underlying mortgages. These securitization programs provide liquidity to mortgage markets by expanding the range of investors who hold mortgage assets. The portfolio-management function of Fannie and Freddie arises because they purchase and hold MBS on their balance sheets. The combined assets on the balance sheets of Freddie and Fannie rose from \$132 billion (5.6 percent of the single-family home-mortgage market) at the end of 1990 to \$1.38 trillion (23 percent of the home-mortgage market) by 2003.

The market perception that the U.S. government backs GSE-issued debt has facilitated the growth in Fannie and Freddie's portfolios. Although GSE debt is not guaranteed by the government, the balance of evidence suggests that most investors perceive that the Federal government would step in to prevent a GSE default. This perception allows GSEs to issue debt at an estimated 40 basis points (i.e., 0.40 percent) below the rates of their peer institutions. With access to relatively inexpensive funds, the GSEs can easily finance expansions of their portfolios.

The growth in GSE portfolios is accompanied by prepayment risk. Prepayment of mortgages is problematic because GSEs tend to raise funds at fixed interest rates, and prepayments tend to occur when interest rates fall. Raising funds at fixed interest rates implies that GSE debt issued to finance a purchase of mortgages is fixed until the debt matures. However, if interest rates fall and, as a result, prepayments occur, the GSEs must reinvest the funds from the prepayment in the now-lower interest-rate environment. Typical methods for hedging prepayment risk (without assuming additional credit risk) include the use of interest-rate swaps to turn fixed-rate debt obligations into floating-rate ones, and the buying of Treasury securities. Both methods generate income when interest rates fall, helping to offset the decline in income caused by prepayments.

While all mortgage investors may face prepayment risk, the size of the GSEs makes this risk of particular concern to financial markets and regulators. Given the large size of their portfolios, it might be very difficult for the GSEs to quickly adjust their portfolios if hedges turned out to be less than perfect. The sudden failure of one of these enormous providers of mortgage liquidity could severely diminish the liquidity of the mortgage market and create severe financial stress for holders of GSE securities. Prepayment risk is also compounded by the low level of GSE capital. The capital-to-asset ratios (measures of the financial cushion available to absorb portfolio losses without becoming insolvent) of Fannie and Freddie are roughly half the average capital-to-asset ratios at comparable financial institutions.

The Administration's policy proposals have attempted to minimize the systemic risks posed by GSEs, while preserving the benefits for low-income home owners and the liquidity that GSEs provide to mortgage markets. In particular, the Administration has proposed that the GSEs focus on the business of mortgage securitization. As a result, market liquidity will be enhanced for a wider range of mortgages, and the home owner and liquidity benefits associated with the GSEs will be maintained. Moreover, the resulting reduction in the sizes of the portfolios will make the portfolios easier to hedge, decreasing the likelihood of systemic problems with little adverse impact on the liquidity of the market. Indeed, at the behest of the Office of Federal Housing Enterprise Oversight (OFHEO), Fannie's portfolio has declined by \$75 billion in the first half of 2005 without any noticeable effects on the MBS and home mortgage markets. Apparently, there was ample MBS demand from other investors, including banks and insurance companies.

The Administration has also recommended that regulators be allowed a free hand in setting minimum and critical capital levels for the GSEs, and that a clear and credible receivership process be established for the GSEs. This extension of regulatory authority should have little impact on the liquidity-generating activities of the GSEs (i.e., their securitization activities), but would help to mitigate the likelihood of systemic events.

# Conclusion

Information tends to distribute itself asymmetrically—e.g., borrowers tend to have better information about how they will use funds than do lenders. The potential to exploit such advantages can stand in the way of mutually beneficial transactions. Financial services are important for economic performance because they can check this potential in an efficient manner. While they do not make tangible goods, these organizations can play an integral role in expanding economic possibilities.

Public policy can improve upon unregulated outcomes, but must do so in a cost-effective manner. Moving too far on deregulation could compromise consumer protection and system soundness. But moving too far on public regulation can weaken economic performance. A well-developed financial system is thus one that balances the costs and benefits of public regulation. Systems like that in the United States appear to have found this balance, and thus tend to support strong economies.