

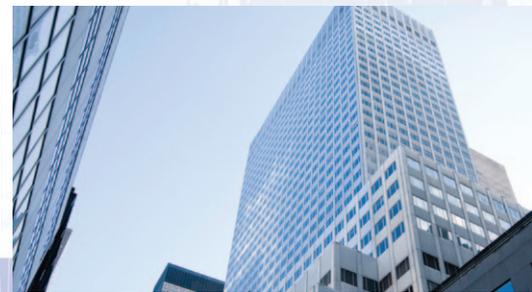


CENTER FOR CAPITAL MARKETS  
COMPETITIVENESS

# SOURCES OF CAPITAL AND ECONOMIC GROWTH:

Interconnected and Diverse Markets Driving U.S. Competitiveness

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*By Anjan Thakor, John E. Simon Professor, Finance and Director, PhD Program  
Washington University in St. Louis and European Corporate Governance Institute*



## CENTER FOR CAPITAL MARKETS COMPETITIVENESS

Since its inception, the U.S. Chamber's Center for Capital Markets Competitiveness (CCMC) has led a bipartisan effort to modernize and strengthen the outmoded regulatory systems that have governed our capital markets. Ensuring an effective and robust capital formation system is essential to every business from the smallest start-up to the largest enterprise.

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# Executive Summary

This paper provides a broad overview of the U.S. financial system. It describes the variety of financing sources available to both individual consumers and businesses, and the considerations that lead a consumer or a business to choose a specific financing source. It then discusses how this variety of financing sources provides benefits to the economy. Five main conclusions emerge from this analysis.

**First, a robust, efficient, and diverse financial system facilitates economic growth.** Research has shown that the level of financial development is a strong predictor of economic growth. This research is based on a study of a large number of countries. Even with the unprecedented economic crisis, the growth in the U.S. financial services industry has been accompanied by a robust growth in our economy, as measured by growth in gross domestic product (GDP). The financial system facilitates economic growth by providing four basic services:

- facilitating trade;
- facilitating risk management for various individuals and businesses;
- mobilizing resources; and
- obtaining information, evaluating businesses and individuals based on this information, and allocating capital.

It is through the provision of these services that the financial system ensures that investment capital is channeled most efficiently from the providers of capital to the users of capital, so that both the economy and employment grow.

**Second, in terms of their financing choices, individuals are largely limited to debt financing for raising capital.** For individuals, these

sources include family and friends, credit cards, home equity loans, and other types of bank loans. Consumer credit provided through these diverse sources is a large segment of our economy. The major providers of consumer credit—commercial banks, finance companies, credit unions, the federal government, savings institutions, and nonfinancial businesses—provided over \$2.4 trillion of consumer credit as of year-end 2010. The efficient availability of this credit is critical in an economy so dependent on domestic consumption. It is important to note that for many smaller businesses, especially start-ups, these consumer credit products are often the only available sources of new or even working capital. Entrepreneurs often rely on access to personal credit, including credit cards and home equity loans, to launch their new businesses.

**Third, as businesses grow they can access both debt and equity financing, and the mix of these two, called the “capital structure” decision, is an important choice every business makes.** Three broad categories of financing sources are available to businesses for either debt or equity capital. One source of capital involves raising funds without using any intermediaries like banks or going to the public capital market. Included in this category are family and friends, employee ownership, retained earnings generated by the operating profits of the business, customers and suppliers, and angel investors. A second category is intermediated finance that does not involve going to the capital market. Included in this are loans from intermediaries like banks and insurance companies, funding by private-equity firms and venture capitalists, small business investment companies that provide Small-Business-Administration-sponsored financing, and

factoring companies that provide financing against receivables. While all these financing sources are important, venture capital has played an especially vital role in helping launch new businesses: venture capital financing accounts for 21% of GDP. Many famous companies like Apple were financed in their infancy by venture capital. For more mature business, bank loans are an essential source of finance. In 2009, U.S. banks made more than \$7 trillion in loans. The third category of financing available to businesses is direct capital market access, whereby the firm uses an investment bank and sells debt or equity claims directly to capital-market investors. These include commercial paper, initial public offerings (IPOs), bond sales, and secondary equity offerings.

**Fourth, a rich diversity of financing sources is provided by the U.S. financial system.**

This diversity helps U.S. consumers and businesses to better manage their risks and lowers their cost of capital. Diversity enables consumers and businesses to effectively match their financing needs to the financing sources, with each financing source providing a different set of services. Since the needs of those seeking financing differ, it is beneficial to have specialized financiers catering to different needs. The result is better risk management and higher investment in the economy, leading to an increase in GDP and employment.

**Fifth, the U.S. financial system is highly inter-**

**connected.** What happens to one financing source typically affects a host of other financing sources as well as those seeking financing. These spillover effects cause any change in the part of the system to be propagated through the entire system, often in ways that are difficult to predict. For example, if our public equity markets were to diminish in the future—say due to excessively onerous regulation—it is very likely that the supply of private equity and venture capital

financing would decline as well. Hence, assessing the risks associated with regulatory changes in the financial system is a notoriously difficult task. This often leads to unintended consequences when changes are introduced in some part of the financial system. Disturbing examples of this can be found in the impact of the Sarbanes-Oxley Act and the litigation environment faced by U.S. companies. These changes have contributed to a slowdown of the rate at which new public companies are formed and an increase in the rate at which existing public companies are leaving the market, leading to a substantial decline in the number of publicly listed U.S. companies.

*A well-developed financial system goes hand-in-hand with robust economic growth and increased employment.*

A well-developed financial system goes hand-in-hand with robust economic growth and increased employment. The better the financial system functions, the more new companies are launched, the larger the number of publicly listed companies, the better the overall management of risk, the greater the availability of consumer credit, and the higher aggregate investment.

# I. Introduction

In the early 1980s, the financial services industry accounted for about 10% of total corporate profits in the United States. In 2007, it was 40%. Some have used statistics like this to argue that financial services are becoming excessively important at the expense of other parts of the economy, such as manufacturing and services that produce obviously tangible economic value. However, nothing could be further from the truth. Given the economic crisis we have witnessed over the past three years, it is easy to forget that growth in financial services over the past two decades was also accompanied by some of the most spectacular economic growth we have ever witnessed. In the 1980s, U.S. gross domestic product (GDP), the most commonly used measure of the size of the economy, stood at under \$3 trillion. In 2007, when the share of total corporate profits accounted for by financial services was four times as large as in the 1980s, it was around \$14 trillion. Today the U.S. financial services industry employs more than 5.77 million people, about 6% of total private non-farm employment, and this number is projected to grow to 12% by 2018. The wealth generated by the financial services industry contributed nearly 6% (\$828 billion) to U.S. GDP in 2009.<sup>1</sup>

In the wake of the recent financial crisis, some have argued that the economic growth we witnessed was merely an unsustainable bubble, and that when the bubble burst, the economy came crashing down. While the causes of this crisis are not the topic of this paper, it is worth noting that the crisis was a consequence of a *variety* of factors in the United States: an excess supply of liquidity due to a global

liquidity-imbalance, an easy-money monetary policy, a political desire for widespread home ownership, and various developments in the financial sector. All of these factors need attention if we are to have a well-regulated, transparent, efficient, and robust financial system consisting of a diversity of financing sources. Thus, financial reform must go hand in hand with a strong financial services sector. The recently passed Dodd-Frank Wall Street Reform and Consumer Protection Act tackles a variety of financial reform issues, but many of the specific regulations have yet to be written, so time will tell about how effectively the Act will deal with the causes of the crisis. Nonetheless, an important point to remember is that the data show a strong correlation between economic growth and strength of financial services.

Financial markets and the financial service firms that operate in those markets help individuals and businesses raise capital of various sorts, as they channel money from savers to those with investment ideas.

It was not a coincidence that the U.S. economy grew so rapidly during a time that financial services grew in importance. Financial markets and the financial service firms that operate in those markets help individuals and businesses raise capital of various sorts, as they channel money from savers to those with investment ideas. The more well developed the financial system, the better lubricated this channel, and the lower the transactions costs and other impediments to investment and economic growth.

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<sup>1</sup> U.S. Financial Services Industry: Contributing to a More Competitive U.S. Economy, SIFMA, <http://www.ita.doc.gov/td/finance/publications/U.S.%20Financial%20Services%20Industry.pdf>, (July 2010).

Indeed, one of the roadblocks to economic growth in the former eastern-block Communist countries in Europe, such as Romania, has been the lack of developed financial systems. The fact that the U.S. financial system is well developed and innovative has been a big boon to individuals and businesses, as they have been able to access a variety of financing sources to raise relatively low-cost capital to grow. Even within the United States, the number one reason

When small businesses do succeed and create employment and growth, an important factor in their success is access to the financing needed to support growth.

for the failure of small businesses is lack of access to funding. Put differently, when small businesses do succeed and create employment and growth, an important factor in their success is access to the financing needed to support growth. The strength of the financial system has also been a significant factor in the creation of prominent new firms that have been launched in the past 25 years and have gone on to become global powerhouses. Starbucks, Yahoo, Google, and eBay are but a few examples. No other country in the world can match this, in large part because no other country in the world has such a deep and vibrant financial system.

What is the U.S. financial system composed of and how does it work? What makes it so deep and vibrant? These are the main questions addressed in this research paper. Section II discusses the role of the financial system in promoting economic growth. Section III provides an overview of the financial system and addresses the question of how the financial system functions. The focus is on the types of businesses that are involved in raising capital, the types

of financing sources available to them, and the financial instruments/contracts that are used to raise capital. Section IV discusses how different parts of the financial system are connected and the role of the large diversity of financing sources in making the financial system deep and vibrant, and facilitating economic growth.

## II. The Role of the Financial System in Promoting Economic Growth

There is a rich body of research on the role of the financial system in promoting economic growth, much of it from comparisons of different countries. For example, in a study of 56 developing countries, the level of financial development in 1960 was a strong predictor of economic growth over the next 30 years, after controlling for a variety of economic and political factors.<sup>2</sup> This and other studies provide ample evidence that robust financial development is followed by healthy economic growth. This section will discuss this research to develop an understanding of what the facts say and *why* they say what they say. But first, it is useful to understand the basic economics behind *how* the financial system promotes economic growth.

### The Conceptual Link Between the Financial System and Economic Growth

A simple example illustrates this link. Suppose we have a community in which four people own productive resources: Mary, Peter, Paul, and Sally. Mary has saved some money that she keeps in a safe in her house. Peter owns an orchard and some apple seeds that he can plant to grow trees and harvest apples. Paul has a farm on which he naturally produces fertilizer. Sally owns some farm equipment that can be used for tilling the land and digging holes for planting trees.

Neither Paul nor Sally is willing to sell any goods or services for the promise of a future return. They will sell only if they get paid now. But Peter has no money to pay anyone now. Mary, on the other

hand, is patient and would not mind giving her money to someone now in exchange for a larger payment in the future. However, she does not know Peter well and is concerned that he might be a crook who will simply abscond with her money if she lends it to him.

Without a financial system in this community, Peter will be limited to planting whatever apple trees he can using his own seeds and labor, but without any fertilizer or farm equipment. Suppose he can plant a few trees and harvest 500 apples a year. That then defines his economic output.

Now suppose the community's financial system includes a bank and a financial market where financial securities are traded. Now Peter can go to the bank and request a loan that would be repaid from future sales of apples. The bank will conduct a credit analysis and determine whether Peter is a good credit risk. The bank will also monitor Peter to make sure that he is not a crook who absconds with the bank loan. With the assurances provided, Mary will be willing to deposit her money in the bank. This is better for her than keeping the money idle in a safe in her house and earning zero interest. With the bank loan, Peter will buy some fertilizer from Paul and some farm equipment from Sally on a cash-on-purchase basis. He can now plant more trees to produce more apples, so he ends up with 10,000 apples rather than 500. The economic output of this economy has gone up due to the financial market. A further increase in economic output may arise from the fact that Paul and Sally may use the money Peter pays them to produce more fertilizer and farm equipment. This output may have uses in other parts of the economy, leading to further increases in economic output, and so on (see figure 1).

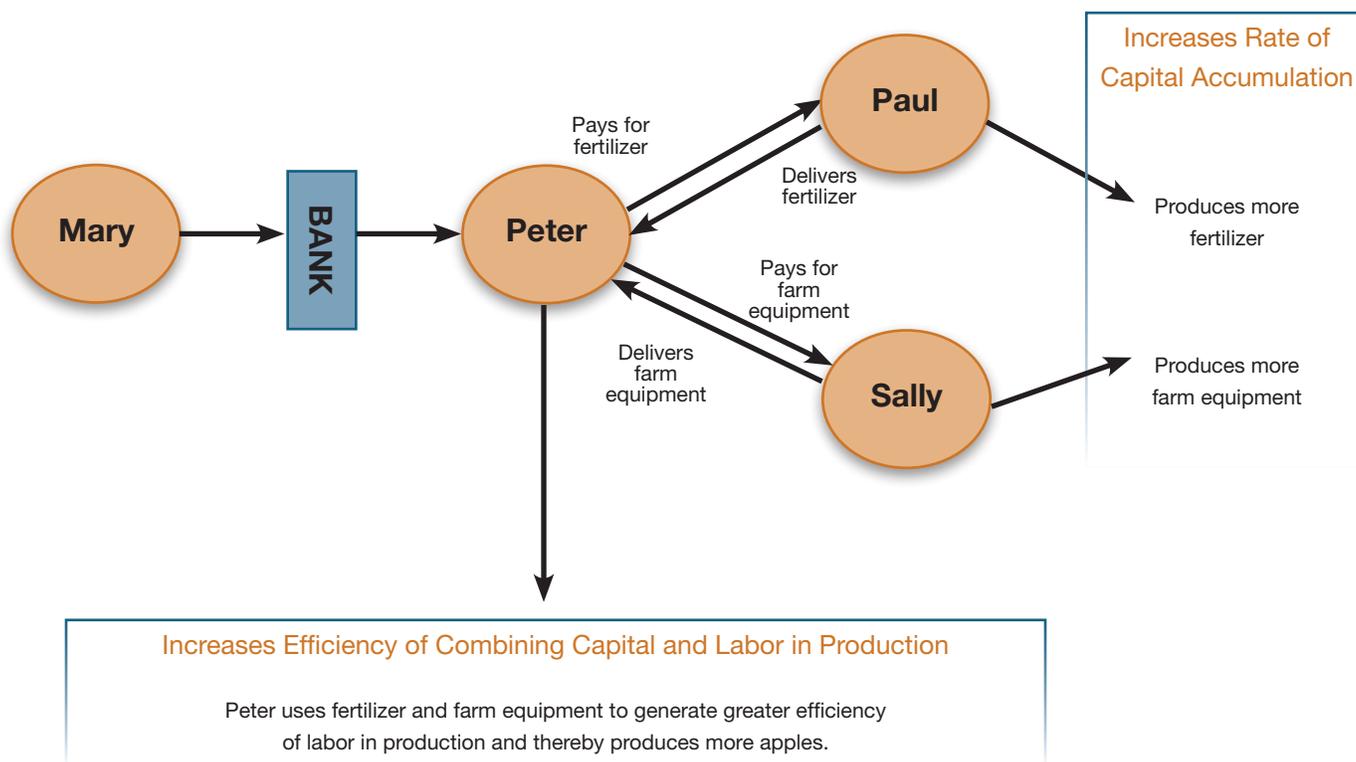
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<sup>2</sup> See Levine (1996).

This simple example illustrates three important ways in which the financial system contributes to economic growth:

- it increases trade and the flow of goods and services;
- it increases the rate of physical capital accumulation; and
- it increases the efficiency of combining capital and labor in production.

**Figure 1: How the Financial System Promotes Growth**



## The Services the Financial System Provides and How They Help Economic Growth

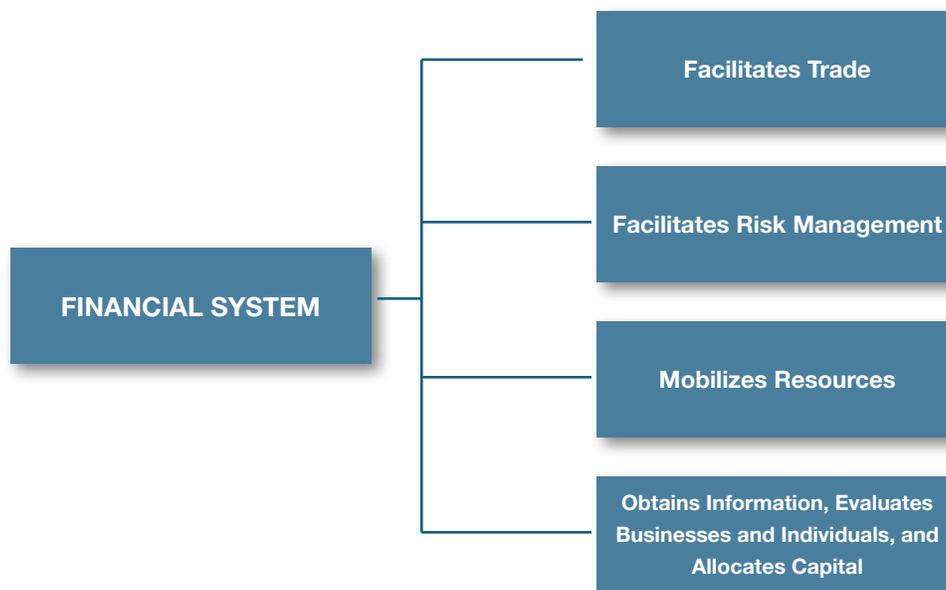
There are four basic services provided by financial systems that help spur economic growth<sup>3</sup> (see figure 2).

**The Financial System Facilitates Trade:** In primitive economies, trade was based on barter, something that Peter and Paul could not do in our example because Peter had no apples in his inventory to trade. The invention of money minimized the

to move money from one party to the other and often across national boundaries. Without these systems, companies would be greatly impeded in their ability to do business with each other, and economic growth would suffer.

**The Financial System Facilitates Risk Management:** Financial systems help individuals and businesses improve their management of various sorts of risks. This is important for economic growth because increased risk reduces investment. In our example, Peter faces some risk when he buys fertilizer and farm equipment to increase his apple

**Figure 2: The Basic Services Provided by a Financial System**



need for barter trade, thereby increasing commercial transactions and trade. In modern economies, it is not enough to have money to facilitate transactions—this money needs to be moved around. Financial systems, with the appropriate hubs and spokes for recording and clearing multilateral financial transactions, help

crop. If it does not rain as much as Peter expects, he may have a lean harvest and be unable to fully repay his bank loan. This may cause him to lose his farm to the bank. Or there may be enough rain, but new apple orchards may spring up in neighboring communities and the market may be flooded with apples, pushing the price of apples well below normal. These risks may cause Peter to cut back on how much

<sup>3</sup> See Levine (1996).

he invests in buying fertilizer and farm equipment. A financial system *prices* risk and provides mechanisms for pooling, ameliorating, and trading risk. It provides producers like Peter a way to manage risks. For example, Peter could use the financial system to purchase insurance against a low harvest or could hedge apple price risk in the futures market. The financial system also gives investors like Mary better risk management opportunities. For example, Mary may be concerned about *liquidity risk* if she lends directly to Peter. Once the money is loaned, Mary may be unable to get any of it back until the apples are harvested and sold. But what if a medical emergency arises and Mary needs the money before then? With a financial system, Mary would simply withdraw her deposit from the bank when she needs it. Thus, *a financial system, by facilitating improved risk management for both borrowers and savers, spurs long-run investments that fuel economic growth.*

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**The Financial System Mobilizes Resources:** As our example shows, without a financial system, Mary's savings would have stayed locked up in her safe. It took a financial system to mobilize those resources and get them to Peter, who could put them to productive use. Almost 150 years ago, the famous economist Walter Bagehot described how the financial system helps to mobilizes resources and spur economic growth:<sup>4</sup>

4 See Bagehot (1873), reprinted 1962, as noted by Levine (1996).

“We have entirely lost the idea that any undertaking likely to pay, and seen to be likely, can perish for want of money; yet no idea was more familiar to our ancestors, or is more common in most countries. A citizen of Long in Queen Elizabeth's time...would have thought that it was no use inventing railways (if he could have understood what a railway meant), for you would not have been able to collect the capital with which to make them. At this moment, in colonies and in all rude countries, there is no large sum of transferable money, there is not fund from which you can borrow, and out of which you can make immense works.”

What Bagehot was referring to was the ability of the financial system to mobilize resources that would permit the development of better technologies that lead to economic growth.

**The Financial System Obtains and Processes Information and Allocates Capital:** Individual savers, like Mary, may not have the resources or expertise to evaluate firms, projects, and managers before deciding whether to invest in them. Financial intermediaries, like banks and investment banks, have a cost and expertise advantage in collecting and processing such information, and then helping the capital-allocation process based on that information.<sup>5</sup> This, in turn, encourages investors to supply capital to these intermediaries, which channel the capital to businesses that make investments that fuel economic growth.

For example, imagine that someone comes to you and asks for a loan to finance a new restaurant. While you have the money to lend, you are not sure this is a good investment for you. But if your friend goes to a bank for the loan, the bank can gather the

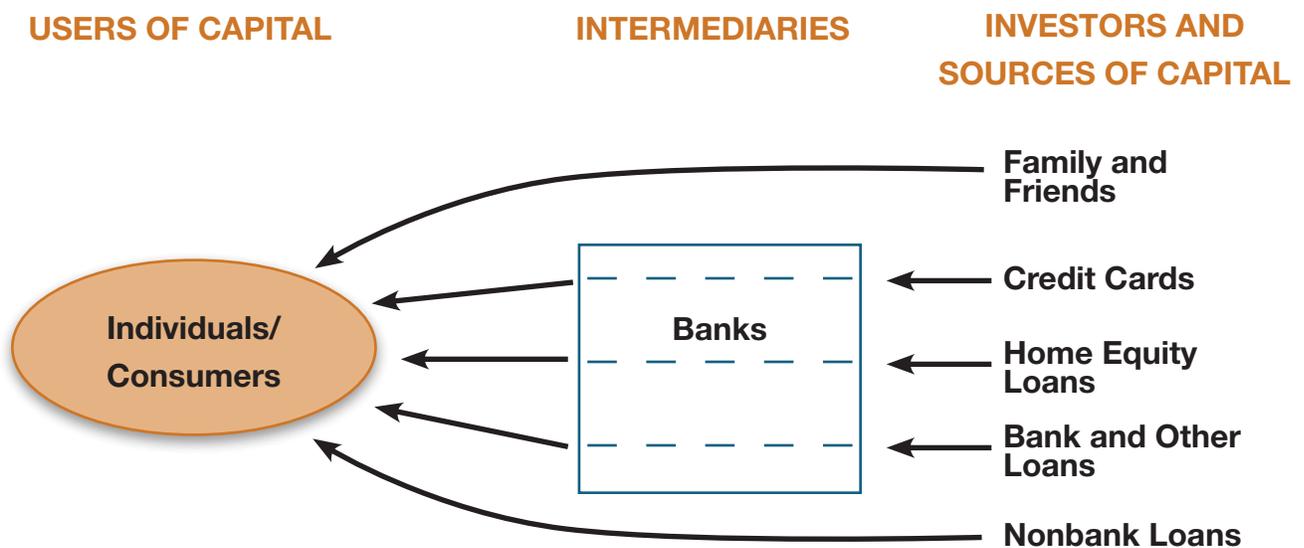
5 See Greenbaum and Thakor (2007).

necessary information about potential future income and the assets purchased with the loan that can be used as collateral, conduct the necessary credit analysis with this information, and decide whether to lend and how to structure the loan. Such expertise is part of the bank’s business skill set. Knowing that the bank will do this, you may be willing to deposit your money so that the bank can, in turn, use it to make loans.

In summary, the financial system provides four key services—facilitates trade, facilitates risk management, mobilizes resources, and acquires and processes information that helps in the allocation of capital. These key services help to increase the flow of goods and services, increase the rate of physical capital accumulation, and increase the efficiency of combining capital and labor in production. The result is more economic growth.

In a different context, venture capitalists are also information-processing experts. When a venture capital firm like Sequoia Capital evaluates a start-up firm, it uses its expertise in assessing the firm’s growth potential and odds of success on the basis of the firm’s business plan. It then uses this assessment to decide whether to provide financing. Promising new ventures that survive this screening are able to obtain more financing than they might receive from family and friends.

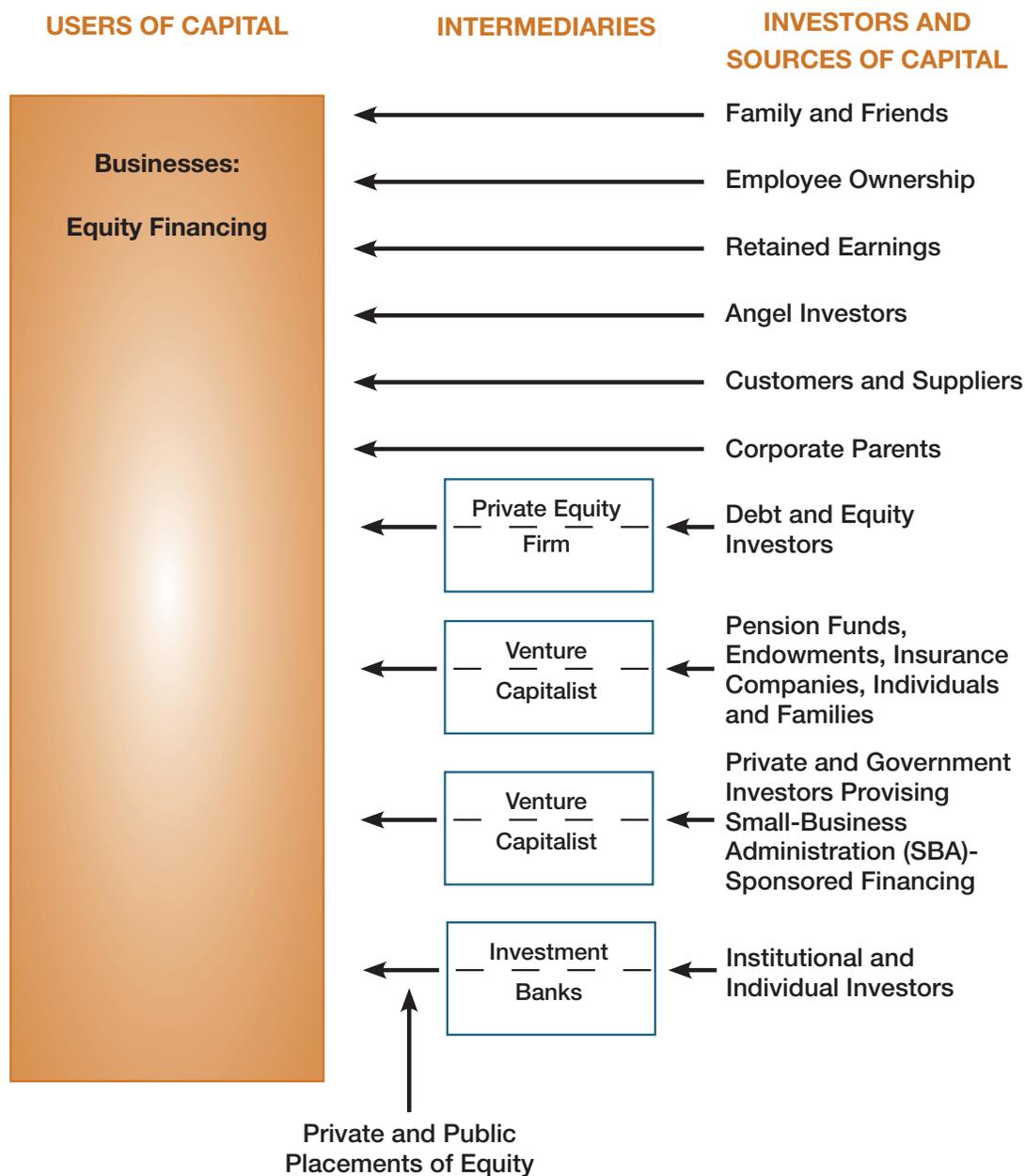
**Figure 3: The U.S. Financial System: Individuals/Consumers**



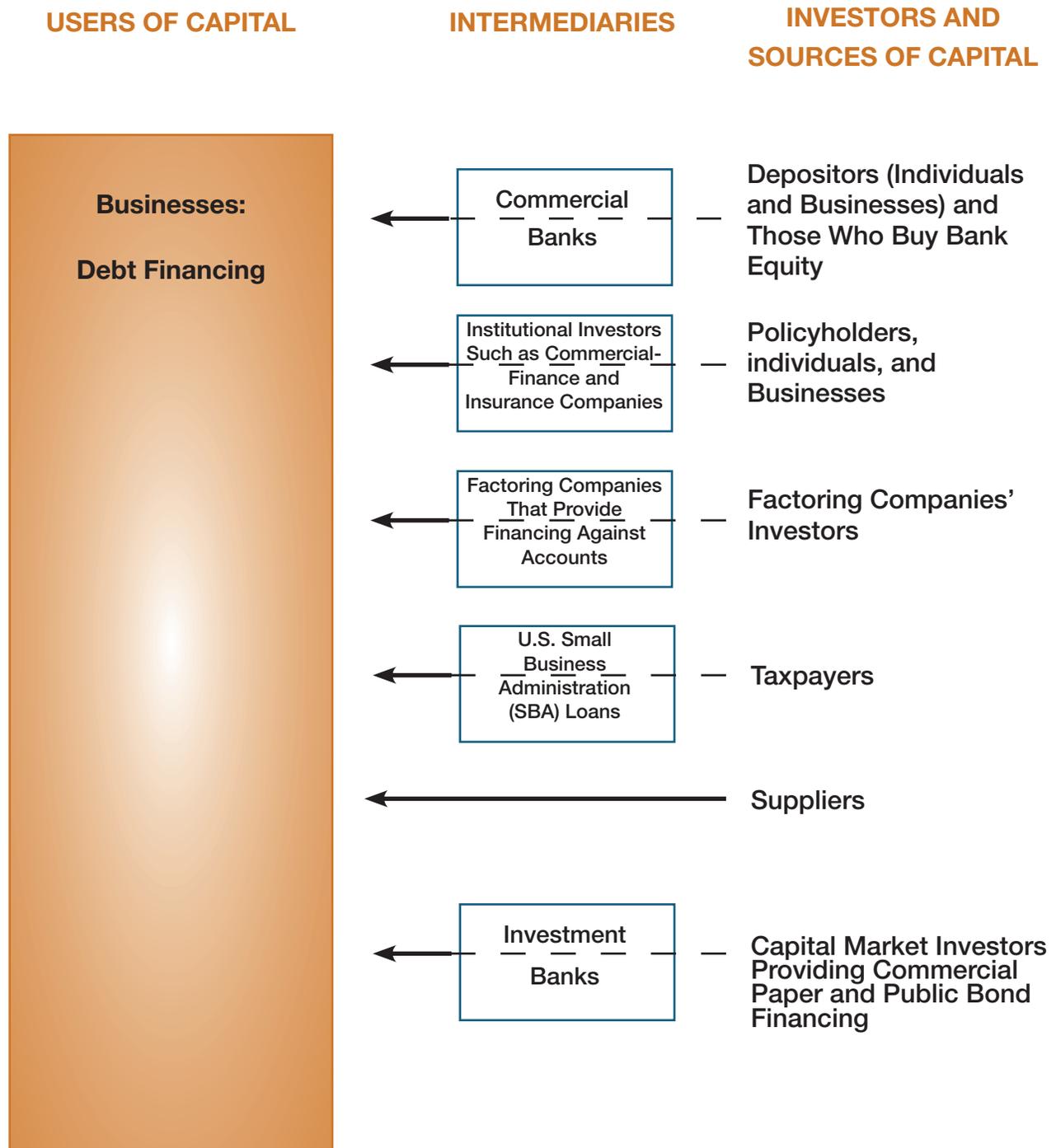
# III. An Overview of How the U.S. Financial System Works

The U.S. financial system is a complex mosaic of institutions, markets, investors (businesses and individuals), savers, and financial contracts, all of which are interconnected. Before we can understand the role played by each part of the financial system, it is necessary to understand some key distinctions between the contracts by which financial capital is raised and the differences between individuals/consumers and businesses with respect to how these financing contracts are used.

**Figure 4: The U.S. Financial System: Businesses Raising Equity Financing**



**Figure 5: The U.S. Financial System: Businesses Raising Debt Financing**



## Debt Versus Equity and Use by Consumers and Businesses

Although a highly developed financial system like the United States has a plethora of financial contracts, the contracts by which individuals and businesses raise capital can be divided into two main groups: equity and debt.

With an equity contract, a business wishing to raise capital would sell an ownership stake in the business to investors, who would provide the external financing the business needs. In the example discussed earlier, Peter might go to Mary and offer her a 30% ownership share in his apple business in order to raise the money to buy fertilizer and farm equipment, rather than taking a bank loan. How much money Mary would make on her investment would depend entirely on the profitability of the business. If Mary invested \$100,000 for a 30% ownership share and Peter made a profit of \$15,000 in the first year after paying off all his operating expenses, Mary would be entitled to receive 30% of that, which is \$4,500. If Peter's business made a profit of \$50,000, Mary would get \$15,000 in the first year alone, and if the business made no profit in the first year, Mary would get nothing in the first year. Each year, Mary would receive 30% of the profits, assuming all profit is distributed as dividends. Moreover, Mary's investment has no stated maturity. That means Peter never has to return her original investment of \$100,000 to her as a lump sum. The only way for Mary to recover that original investment is to sell her ownership stake to someone else.

With a debt contract—for example, a bank loan—the lender is promised a repayment of the original loan amount plus some interest. A debt claim has both a *stated maturity* and *priority over equity*. “Stated maturity” means that the lender must be fully repaid by a certain date. “Priority over equity” means that debt holders must be fully repaid before

shareholders can be paid. In our example, if Peter finances with a bank loan, he must first use all of the profit from selling apples to repay the bank, even before he pays taxes. Only after he repays the bank and pays his taxes can he keep what is left over for himself as the owner of his business.

### Consumers finance primarily with debt contracts.

Consumers finance primarily with debt contracts. Bank loans, home mortgages, and credit card borrowing are all forms of debt contracts. There is a good reason why equity is not used in consumer financing. A loan taken by a consumer is essentially a financial claim by the lender on the borrower's future labor income. It is relatively easy for the borrower to simply withhold the supply of this labor income—for example, by quitting work—and make the lender's claim worthless. A debt contract, with a requirement to repay by a certain date and penalties for not repaying, provides better incentives for the borrower to repay.

Businesses finance with both debt and equity. In fact, the mix of debt and equity financing is an important decision for any business. Equity

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financing is viable for businesses because the financial system provides corporate governance to keep managerial actions roughly aligned with the interests of the financiers of the business. Further, businesses have powerful incentives to keep producing profits,

so they are unlikely to withhold the supply of productive inputs like labor.

## Individual/Consumer Financing

Consumers can tap a variety of sources for financing, most of which is in the form of debt (see figure 3).

**Friends and family** provide a potentially significant source of capital. Often these loans have vaguely defined maturity with specific purposes, for example, a student loan that will be repaid sometime after graduation or a car loan. Many people rely on this form of financing in emergencies or for purposes for which bank loans are difficult to get.

**Credit card financing** is unsecured debt, which means there is no specific collateral backing the loan. Since it is largely used as a means of transaction financing, the issuer expects to be repaid from the borrower's income within a relatively short time. Interest rates and late-payment fees tend to be high to encourage prompt payment. The viability of credit card financing rests on a well-developed financial system with a high level of trust and a deep financial market in which banks can raise financing by securitizing their credit card receivables and selling the claims to investors. The volume of credit card finance, and hence the enormous payment-transactions convenience afforded to consumers, both decline exponentially as one moves from well-developed financial systems (like the United States) to less-developed financial systems.

**Home equity loans** are a convenient way for consumers to borrow against the price appreciation in their homes. For example, say you need \$75,000. Your home is worth \$300,000 and you owe the bank \$200,000. Then your home equity is \$100,000 (\$300,000 minus \$200,000), and you can borrow the \$75,000 you need against the home equity.

Of course, once you take the loan, you will be faced with additional monthly payments on the loan.

Before the subprime financial crisis, home equity loans were a significant source of finance for many consumers. The average U.S. homeowner extracted 25–30 cents for every dollar increase in home equity during 2002–2006, and home-equity-based borrowing was equal to 2.8% of GDP every year from 2002 to 2006.<sup>6</sup>

**Bank and other loans** represent a significant portion of the financing available to individuals. These loans include borrowing from commercial banks, finance companies (e.g., car loans), credit unions, the federal government, and so on. The amount of this borrowing is huge. As of year-end 2010, consumer credit outstanding was \$2.41 trillion, having grown at an annual rate of 2.5% in the fourth quarter of 2010 (see table 1).

**Nonbank loans** are provided by a wide array of lenders. Perhaps the biggest nonbank financial intermediary is the U.S. government. From Fannie Mae and Freddie Mac to Sally Mae (the Student Loan Marketing Association), the amount of credit provision that involves the U.S. government dwarfs that by any bank.

Various other lenders also exist on the “periphery” of the financial services industry and serve as “bankers” to the poor and the excluded. *Pawnbrokers* are one such group of lenders. Pawnbroking is a form of asset-backed (secured) lending. The lender makes a loan that typically is small, say \$50–\$100, for a few weeks or months, and is secured with merchandise (e.g., jewelry, electronics) that has a resale value roughly twice the debt. Interest rates tend to be high, roughly 25–30% per month in some states. Default rates range between 10%

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<sup>6</sup> See Mian and Sufi (2010).

**Table 1: Consumer Credit Outstanding**

Major Providers of Consumer Credit	Consumer Credit in \$ Billions by Year				
	2006	2007	2008	2009	2010
Commercial banks, finance companies, credit unions, federal government, savings institutions, and nonfinancial business	\$2,384.80	\$2,522.20	\$2,561.10	\$2,449.90	\$2,410.40

Source: Federal Reserve Statistical Release, February 7, 2011.

and 30%. In 2004, there were 15,000 pawnbrokers in the United States.<sup>7</sup>

*Payday lenders* represent another source of nonbank credit. They provide unsecured, short-term loans to customers. The loan arises in one of two ways. The first is a “traditional” payday loan, in which the borrower writes a post-dated (or undated) personal check to the lender, and the lender makes a loan equal to the check amount minus a finance charge. The lender usually deposits the check and gets paid the day the borrower receives his pay. The second involves the lender directly debiting the borrower’s bank checking account on a future date for the amount of the loan plus the finance charge. The typical loan has a two-week maturity. Payday lending is legal and regulated in many states, but is illegal or infeasible given the law in some states.

*Title lenders* are similar to payday lenders, the difference being that title lenders make secured loans rather than unsecured loans. That is, the title holder (lender) holds collateral against the loan. Car title loans are quite common, and in this case the lender holds the title to the borrower’s car until the loan is repaid. Title lending is an extension of pawnbroking. A key difference is that while a pawnbroker keeps possession of the collateral during the term of the loan, the title lender may permit the collateral to

remain with the borrower while the loan is outstanding and repossess it only upon default.

Attention will be turned next to business financing. While for purposes of discussion, it is useful to create a clean separation between consumer and business financing, in practice this dividing line is often fuzzy. In particular, many individuals will use their access to consumer financing to raise the money they need to invest in their businesses. For example, someone may charge a business purchase to a personal credit card or use a home equity loan to make the investment needed to expand the business.

## Business Financing: Equity

Businesses can raise equity financing from a richly diverse set of sources (see figure 4).

### Internal Equity Financing

*Family and friends* represent an important financing source for start-up businesses. The typical family or friend investor is someone who has been successful in his own business and wishes to invest both to help a family member or friend and/or because someone had made a similar investment in his business when it was a start-up. For example, a health care private equity firm was launched about 10 years ago in St. Louis, MO, with financing provided entirely by family and friends because the founders discovered that no Wall Street firm was willing to

<sup>7</sup> See Greenbaum and Thakor (2007).

provide start-up financing to a group of individuals who had operating experience in the industry but no private-equity experience. Similarly, Facebook was launched from a Harvard dorm room and eventually expanded with family and friends financing. Typically, family and friends will invest up to \$100,000 each.

**Employee ownership** is another way in which firms can raise equity financing. Employee stock ownership plans (ESOPs) give employees the opportunity to become shareholders in the company. As shareholders, employees can experience increased pride and security, and may become more productive. Employees can participate via stock purchases, by receiving a portion of their compensation as stock rather than cash, and sometimes by providing personal assets to the business. There are more than 11,500 ESOPs in place in the United States, covering 10 million employees (10% of the private-sector workforce). The total assets owned by U.S. ESOPs were estimated at \$901 billion at end of 2007.<sup>8</sup>

**Retained earnings** represent a vital source of internal equity financing for businesses. When a firm makes a profit at the end of a year after settling all its expenses, paying creditors, and paying taxes, it will typically pay out a portion of the profits as a dividend to its shareholders. The amount remaining after the dividend payment is called *retained earnings*, and it augments the firm's equity. Retained earnings may be viewed as a "sacrifice" made by the shareholders in the sense that they forgo some dividends in order to build up the firm's equity. Companies generally retain 30% to 80% of their after-tax profit every year.

### External Equity Financing

**Angel financing** involves raising equity capital from individual investors, known as "angels." These individuals look for companies that have high

growth prospects and some synergies with their own businesses, and operate in an industry that the individuals have successfully worked in or are bullish about. Angel financing is quite often tapped by early-stage companies that have yet to establish a track record of revenues or earnings that would enable them to obtain institutional financing from venture capital firms or banks. In our apple-orchard example, if Peter cannot get a bank loan to buy fertilizer and farm equipment, he might seek out angel investors (typically investors who, unlike Mary, know him and something about his business) to provide the financing in exchange for an (equity) ownership stake in the business.

Angel financing is quite often tapped by early-stage companies that have yet to establish a track record of revenues or earnings that would enable them to obtain institutional financing from venture capital firms or banks.

Angel financing is often quite expensive. Capital from angel investors can cost the entrepreneur anywhere from 10% to 50% of the ownership in the business. In addition, many angel investors charge a monthly management fee.

Businesses can sometimes raise equity financing from **customers, suppliers, and sales representatives**. These parties may be motivated to provide financing because they believe that the business has growth potential that may not be realized without the financial support provided by the equity input, and also that the equity position may become a profitable investment down the road. For example,

<sup>8</sup> The ESOP Association Industry Statistics, [http://www.esopassociation.org/media/media\\_statistics.asp](http://www.esopassociation.org/media/media_statistics.asp) (March 2011).

IBM once invested enough in Intel to own 20% of Intel's equity. It made this investment to financially boost Intel, a key supplier whose microprocessors were used in all IBM personal computers.

**Corporate parents** represent another significant financing source for some institutions. A holding company may provide its subsidiary with capital rather than incurring the cost of raising external capital. For example, when ABN-Amro, the Dutch banking giant, acquired LaSalle Bank in Chicago in 1979, it infused \$300 million of capital into its newly acquired subsidiary.

### Intermediated Equity Capital

Thus far we have discussed non intermediated sources of equity capital, in which the user obtains capital directly from the investors (who represent the sources of capital). Other forms of equity capital involve financial intermediaries that help to link the sources and users of capital.

The first of these is **private equity**. The term private equity (PE) is used to refer to a firm whose equity is not publicly traded on a stock exchange or capital that is not quoted on a public exchange. PE firms specialize in buying firms, some of which may be publicly owned, and holding them as part of a portfolio of privately-owned firms. After they improve the management of these firms, the PE firms either sell them to other firms or take them public through a sale of stock in the market. For example, the Blackstone Group's PE unit recently acquired theme park operator Busch Entertainment Corp. (previously owned by the Anheuser-Busch Corp.) and renamed it SeaWorld Parks & Entertainment. Blackstone also acquired frozen-foods maker Birds Eye Foods in a PE transaction.

PE firms are typically organized as limited partnerships to hold investments in which investment

PE firms specialize in buying firms, some of which may be publicly owned, and holding them as part of a portfolio of privately-owned firms.

professionals serve as general partners, and investors serve as passive limited partners and provide the capital. The PE firm usually collects a management fee of 2% or less plus 20% of the capital gain from the investment. Many PE firms deliver attractive returns to their investors, net of these charges.

The largest PE firm in the world is Kohlberg Kravis Roberts & Co. (KKR), which had more than \$230 billion in completed and pending acquisitions during 2005–2010. Other big PE firms include the Blackstone Group LP, Carlyle Group, Cerberus, Clayton Dubilier and Rice, Goldman Sachs Capital Partners, Bain Capital, TPG Capital, and Permira. While these are the largest PE firms, they represent a mere fraction of the total number of PE firms in the business. There are more than 2,500 PE firms worldwide, and they raise many billions of dollars in capital every year. In 2006, PE firms bought 654 U.S. companies for \$375 billion, and U.S.-based PE firms raised \$215.4 billion in investor commitments.<sup>9</sup>

PE firms use a variety of strategies to acquire firms: leveraged buyouts (LBO), growth capital, distressed investments, mezzanine capital, and venture capital. In a typical LBO deal, the PE firm acquires majority control of an existing or mature firm and finances the acquisition with a relatively high amount of debt. The assets of the acquired firm serve as collateral for the debt used by the PE firms to acquire it.

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<sup>9</sup> Robert J. Samuelson, The Private Equity Boom, Washington Post, <http://www.washingtonpost.com/wp-dyn/content/article/2007/03/14/AR2007031402177.html> (March 17, 2007).

Over time, the cash flows generated by the acquired firm help to pay off the debt used for the acquisition.

Venture capital will be discussed shortly as a distinct source of equity capital because there are also specialized venture capitalists that do not do private equity deals. Growth capital refers to equity investments, quite frequently minority investments, made by PE firms in mature companies that are seeking capital to expand or restructure operations or fund some other major investment. By obtaining this capital from a PE firm, the firm that acquires the capital avoids the dilution in the capital market that would occur if it were to issue equity. There is ownership dilution with a PE firm as well, but the minority ownership of the PE firm represents a (monolithic) block ownership as opposed to a more diffused dilution in the capital market.

Distressed investments are investments (either debt or equity) that PE firms undertake in financially distressed companies. Occasionally, PE firms will take more senior positions than equity in either distressed or healthy firms. These may be subordinated debt or preferred stock (which has seniority over common equity but is junior to debt). The objective in taking such positions would be to reduce the PE firm's risk exposure.

Mezzanine capital refers to a subordinated debt or preferred equity claim on the firm's assets that is senior to the firm's common equity, but junior to other claims. Such capital has a lower return but less risk for the PE firm providing the financing.

**Venture capital (VC)** is an enormously important source of finance for start-up companies. The fact that the United States has the most well-developed VC market in the world—with Silicon Valley setting the “gold standard” for a VC community—has often been singled out as a key reason for

the successful launch of so many new companies in the United States. Numerous famous firms, such as Apple, Google, and Microsoft, were launched with the help of VC financing.

VC-backed companies account for 21% of U.S. GDP and thus play a vital role in job creation in our knowledge economy. Two million new businesses are created every year in the United States, of which about 600 to 800 get VC funding.<sup>10</sup>

VC financing is provided by both government-sponsored and private entities. In fact, an initial step in the development of this industry was the passage of the *Small Business Investment Act of 1958*, which allowed the SBA to license private “Small Business Investment Companies” (SBICs) to help fill the gap between the availability of VC and the needs of small businesses in start-up and growth situations. The structure of the program is unique in that SBICs are privately owned and managed investment funds, licensed and regulated by SBA, that use their own capital plus funds borrowed at favorable rates with an SBA guarantee to make equity and debt investments in qualifying small businesses.

There is also a substantial institutional VC industry in the United States. These privately owned financial intermediaries typically invest in high-growth companies that are capable of reaching sales of at least \$25 million in five years. According to recent estimates based on surveys from the National Venture Capital Association, U.S. venture capital firms invest between \$5 billion and \$10 billion per year. Since 1970, VC firms have reportedly invested in more than 27,000 start-ups to the tune of \$456 billion. Some of the major VC firms include Sequoia Capital, Benchmark Capital, Mitsubishi UFJ Capital, and Kleiner, Perkins, Caufield & Byers.

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<sup>10</sup> *Venture Impact: The Economic Importance of Venture Backed Companies to the U.S. Economy*, (National Venture Capital Association) (2009).

VC firms raise their own financing from investors (sources of capital). These include pension funds (42% of funds), insurance companies (25% of funds), endowments (21% of funds), individuals and families (10% of funds), and others (2% of funds). VC firms typically stay invested in their portfolio companies for five to eight years before selling them off.

**Investment banks** also act as intermediaries that help businesses raise capital from a variety of sources. An investment bank is a financial institution that assists individuals, corporations, and governments in raising capital by underwriting and/or acting as the client's agent in the issuance of securities. An investment bank may also help companies involved in mergers and acquisitions by providing a host of services, such as market making, trading of derivatives, bonds, equity, foreign exchange, and commodities.

Unlike commercial banks, investment banks do not finance themselves with deposits, although most major Wall Street investment banks have become parts of Bank Holding Companies since the subprime financial crisis. Investment banks may have VC subsidiaries that provide VC financing to businesses.

Investment banks also help businesses with **private placements of equity**, whereby new equity capital can be raised without having to issue equity on the public stock exchanges. A firm that wishes to raise equity hires an investment bank to locate institutional and individual investors who wish to invest in the company. These investors purchase the equity being offered for sale in privately arranged transactions. For a private firm, the benefit of this is obvious—because it is not publicly listed, a private placement allows it to raise equity capital beyond what is available from retained earnings. The additional capital can help to finance expansion, business growth, and additional employment. But sometimes

even public firms take advantage of private placement, because it helps to raise equity capital without additional information disclosure of the kind required for a public offering. This can be beneficial for firms that wish to protect the confidentiality of product information or technology.

Facebook is a good example of how private placement of equity can help a firm raise financing for growth. A relatively new company that is at the vanguard of the social-network phenomenon, Facebook's initial equity funding came from private-equity placements with Peter Thiel (co-founder of PayPal), Accel Partners, and Greylock Partners. The first round of private-equity investment in Facebook came in September 2004 when Peter Thiel invested \$500,000 (valuing the company at \$5 million). Since then, PE firms have continued to invest in Facebook. In early 2011, a fund organized by Goldman Sachs invested more than \$1 billion in Facebook. General Atlantic recently agreed to purchase 0.1% of Facebook from its employees at a price that values Facebook at \$65 billion.

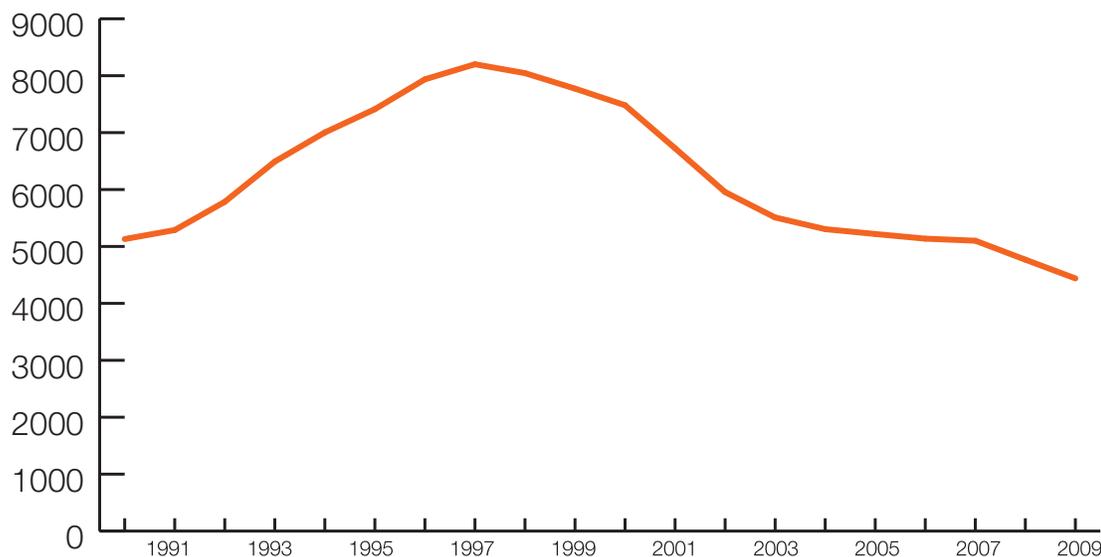
In terms of public offerings of equity, investment banks help to take private firms public through **initial public offerings (IPOs)** of stock. An IPO involves the sale of common stock to the public for the first time. Through the IPO, part of the ownership of the company transfers from the entrepreneur(s) who launched the company to capital-market investors. In exchange, the firm is able to raise hard cash as it sells its shares to investors. The firm will typically hire an investment bank to help with the IPO. Among the many services the investment bank provides are the pricing of the IPO, the "road shows" during which the company is publicized to potential investors prior to the IPO, and the actual underwriting of the equity issue. The investment bank receives a percentage of the proceeds of the IPO as compensation for its services.

A number of large IPOs have been in the news. AT&T Wireless did a \$10.6 billion IPO in 2000, and in 2010 General Motors re-emerged from post bankruptcy privatization with a \$23.1 billion IPO. We all remember Google's IPO in 2004, which turned its 1,000 employees (who were shareholders) into instant millionaires, and its founders, Sergey Brin and Larry Page, into billionaires. Moreover, with its publicly traded stock from the IPO serving as currency, Google was able to acquire video-sharing service YouTube in 2006 for \$1.6 billion.

Apart from a short rebound of a couple of years before the subprime crisis, IPO volume has been declining since 2004.

equity capital after they have already gone public. Companies rely on these **secondary equity offerings (SEOs)** when they need equity capital beyond what is provided by retained earnings. For example,

**Figure 6: The Decline in Publicly Listed U.S. Companies**



Source: Letter by James Angel, dated January 14, 2011, to the Securities and Exchange Commission.

Apart from a short rebound of a couple of years before the subprime crisis, IPO volume has been declining since 2004. There was also a decline prior to 2004, in part due to the more stringent and costly corporate governance stipulation contained in the Sarbanes-Oxley Act. IPOs are one of many indicators of the competitiveness of U.S. capital markets.

In addition to IPOs, investment banks also help publicly traded companies raise additional

in 2009 many U.S. banks made secondary equity offerings to raise equity capital to satisfy regulatory capital requirements, because their equity was depleted during the crisis.

IPOs and SEOs allow publicly traded companies to raise capital, grow, and increase employment. The number of publicly traded companies and the amount of capital that they raise are both good indicators of the health of the economy and the prospects

for future employment. From this standpoint, recent developments in U.S. capital markets cause concern. The number of domestic U.S. companies listed on our exchanges has been declining for the past 15 years or so. At the end of 1997, about 8,000 domestic companies were listed on the New York Stock Exchange (NYSE), American Exchange (AMEX), and NASDAQ. This number had dropped to fewer than 5,000 by the end of 2009, and there are now fewer than 4,000 companies in the Wilshire 5000 index of U.S. public companies (see figure 6).<sup>11</sup> This decline, combined with the sputtering volume of U.S. IPOs, suggests that we are creating new public companies at a slower rate than before and that existing public companies are vanishing at a higher rate than new public companies are being created. Although many factors are contributing to this decline, the litigation environment and regulatory and compliance burdens faced by U.S. companies, as well as the passage of Sarbanes-Oxley Act, are significant issues.

## Business Financing: Debt

### Nonmarket, Intermediated, and Direct Debt

Businesses raise large amounts of financing from debt from a variety of sources. **Commercial banks** are traditionally an important source of debt financing. For example, Avolon, an aircraft leasing group, announced in January 2011 that it had raised \$2.5 billion in debt since May 2010, the latest coming in the form of \$465 million debt raised from a consortium of three leading U.S. banks: Wells Fargo Securities, Citi, and Morgan Stanley. Businesses use banks to obtain short-term, intermediate-term, and long-term debt financing.

**Short-term bank financing** (typically with loan maturities under one year) is used by businesses to finance *working capital* needs, that is,

the cash-on-hand that is needed to pay suppliers, support inventories, and pay other daily bills. Intermediate-term and long-term debt-financing take the form of *bank-term loans*. These are the standard commercial loans with fixed interest rates, set maturity dates, and monthly or quarterly repayment schedules.

**Intermediate-term loans** usually have a maturity of three years or less. They are generally repaid in monthly installments (in some cases with balloon payments) from the cash flows generated by the sale of goods and services and the collection of cash. In our apple orchard example, Peter would pay off an intermediate-term loan by selling apples and collecting cash from his customers.

**A long-term loan** typically has a maturity of between three and ten years. These loans are secured (collateralized) by some assets in the business. Operating cash flows are still relied on for making either monthly or quarterly repayments.

In 2009, U.S. banks made more than \$7 trillion of commercial and industrial, real estate, and consumer loans, as well as other loans and leases. (see figure 7). This is a very important source of debt financing for businesses.

In addition to making loans, banks also make **loan commitments** to businesses. In a bank loan commitment, a bank promises to lend the borrower up to a predetermined amount at a contractually determined interest rate in the future. Typically, commitments are provided for specific uses, such as meeting working capital financing needs or financing an acquisition. As of March 2001, outstanding (unused) bank loan commitments to U.S. corporations stood at \$1.6 trillion, so this is a large source of financing.

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<sup>11</sup> Letter by James Angel, to the Securities and Exchange Commission (SEC) <http://www.sec.gov/comments/s7-02-10/s70210.shtml> (January 14, 2011).

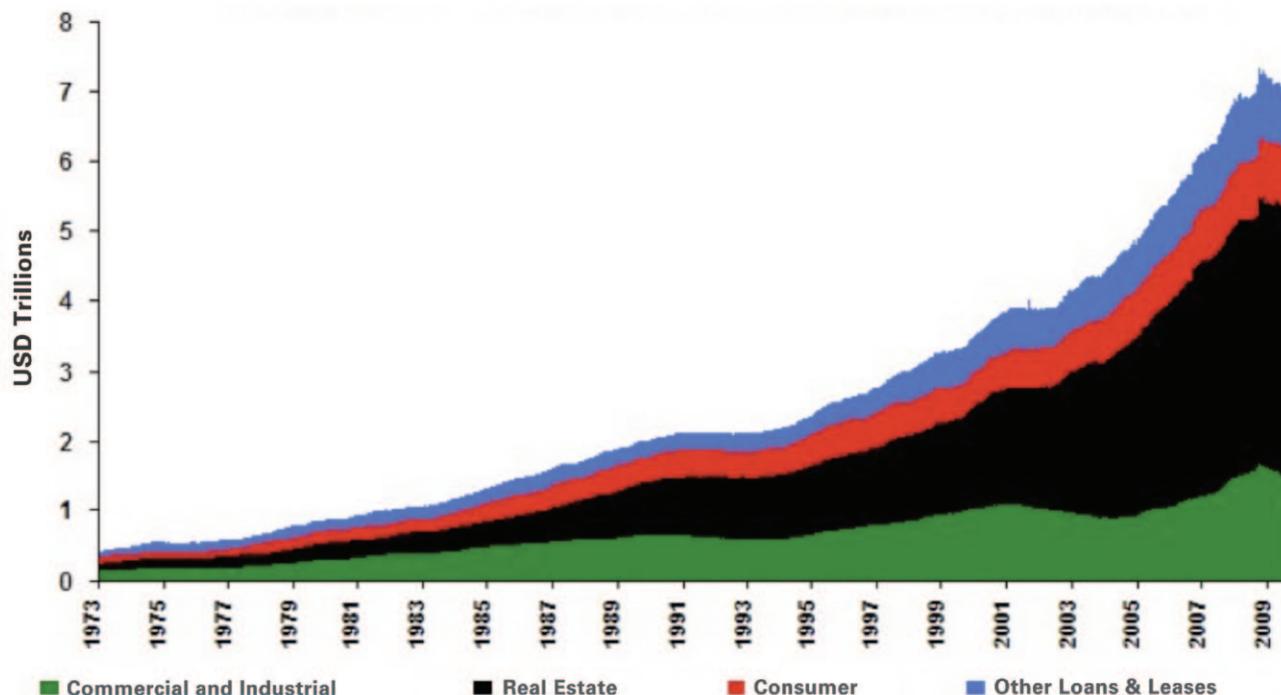
Insurance companies are interested in making long-maturity loans because they need to balance the risk of their long-maturity liabilities, like life insurance policies.

**Institutional lenders**, such as commercial-finance companies like GE Capital and insurance companies, have been a major source of long-term debt financing for U.S. businesses. Institutional lenders make loans that may be more than 10 years in maturity and thus fill a need at the longer end of the debt maturity spectrum (term loans are typically less than 10 years in maturity). Insurance companies are interested in making long-maturity loans because they need to balance the risk of their long-maturity liabilities, like life insurance policies. By making such long-term loans available to companies, insurance companies help their borrowers improve their risk management. For example, many companies make

long-term investments in manufacturing plants (such as Ford or Caterpillar), networks (such as AT&T), and so on. These investments produce cash flows over a long time horizon. The risks in these investments are best managed by financing them with relatively long-maturity liabilities, such as loans from insurance companies. Absent such loans, the management of risks inherent in long-term investments would not be as efficient.

The **factoring of accounts receivables** is another source of debt financing that is available to businesses. Every business that sells to customers on credit—the customer purchases the good or

Figure 7: U.S. Aggregate Lending: Commercial Banks (Seasonally Adjusted)



Source: www.econographer.com

service but pays at a later date—generates “accounts receivables” when it makes sales. In our apple orchard example, Peter might sell \$1,000 of his apples to the school in his town but the school may not pay Peter until three weeks later. Peter would then record \$1,000 as a sale on his income statement and \$1,000 as an account receivable on the asset side of his balance sheet. The problem with accounts receivables is that even though a sale has been recorded, there is no cash coming in at that time. Sometimes, a company will “factor” its receivables. Specialized factoring companies will provide cash to the manufacturer against that manufacturer’s accounts receivables, with a reserve payment set aside, that is, the factoring companies purchase the receivables. After the manufacturer’s customers have paid, the factor pays the manufacturer the balance minus an amount representing the factor’s discount and interest on the funds originally paid to the manufacturer.

**Accounts payable** is a similar source of financing provided by the firm’s suppliers. Most firms do not pay their suppliers as soon as they receive the goods. It is fairly common practice for firms to pay their suppliers within 30 days of receipt of the goods (e.g., Dell has followed this practice), but some companies take even longer. For example, AB-Inbev, the beer company, has a 90-day payment policy for its suppliers. Whenever a company purchases something but does not pay for it right away, it records the purchase as an expense on its income statement and the amount yet to be paid as a liability, called accounts payable, on its balance sheet. This liability is essentially a form of short-term debt.

**The U.S. Small Business Administration (SBA)** provides another source of debt financing. The SBA offers long-term financing for purchasing fixed assets. Typically these loans require a personal guarantee from any investor with a stake in the business exceeding 5%.

## Public Debt

Thus far we have discussed nonmarket, intermediated, and direct (non intermediated) forms of debt. Companies that have publicly traded debt can also directly access the capital market for borrowing by issuing *public debt* with the help of investment banks. Two main forms of public debt are available to U.S. firms: commercial paper and long-term debt.

Companies that have publicly traded debt can also directly access the capital market for borrowing by issuing public debt with the help of investment banks.

**Commercial paper** is usually short-maturity (less than one year) unsecured debt financing that is available only to the highest-credit-quality firms. It is typically used for financing accounts receivable and inventory. This is a huge market, with almost \$1 trillion in outstanding commercial paper predicted for 2011. At the end of 2009, there were more than 1,700 commercial paper issuers in the United States. Commercial paper is available in a variety of denominations and usually ranges in maturity from 2 to 270 days. It is relatively low-cost (currently, commercial paper rates are less than 0.5% per annum) and hence attractive to companies that can access the commercial paper market. For these companies, it is often an alternative to a short-term bank loan. However, it is also risky because its availability and cost are highly dependent on volatile market perceptions of the firm. For example, in March 2002, Bill Gross, manager of PIMCO Total Return, the world’s largest bond fund, said that General Electric (GE) was excessively reliant on commercial paper and that his fund would not buy any GE commercial paper “for the foreseeable future.” GE’s stock price fell 3.5% after

the announcement.<sup>12</sup> More recently, when the credit market experienced stress during the subprime crisis, the commercial paper market was one of the first to dry up.

Commercial paper is usually a very safe investment because the issuer's financial condition can be reliably predicted over a short time horizon and because only companies with relatively high credit ratings issue commercial paper. The typical denomination for a commercial paper issue is \$100,000 or more, which makes direct investment in commercial paper difficult for retail investors. To deal with this, *money market mutual funds* have emerged that invest in commercial paper, allowing investors to invest indirectly by purchasing shares in the mutual fund.

**Long-term debt** involves bond issues with maturities exceeding one year. While commercial paper is typically used to satisfy short-term liquidity needs of the firm (e.g., financing inventories), long-term debt is used to finance the purchase of fixed assets like machines or acquisitions of other companies. Companies rely on long-term bond financing for a variety of uses and typically pay higher interest rates than on commercial paper. For example, McKesson, the biggest U.S. drug distributor, issued \$1.7 billion of 5-year, 10-year and 30-year bonds, as reported in its February 23, 2011, filing with the SEC. Tracking the upward-sloping yield curve, the interest rates were 3.25% on the 5-year bonds, 4.75% on the 10-year bonds, and 6% on the 30-year bonds.<sup>13</sup> As of 2007, the amount of U.S. corporate bonds outstanding exceeded \$5 trillion.

In both cases, commercial paper as well as long-term debt, investment banks help firms with the process of issuing debt to capital market investors.

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<sup>12</sup> CNNMoney. "GE Drops on Gross Comments", <http://money.cnn.com/2002/03/21/News/companies/ge/index/index.htm> (March 21, 2002).

<sup>13</sup> McKesson Corp. Form 8-k, EdgarOnline, <http://yahoo.brand.edgar-online.com/displayfilinginfo.aspx?FilingID=7757832-4769-12827&type=sect&dcn=0000950123-11-019414>.

## IV. The Interconnectedness of the Financial System

Two important messages emerge from the description of the financial system. One is that there is a great *diversity* of financing sources available to individuals and businesses seeking financing. And the other is that the different components of the financial system are *interconnected*.

Why do we need such a diverse set of financing sources? The simple reason is that the greater the diversity, the more effectively the financial system can meet the needs of individuals and businesses. For example, suppose that the only mortgages available were 30-year fixed rate mortgages. These might meet the needs of individuals who wish to lock in an interest rate for a long period of time. But what about the person who believes interest rates might fall in the future or whose financial condition is likely to improve over time so he would be able to afford higher interest rates in the future? Such a person would prefer a variable or adjustable rate mortgage, in which the interest rate fluctuates with market rates, or one that has a lower initial rate and a higher subsequent rate. A greater variety of mortgages accommodates a greater variety of individual preferences and needs.

Like individuals, businesses have a diverse set of needs. Some face a great deal of uncertainty in their core business model and prefer to finance largely with equity in order to limit the bankruptcy risk associated with debt. Other firms invest heavily in R&D and have substantial intellectual property that they wish to protect. Such firms will also tend to finance primarily with equity to minimize bankruptcy risk. Microsoft is one example. Other examples are drug companies such as Merck that invest heavily in R&D. These firms tend to have low debt/equity ratios in their financing mix.

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The reason that firms such as Microsoft and Merck, which have intellectual property to protect, tend to use relatively low amounts of debt is that an increase in debt financing brings with it a higher likelihood that the firm will be unable to meet its repayment obligation or violate certain debt covenants. For example, as we saw in the subprime crisis, homeowners who defaulted on their mortgages were those who had higher loan-to-value ratios than others, because higher indebtedness meant larger monthly mortgage payments and hence a lower ability to make the payments when faced with a decline in income. The same is true for companies. When there is a covenant violation or default on a repayment obligation, the firm may be forced to either sell assets (some which may have valuable intellectual property) or declare bankruptcy (in which case ownership of the intellectual property might transfer to the creditors).

Even within the spectrum of a specific form of financing like equity or debt, diversity plays an important role. Consider equity first. Some firms prefer to finance primarily through retained earnings because it is important for them to avoid the ownership dilution associated with issuing equity. Yet others, especially those firms that are growing rapidly, will

find that relying solely on internally generated equity is not enough to support their growth. Such firms will wish to use external equity financing. And in this respect, the more diverse the sources of external equity finance, the better. For example, a firm may be seeking equity to help finance its growth in a market in which it is selling a product for which it has developed a proprietary technology. Such a firm may not wish to issue equity in the *public* market because it would have to disclose sensitive information about its technology, due to the information disclosure requirements of the securities exchange. While the information is disclosed primarily for investors, it is also necessarily revealed to competitors at the same time. To avoid this, the firm may wish to use a private placement of equity to raise external equity capital. If the private placement option were not available, the firm might prefer to forgo issuing equity and expanding in order to protect the confidentiality of its proprietary technology. It is easy to think of examples. Facebook raised private equity at a time when it would have found it difficult to raise public equity. Similarly, Intel raised private equity from IBM, a customer, rather than issuing public equity. Although IBM has divested most of its holdings in Intel, at one time it owned 20% of the company.

By contrast, other firms might be more interested in a public sale of equity—either through an IPO or an SEO—because publicly traded equity provides greater liquidity and typically has a lower cost of capital associated with it than private equity. Moreover, public equity also helps with employee motivation and retention. For example, having publicly traded equity allows companies like Microsoft and Starbucks to compensate their employees with shares of stock. When Microsoft's stock price was rising rapidly in the 1990s, this was very attractive to its employees and it allowed Microsoft to attract and retain high-quality talent. Starbucks takes stock ownership right down to the employees in its retail stores.

These employees understand that if they work hard and provide the best customer service, Starbucks' stock price will go up. Such employee stock ownership is valued more by employees when they can sell their stock in a liquid public market than when it is privately held.

Diversity of financing sources is also important for businesses seeking debt financing. Sometimes firms have short-term borrowing needs. They would tend to satisfy these needs through accounts payable financing, accounts receivable factoring, or bank loan commitments. Larger firms with impeccable credit ratings may choose to augment these short-term financing sources with commercial paper financing. The availability of diverse short-term financing sources permits firms to match quite precisely their specific needs to the financing source. The result is that more short-term financing needs are met than would be possible with fewer financing sources. Consequently, firms invest more.

At other times, firms have longer-term debt financing needs. A firm may be investing in a new factory that has an anticipated economic life of 20 years. For such a long-term investment, it will seek a long-term loan. If only short-term debt financing were available, the firm might pass up the investment opportunity.

Firms sometimes finance acquisitions with debt. For example, InBev's purchase of Anheuser Busch, the largest U.S. beer manufacturer, was financed predominantly with debt. In such cases, the firm may wish to match the maturity structure of its debt with the pattern of cash flows it anticipates generating after the acquisition. This, too, typically calls for long-term debt financing.

A diverse set of financing sources also enables firms to strike the appropriate balance between the cost of debt financing and liquidity

## A diverse set of financing sources also enables firms to strike the appropriate balance between the cost of debt financing and liquidity risk.

risk. Since long-term debt financing is usually more expensive than short-term debt financing, pure cost considerations would push the firm in the direction of short-term debt like commercial paper or a short-term bank loan. But short-maturity debt also exposes the firm to liquidity risk because it may not be able to roll over its short-term debt. A recent example of this is Bear Stearns, the investment bank. It was financing itself with debt of one-month maturity that was rolled over every 30 days. When concerns about its hedge-fund losses became sufficiently grave, this 30-day debt financing evaporated, and the bank was on the brink of insolvency before its government-assisted takeover by JPMorgan Chase. Firms are constantly trying to balance the cost of borrowing against liquidity risk, and a diverse set of financing sources helps them to achieve the right balance.

### **A greater diversity of financing sources helps individuals and businesses to:**

- improve their management of risk and achieve a better balance between the cost of financing and risk; and
- increase investments, and thus employment in the economy.

It is useful to note that the different parts of the financial system are intimately interconnected. For example, venture capital and private equity are available in part because we have such deep and relatively efficient capital markets. PE and VC firms make their investments with the expectation that

they will eventually exit by taking these firms public and selling off their ownership shares. If our public equity markets were to diminish in the future, perhaps because of excessively onerous regulation, it is very likely that the supply of PE and VC financing would decline as well. Without the attractive “exit option” provided by the public equity market, PE and VC firms would view their investments as lacking the potential to be “liquefied” in the future via an IPO, and would therefore scale back on their investments. Clearly, some capital market regulation is necessary to ensure transparency and integrity, and this improves the efficiency and attractiveness of the market. But when it becomes excessive, it can drive firms away. Thus, more onerous capital market regulation might reduce investment in small and mid-sized companies and lower aggregate employment.

Similarly, good public equity and debt markets allow banks to raise debt and equity capital to support their own growth. This, in turn, enables banks to extend loans that support the financing needs and growth plans of individuals and businesses. If burdensome new regulatory requirements made bank capital more expensive, bank lending would decline. The consequence would be lower GDP growth and employment.

Indeed, given the interdependence between banks, markets, and among the different components of the market, if one financing source were to disappear, it would have potentially devastating consequences for other parts of the financial system.<sup>14</sup> This can be seen most vividly in emerging markets. When Romania converted from a centrally planned, Communist-run economy to a free-market economy, the housing market was underdeveloped. It was difficult to jump-start this market even in the new free-market economy because banks were reluctant to lend to consumers to buy houses. This reluctance

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<sup>14</sup> See Song and Thakor (2010).

arose from the inability of banks to securitize home mortgages because the securitization market did not exist in Romania the 1990s.<sup>15</sup> Thus, the absence of the securitization market stunted the growth of the home mortgage market.

Even within the United States, we have seen numerous examples of this. Many U.S. corporations, especially non-depository financial companies, rely on the repo market for their short-term funding needs. The repo market, whose precrisis size is estimated at between \$10 trillion and \$20 trillion, involves a firm taking a short-term loan (typically overnight loans) from another firm under a repurchase agreement in which eligible securities are used as collateral. So, I might have \$100 worth of marketable securities against which I might borrow \$100 from you for, say, a day. When I repay the loan, I get my securities back (I “repurchase” them). If I default, you keep the securities. Repos have “haircuts” associated with them. If I can borrow \$100 against \$100 worth of securities, the haircut on the repo is 0. If I can borrow only \$90 against \$100 worth of securities, the haircut is 10%, and so on. It is estimated that between early 2008 and early 2009, the haircut on repos went from 0 to 45%.<sup>16</sup> If one takes the simple average of these two numbers as the average haircut during this period, then one can estimate that about \$2.25 trillion in short-term borrowing capacity vanished fairly quickly from the market as companies were now able to borrow that much less using the same collateral as before. This led to a significant decline in lending to individuals and businesses, as a major part of our financial system found itself to be liquidity constrained.

This example illustrates both interconnect- edness and the danger in making changes in one part of the financial system. One reason that repo haircuts went up is that bad news began to trickle

in about defaults on home mortgages, and many of the securities being used as collateral in repos were mortgage-backed securities. Thus, what happened in home mortgages affected short-term credit avail- ability to financial firms, which then spilled over into a general decline in the credit available to businesses and individuals.

Imagine what would happen to U.S. credit card lending if the market for credit card securitiza- tion were to disappear. Millions of consumers would find themselves without access to credit cards. Simi- larly, imagine what would happen to entrepreneurs if venture capital were to disappear. Scores of new businesses would fail to be launched.

When the components of the financial system are so interconnected, even small initial changes in one part of the system can reverberate through the entire system and manifest as big eventual changes.

The “theory of unintended consequences” says that it is difficult to predict how the financial system will react if one of its components is tinkered with via regulatory changes. When the components of the financial system are so interconnected, even small initial changes in one part of the system can reverberate through the entire system and manifest as big eventual changes. For example, when the Federal Reserve injected substantial liquidity into the economy from 1995 through 2005, it was hard to imagine that this would contribute to a housing price bubble and crisis. Such unintended consequences are also encountered in other parts of the economy.

15 See Meyendorff and Thakor (2002).

16 See Gorton and Metrick (2010).

For example, not many would have predicted that the “cash for clunkers” stimulus initiative would have the unintended consequence of hurting automobile parts suppliers and putting many of them out of business. Interconnectedness magnifies the errors embedded in regulatory missteps and increases the uncertainty generated by them.

The effects of this interconnectedness can spill over into different types of financing. For example, suppose that banks find their equity capital has been depleted because of credit and trading losses such as those that we witnessed during the recent crisis. At the same time, it might be more difficult to access public equity markets for more capital because the market is stressed and investors are averse to purchasing additional equity in banks. A consequence of this would be a decline in bank lending, similar to the 7.5% decline in U.S. bank lending witnessed in 2009.<sup>17</sup> Another consequence would be a decline in new lines of credit (or loan commitments) extended by banks. Because companies use lines of credit from banks extensively to back up commercial paper issues, U.S. corporations would suffer a “double whammy” in the sense that they would not only have diminished access to bank loans, but also lesser access to the public debt market. In this way, adverse developments for banks in the market for bank equity capital can spill over into the debt market for other firms. Aggregate investment, employment, and GDP suffer as a result.

This interconnectedness is one of the main reasons why regulatory intervention in one part of the financial system so often generates unpredictable and undesirable consequences in some other part of the financial system. Consider what happened when the Dodd-Frank Act effectively expanded the

legal liability on credit rating agencies for “rating misrepresentation.” The three major U.S. credit rating agencies responded by asking debt issuers to not use their ratings. However, by SEC regulation, these debt issues needed ratings, so the market for these issues essentially froze for a few months. Scores of debt issuers were denied access to much needed funds. Such are the workings of the theory of unintended consequences.

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17 Statement of Martin J. Gruenberg, Vice Chairman FDIC, on Condition of Small Business and Commercial Real Estate Lending In Local Markets, FDIC, <http://www.fdic.gov/news/news/speeches/others/spfeb2610.html> (February 26, 2010).

## V. Conclusion

This paper has surveyed the U.S. financial system from the standpoint of the various types of financing sources available to individuals and businesses and the different types of financing arrangements (contracts) by which capital is raised. The main messages emerging from this discussion are as follows.

**First, the financial system helps economic growth.** This is achieved through the provision of four basic services: facilitating trade; facilitating risk management for various individuals and businesses; mobilizing resources; and processing information about individuals and businesses and allocating resources.

**Second, individuals (consumers) are largely limited to debt financing for raising capital.** Nonetheless, consumers can use a large number of sources to raise this financing, including banks, finance companies, and the federal government.

**Third, businesses regularly access both debt and equity capital, and the appropriate mix of debt and equity, called the “capital structure” decision, is a key strategic choice for any company.** Businesses have three basic sources of capital: private, intermediated sources, and public markets. These three categories exist for both debt and equity capital. In private non-intermediated sources, the firm raises financing outside the public capital market without using a financial intermediary like a bank. Included in this are sources like friends and family, cash generated from the firm’s operating profits, customers, and suppliers. Private intermediated sources include bank loans, borrowing from finance companies and insurance companies, and loans from the parent company. Public market

access includes going directly to the capital market to raise money, such as through a commercial paper or public debt issue.

**Fourth, a rich variety of debt and equity financing sources is available in the United States.** This diversity is crucial for helping our economy to keep its competitive edge because it enables businesses to improve their management of risk and lower their cost of capital, so that both investment and employment increase.

**Finally, the U.S. financial system is highly interconnected.** This interconnectedness means that any changes in one part of the financial system—either through a shock like a crisis or through regulatory intervention—can reverberate throughout the entire system, often in unpredictable ways. As a result, well-intentioned initiatives may produce more harm than good.

This paper has not addressed some questions. What does the future hold for financial services? What effect will the Dodd-Frank Act have on the financial services industry? Will the industry experience an increase or decrease in the diversity of financing sources in the future? How will the regulatory structure evolve? These are interesting questions to ponder, and the answers will not only influence how we deal with global challenges but also determine the magnitude of future economic growth because of the close relationship between financial system development and economic growth, discussed in this paper. The world’s population is growing and is likely to hit 9 billion in this century. This growth will put substantially greater stress on the natural resources needed to support this population—food, water, and energy. Innovations of all sorts will be needed to optimize the



use of limited resources and harness new resources. These innovations will need to be financed. A vibrant and robust financial system in the United States will play a critical role in supporting these innovations and helping them to become commercial successes. The Microsofts, Googles, Genentechs, and Facebooks of tomorrow will rise from the commitment to innovation that will be fueled by the financial services sector in the United States and elsewhere. Financial markets in emerging countries like India, China, and Brazil will continue to grow and challenge the preeminence of U.S. financial markets. Already, two-thirds of the world's equity market capitalization is *outside* the United States. Global competition among financial markets is sure to intensify even further. Thus, business will go to the most transparent and well-regulated markets, and will flow away from markets that are more onerously regulated and involve higher costs of capital. As long as economically sensible regulation supports the transparency and health of the U.S. financial system, the economic growth that will follow the wave of future innovation will be accompanied by growth in the depth and size of the U.S. financial services industry and the economic value provided by it.

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U.S. Chamber of Commerce  
1615 H Street, NW  
Washington, DC 20062-2000  
Tel: 202-463-3162  
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