Part I

Setting the Stage

CHAPTER

1

Functions of the Financial System

OVERVIEW

Having a well-functioning financial system in place that directs funds to their most productive uses is a crucial prerequisite for economic development. The financial system consists of all financial intermediaries and financial markets, and their relations with respect to the flow of funds to and from households, governments, business firms, and foreigners, as well as the financial infrastructure.

The main task of the financial system is to channel funds from sectors that have a surplus to sectors that have a shortage of funds. In doing so, the financial sector performs two main functions: (1) reducing information and transaction costs, and (2) facilitating the trading, diversification, and management of risk. These functions are discussed at length in this chapter.

The importance of financial markets and financial intermediaries differs across Member States of the European Union (EU). An important question is how differences in financial systems affect macroeconomic outcomes. Atomistic markets face a free-rider problem: when an investor acquires information about an investment project and behaves accordingly, he reveals this information to all investors, thereby dissuading other investors from devoting resources towards acquiring information. Financial intermediaries may be better able to deal with this problem than financial markets.

This chapter discusses these and other pros and cons of bank-based and market-based systems. A specific element in this debate is the role of corporate governance, i.e. the set of mechanisms arranging the relationship between stakeholders of a firm, notably holders of equity, and the management of the firm. Investors (the outsiders) cannot perfectly monitor managers acting on their behalf since managers (the insiders) have superior information about the performance of the company. So there is a need for certain mechanisms that prevent the insiders of a company using the profits of the firm for their own benefit rather than returning the money to the outside investors. This chapter outlines the various mechanisms in place.

While there is considerable evidence that financial development up to some point is good for economic growth, there is no clear evidence that one type of financial system is better for growth than another. However, various recent studies suggest that differences in financial systems may influence the type of activity in which a country specialises. The reason is that different forms of economic activity may be more easily provided by one financial system than another.

In the years before the financial crisis, the banking system in industrial countries saw two major changes. First, the traditional banking model, in which the issuing banks hold loans until they are repaid, was increasingly replaced by the 'originate and distribute' banking model. In this model, banks pool loans (like mortgages) and then tranch and sell them via securitisation. Second, this securitisation led to a non-regulated shadow banking system. The shadow banking system refers to institutions that support bank-style maturity transformation – funding of long-term assets (primarily highly rated tranches of asset-backed securities) with short-term debt – outside banks and without access to a central bank liquidity backstop.

Finally, the chapter discusses the 'law and finance' view according to which legal system differences are key in explaining international differences in financial structure. According to this approach, distinguishing countries by the efficiency of national legal systems in supporting financial transactions is more useful than distinguishing countries by whether they have bank-based or market-based financial systems.

LEARNING OBJECTIVES

After you have studied this chapter, you should be able to:

- explain the main functions of a financial system
- differentiate between the roles of financial markets and financial intermediaries
- explain why financial development may stimulate economic growth and why this relationship may become negative
- explain why government regulation and supervision of the financial system is needed
- describe the advantages and disadvantages of bank-based and market-based financial systems
- explain the various corporate governance mechanisms
- describe recent changes in the banking system of several industrial countries
- explain the 'law and finance' view.

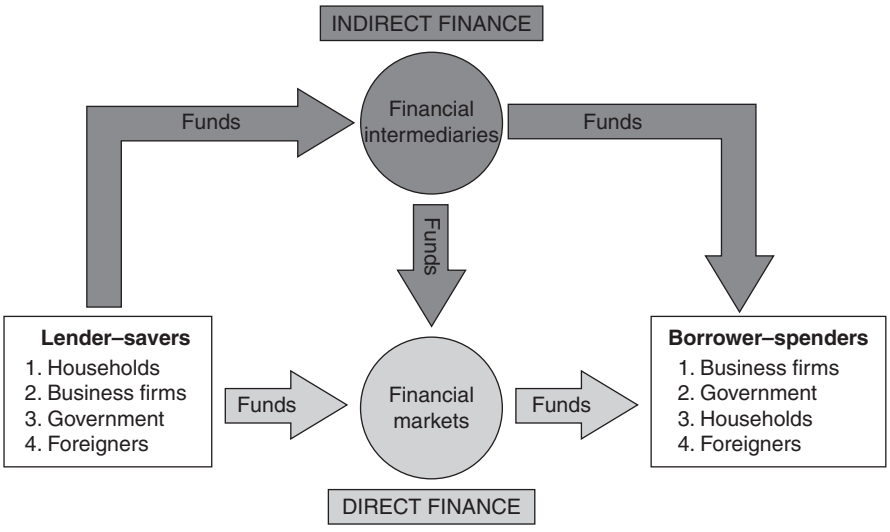

Figure 1.1 Working of the financial system
Source: Mishkin (2006)

1.1 Functions of a financial system

The financial system

This section explains why financial development matters for economic welfare. To understand the importance of financial development, the essentials of a country's *financial system* will first be outlined. The financial system encompasses all financial intermediaries and financial markets, and their relations with respect to the flow of funds to and from households, governments, business firms, and foreigners, as well as the financial infrastructure. *Financial infrastructure* is the set of institutions that enables effective operation of financial intermediaries and financial markets, including such elements as payment systems, credit information bureaus, and collateral registries.

The main task of the financial system is to channel funds from sectors that have a surplus to sectors that have a shortage of funds. Figure 1.1 offers a schematic diagram explaining the working of the financial system.

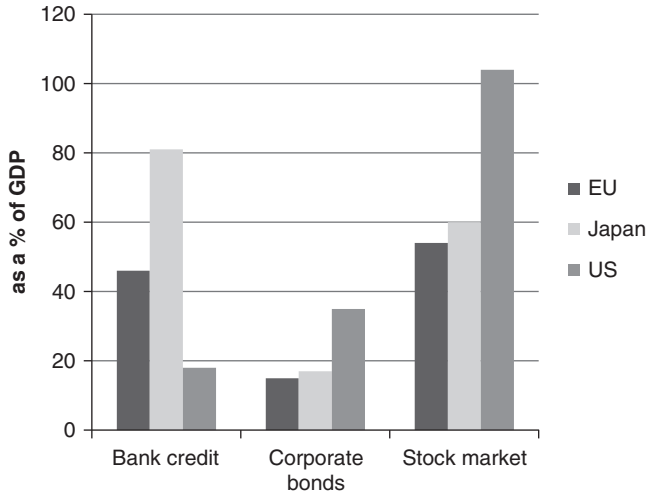

Figure 1.2 Bank credit, corporate bonds and stock market capitalisation in the EU, US and Japan, 2011 (% of GDP)
Source: Authors' calculations based on Bijlsma and Zwart (2013)

Sectors that have saved and are lending funds are on the left, and those that must borrow to finance their spending are on the right. *Direct finance* occurs if a sector in need of funds borrows from another sector via a financial market. A *financial market* is a market where participants issue and trade securities. This direct finance route is shown at the bottom of Figure 1.1. With *indirect finance*, a financial intermediary obtains funds from savers and uses these savings to make loans to a sector in need of finance. *Financial intermediaries* are coalitions of agents that combine to provide financial services, such as banks, insurance companies, finance companies, mutual funds, pension funds, etc. (Levine, 1997). This indirect finance route is shown at the top of Figure 1.1. In most countries, indirect finance is the main route for moving funds from lenders to borrowers. These countries have a *bank-based system*, while countries that rely more on financial markets have a *market-based system*.

Figure 1.2 shows the importance of bank credit, bond, and equity finance in the EU, Japan, and the United States in 2011 as a share of GDP. Clearly, in the EU banks are more important as a source of finance for non-financial corporations than in the US, but in Japan bank credit to non-financial firms is higher than in the EU. Stock market capitalisation and corporate bonds as a share of GDP are highest in the US.

The financial system transforms household savings into funds available for investment by firms. However, the importance of financial markets and financial intermediaries differs across Member States of the EU, as will be explained in some detail in this chapter. Also, the types of assets held by households differ among the various European countries. Despite all these differences, there is one feature that is common to all the financial systems in these countries and that is the importance of *internal finance*. Most investments by firms in industrial countries are financed through retained earnings, regardless of the relative importance of financial markets and intermediaries (Allen and Gale, 2000).

The past 30 years have seen revolutionary changes in the structure of the world's financial markets and institutions. Some financial markets have become obsolete, while new ones have emerged. Similarly, some financial institutions have gone bankrupt, while new entrants have emerged. However, the functions of the financial system have been more stable than the markets and institutions used to accomplish these functions (Merton, 1995). This first chapter of the book discusses at length the functions of the financial system. The later chapters discuss the changes in the financial markets and financial institutions in Europe.

At times, major disruptions occur in the financial system which are characterised by sharp declines in asset prices and the failure of financial intermediaries. Such financial crises have been a feature of capitalist economies for hundreds of years. Often they are followed by severe economic downturns. Chapter 2 will discuss financial crises, zooming in on the most recent banking and debt crises which have hit the euro area since 2008.

Having a well-functioning financial system in place that directs funds to their most productive uses is a crucial prerequisite for economic development. If sectors with surplus funds cannot channel their money to sectors with good investment opportunities, many productive investments will never take place. Indeed, cross-country, case-study, industry- and firm-level analyses suggest that the functioning of financial systems is vitally linked to economic growth. Specifically, countries with larger banks and more active stock markets grow faster over subsequent decades, even after controlling for many other factors underlying economic growth (Levine, 2005). Box 1.1 discusses some studies coming to this conclusion, as well as some recent studies showing that above some threshold financial development no longer has a positive impact on growth.

Box 1.1 Financial development and economic growth

King and Levine (1993a, 1993b) were among the first to argue that financial development is related to economic development. King and Levine (1993b) suggest that current financial depth can predict economic growth over the subsequent 10–30 years and conclude that 'better financial systems stimulate faster productivity growth and growth in per capita output by funnelling society's resources to promising productivity-enhancing endeavours' (King and Levine, 1993b, p. 540).

However, Papaioannou (2008) points out that evidence based on cross-country cross-sectional regressions faces various problems in establishing causality. First, it is almost impossible to account for all possible factors that may foster growth. Second, the effect of financial development may be heterogeneous across countries. Third, there can be reverse causation: financial development can be both the cause and the consequence of economic growth. Finally, the indicators of financial development as generally used in these studies (such as private domestic credit to GDP and market capitalisation as a share of GDP) lack a sound theoretical basis.

Rajan and Zingales (1998) argue that financial development should be most relevant to industries that depend on external finance and that these industries should grow fastest in countries with well-developed financial systems. They therefore focus on 36 individual industries in 41 countries and analyse the influence of the interaction between the external financial dependence of those industries and the financial development of the countries on the growth rates of those industries in the different countries over the period 1980 to 1990. Using various measures of financial development of a country (the ratio of market capitalisation to GDP, domestic credit to the private sector over GDP, and accounting standards), they report a strong relation between economic growth in different industries and countries and the interaction of financial development of countries and the financial dependence of industries. Rajan and Zingales (1998, p. 584) conclude that their results 'suggest that financial development has a substantial supportive influence on the rate of economic growth and this works, at least partly, by reducing the cost of external finance to financially dependent firms'.

Other important studies include Levine *et al.* (2000), who address the endogeneity problems inherent in finance and growth regressions, and the papers in Demirgüç-Kunt and Levine (2001) that use a number of different econometric techniques on datasets ranging from micro-level firm data to international comparative studies. All these studies, and many others, report evidence that financial development stimulates economic growth (Levine, 2005; Papaioannou, 2008).

However, some recent studies come to different conclusions. For instance, Arcand *et al.* (2012) report that at intermediate levels of financial depth, there is a positive relationship between the size of the financial system and economic growth, but at high levels of

Box 1.1 (cont.)

financial depth, more finance is associated with less growth. In fact, the marginal effect of financial depth on output growth becomes negative when credit to the private sector reaches 80–100 per cent of GDP. Likewise, Cecchetti and Kharroubi (2012) report that financial development has a non-linear impact on aggregate productivity growth. Based on a sample of developed and emerging economies, they show that the level of financial development is good only up to a point, after which it becomes a drag on growth.

There are several possible reasons why large financial systems may have a negative effect on economic growth. First, countries with a large financial sector are more prone to severe financial crises which are followed by financial recession or even depression (see Chapter 2). Second, a large financial sector may lead to misallocation of resources as the financial sector may 'steal' talents from the productive sectors of the economy and therefore be inefficient from society's point of view.

Main functions

Let us focus on the two main *functions of the financial system*, i.e. (1) reducing information and transaction costs, and (2) facilitating the trading, diversification, and management of risk, to explain why the financial sector may stimulate capital formation and/or technological innovation, two of the driving forces of economic growth.

Reducing information asymmetry and transaction costs

The financial system helps overcome an information asymmetry between borrowers and lenders. An information asymmetry can occur ex ante and ex post, i.e. before and after a financial contract has been agreed upon. The ex-ante information asymmetry arises because borrowers generally know more about their investment projects than lenders. Borrowers most eager to engage in a transaction are the most likely ones to produce an undesirable outcome for the lender (*adverse selection)*. It is difficult and costly to evaluate potential borrowers. Individual savers may not have the time, capacity, or means to collect and process information on a wide array of potential borrowers. So high information costs may keep funds from flowing to their highest productive use. Financial intermediaries may reduce the costs of acquiring and processing information and thereby improve resource allocation (see Chapters 9, 10, and 11). Without intermediaries, each investor would face the large fixed cost associated

with evaluating investment projects. Also, financial markets may reduce information costs (see Chapter 5). Economising on information-acquisition costs facilitates the gathering of information about investment opportunities and thereby improves resource allocation. Besides identifying the best investments, financial intermediaries may boost the rate of technological innovation by identifying those entrepreneurs with the best chances of successfully initiating new goods and production processes (Levine, 2005).

The information asymmetry problem occurs ex post when borrowers, but not investors, can observe actual behaviour. Once a loan has been granted, there is a risk that the borrower will engage in activities that are undesirable from the perspective of the lender (*moral hazard)*. Financial markets and intermediaries also mitigate the information acquisition and enforcement costs of monitoring borrowers. For example, equity holders and banks will create financial arrangements that compel managers to manage the firm in their best interest (see section 1.2 for more details).

Furthermore, the financial system reduces the time and money spent in carrying out financial transactions (*transaction costs*). Financial intermediaries can reduce transaction costs as they have developed expertise and can take advantage of economies of scale and scope. A good example of how the financial system reduces transaction costs is *pooling*, i.e. the (costly) process of agglomerating capital from disparate savers for investment. By pooling the funds of various small savers, large investment projects can be financed. Without pooling, savers would have to buy and sell entire firms (Levine, 1997). Mobilising savings involves (1) overcoming the transaction costs associated with collecting savings from different individuals, and (2) overcoming the informational asymmetries associated with making savers feel comfortable in relinquishing control of their savings (Levine, 2005).

By reducing information and transaction costs, financial systems lower the cost of channelling funds between borrowers and lenders, which frees up resources for other uses, such as investment and innovation. In addition, financial intermediation affects capital accumulation by allocating funds to their most productive uses. However, higher returns on investment ambiguously affect saving rates, as the income and substitution effects work in opposite directions. A higher return makes saving more attractive (substitution effect), but fewer savings are needed to receive the same returns (income effect). Similarly, lower risk – to which we will turn below – also ambiguously affects savings rates. Thus, the improved