Financial Structure and Monetary Transmission in Europe: A Cross-Country Study

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1 FINANCIAL STRUCTURE: THEORIES AND STYLIZED FACTS FOR SIX EU COUNTRIES

1.1 Introduction

Despite the fact that wide variation in the structures of financial systems across countries has existed for decades, it is only recently that the relative efficiency of different financial systems has become a research topic of importance (see, e.g. Edwards and Fischer, 1994, Allen and Gale, 1995, and Boot and Thakor, 1995a and 1995b). The literature of comparative financial systems focuses especially on the relative size and power of the banking sector and investigates in particular two extreme cases: bank-oriented (read: Germany and Japan) versus market-oriented financial systems (read: United Kingdom (UK) and United States (US)). Financial structure, also called financial superstructure, refers to the complete organisation of the financial system. It is the interdependent universe of financial markets, financial institutions, and financial instruments of all sorts in a given place at a given time (Goldsmith, 1987). A comparative analysis of financial structures across countries is a difficult task, because a comprehensive and widely accepted theory of financial structure is lacking. Insights in financial structure are, however, of crucial importance, because it has a large potential impact on economic efficiency and the transmission process of monetary policy.

This chapter aims at providing an extensive survey of theories and stylized facts of one of the most important elements of financial structure, namely credit to the private sector (firms and households).

The survey focuses on two aspects in particular. Firstly, in contrast with the existing literature which primarily compares two extreme cases, the present survey broadens the perspective by investigating the financial structure in six European countries. Besides Germany and the UK, commonly viewed as representative European countries with a bank-oriented and market-oriented financial system, respectively, France and Italy are also considered. These four countries are the most important European Union (EU) member states in terms of the size of their economies. In addition Belgium and the Netherlands, two small and open economies of the EU, are taken into account. The focus on European countries is, apart from intellectual curiosity, especially important within the context of Stage Three of EMU. Differences in financial structure across EMU-countries can hamper the implementation of a common European monetary policy. Secondly, the survey focuses on a broad set of theoretical issues regarding credit to the private sector, instead of using a single formal theoretical framework. Five different theories have been identified as relevant for explaining credit to the private sector. In addition of the theoretical exposition of financial structure, a survey of relevant stylized facts is given.
The remainder of this chapter proceeds as follows. Section 1.2 analyses financial structure from the perspective of financial intermediaries (theory of financial intermediation). Section 1.3 takes the distinction between regulators and regulatees as a starting point (theory of regulation). In Section 1.4 the capital structure of firms is described (theory of capital structure). Section 1.5 documents the agency relationships between equityholders and managers and between equityholders and debtholders (agency theory). In Section 1.6 one of the key characteristics of a credit contract, its maturity, is examined (theory of debt maturity). In all of these sections the theoretical issues involved are complemented by a summary of relevant stylized facts of financial structure. Furthermore, a cross-country comparison is made. Finally, Section 1.7 provides a synthesis and summary of the findings of the former sections.

1.2 Financial intermediation and financial structure

1.2.1 Introductory note on the existence of indirect credit market

Credit to the private sector can be divided into credit provided by financial intermediaries (indirect credit), such as banks and other financial institutions, and through the money and capital markets (direct credit). Table 1.1 shows the relative importance of the direct and indirect credit market for the private sector, based on stock figures. The indirect credit market, which involves the activities of financial intermediaries, is many times more important than the direct credit market. Marketable securities like stocks and bonds traded at the direct credit market account for only a small fraction of total borrowing by the private sector. Even in the UK the indirect credit market clearly dominates the direct credit market. A finding that counters the conventional view, as mentioned in the introduction, that the UK has a direct market-oriented system of finance. The question which arises from Table 1.1 is why the indirect credit market plays such a dominant role compared to the direct credit market and why it exists at all?

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<tr>
<td>Netherlands</td>
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<td>96</td>
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The theoretical reasons for the existence of an indirect credit market mostly have a microeconomic foundation which is related to costs and imperfections of the direct credit market. Financial intermediation occurs if three conditions are met (De Lange, 1992, and Kroes, 1996). Firstly, imperfections exist in the direct market. Secondly, a technology exists to overcome, totally or partially, these imperfections. Thirdly, the technology possesses economies of scale or scope. Economies of scale mean a decrease in costs as the scale of transactions increase, while economies of scope imply that undertaking one activity reduces the costs of undertaking another. Economies of scope are likely to be important whenever a significant fixed cost can be shared across products. Although economies of scale and scope are a precondition for the existence of financial intermediation, the question whether and to what extent the cost structure of financial intermediaries exhibits economies of scale and scope is a topic of ongoing debate. The characteristics of market imperfections and technology determine the type of financial intermediation. In the theoretical literature a large number of rival models and approaches exist which have not yet converged to a coherent, unified and generally accepted theory of financial intermediation. This reflects the difficult nature of the topic as well as the different objectives pursued in different studies. Some authors emphasize the asset side of the balance sheet of the financial intermediary (Leland and Pyle, 1977, and Diamond, 1984), while others focus on the liability side (Diamond and Dybvig, 1983), or the two-sided nature of the balance sheet (Pyle, 1971, and Mangoletsis, 1975). Here, the focus is on two types of imperfections and their impact on financial structure. One involves transactions costs and the other asymmetric information.

1.2.2 Transactions costs and asymmetric information

1.2.2.1 Transactions costs and their impact on financial structure

Financial intermediaries exist because of their expertise, among other factors, in minimizing transactions costs (Benston and Smith, 1976). To keep transactions costs low, financial assets and liabilities of ultimate borrowers and lenders are transformed on four grounds: scale, risk, maturity, and place. Transactions costs can be subdivided into exchange costs, contract costs, 1


3 See Baltensperger (1980) and Santomero (1984) for this distinction. Each of the three views finds its roots in the seminal literature on financial intermediation by Gurley and Shaw (1955 and 1960).
and information costs (Scholtens, 1993). All costs associated with the purchase of goods and services are called exchange costs. The exchange process requires the intermediation of capital (currency) and labour, or of financial institutions. Financial intermediaries minimize exchange costs by providing depositors with checking accounts that enable them to make payments. Demand deposits are far more convenient and have smaller risks in the exchange process - less danger of loss, theft, and misappropriation - than currency itself. In addition, depositors can earn interest on checking and savings accounts and still have a liquid store of value that can be converted into goods and services whenever necessary. Contract costs involve the costs of writing a contract: administration costs, (re)negotiation costs, bonding costs, etc. Information costs refer to the costs of generating all information necessary for financial transactions. They include the costs of searching, administrating, monitoring, screening, and verifying.

1.2.2.2 Asymmetric information and its impact on financial structure

Asymmetric information occurs if different agents do not have identical information. It creates problems in the financial system in two ways: before the financial transaction occurs (ex ante asymmetric information) and after the financial transaction is entered into (ex post asymmetric information). Adverse selection is the problem created by asymmetric information before the transaction occurs. The classic example of adverse selection problems and its impact on market efficiency is the 'lemons' problem pointed out by Akerlof (1970). In financial markets adverse selection occurs when agents who tend to produce an undesirable (adverse) outcome from the intermediary’s point of view are the ones who most likely would be selected to accept the financial contract. Since adverse selection raises the possibility of loans to bad borrowers, lenders may decide not to make any loans at all, not even to good borrowers. Moral hazard is the problem created by asymmetric information after the transaction occurs. It means that the lender is subjected to the hazard that the borrower has incentives to engage in activities that are undesirable from the lender’s point of view, because these activities make it less likely that the loan will be repaid. Since moral hazard lowers the probability that the loan will be repaid, lenders again may decide not to make any loan. Thus, both adverse selection and moral hazard are reasons for lenders to ration credit.

In the pioneering model of Leland and Pyle (1977), extended and modified by many authors (see for example, Diamond, 1984, Williamson, 1986, and Boyd and Prescott, 1986), financial intermediaries are viewed as a natural response to the existence of asymmetric information. A financial intermediary becomes an expert in the production of information about firms and households so that it can sort out superiorly good credit risks from bad ones. An important element in the ability of the financial intermediary to earn a profit from the gathering, sorting, and monitoring of information is avoiding the free-rider problem – the ability of agents to share
in the benefits of the actions of someone else without incurring the costs involved - by primarily making private loans, rather than by purchasing securities that are traded in the open market. Another problem related to adverse selection, called the winner's curse problem, arises when the different financial intermediaries cannot observe the outcomes of the other intermediaries' monitoring activities. In this case each intermediary must fear that his clients were just the ones that his competitors rejected as bad credit risks. As a consequence the financial intermediary should be more conservative and charge a higher risk premium. As the winner's curse problem is more severe if there are more financial intermediaries, there might be an element of natural monopoly in the intermediated credit market (Broecker, 1990).

Financial intermediation is not the only way to counteract problems created by information asymmetries. Another way is the production and sale of private information to eliminate asymmetric information. Examples of information gathering agencies are rating agencies, credit bureaus, financial newsletters, etc. The private production and sale of information does not, however, completely solve the adverse selection problem in the direct financial market because of free-rider behaviour. Moreover, this kind of information is less available with respect to small firms and households.

1.2.2.3 Stylized facts of transactions costs and asymmetric information

Although transactions costs and asymmetric information cannot be observed directly, an increase in transactions costs and information asymmetries leads to an increase in the difference between the loan rate charged by the financial intermediary and the deposit rate paid. Thus, a rough proxy for direct credit market imperfections is the loan-deposit spread. A positive spread between the loan and deposit rate is, as already pointed out by Pyle (1971), one of the factors which make financial intermediation more likely. Of course this spread is also determined by other factors, like a term premium, the degree of competition and the payments services of the financial system. In the long run the loan rate must exceed the deposit rate by a fraction at least large enough to compensate the bank for defaulting loans. A distinction is made between the corporate and household market, as the two sectors probably differ in the extent of imperfections. Figure 1.1 depicts the loan-deposit spread for the corporate and household sector. The loan rate is for firms banks' prime lending rate or a comparable interest rate and for households a mortgage loan rate. The deposit rate for firms is a three-month time deposit rate and for households a savings deposit rate. The loan-deposit spread is lower for firms than for households, perhaps implying that for corporate clients transactions costs and information asymmetries form less a problem than for households. Firms operate at a large scale and can easily provide information to financial intermediaries by showing their balance sheets and income accounts.
Figure 1.1 Loan-deposit spread

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<tr>
<th>Country</th>
<th>Corporate spread in %</th>
<th>Household spread in %</th>
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<td>France</td>
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<td>Belgium</td>
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<td>Netherlands</td>
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Source: OECD, Financial Statistics Monthly
Table 1.2 Stockmarket: domestically listed companies and capitalisation
Ultimo 1993

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<tr>
<th></th>
<th>Germany</th>
<th>France</th>
<th>Italy</th>
<th>United Kingdom</th>
<th>Belgium</th>
<th>Netherlands</th>
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</thead>
<tbody>
<tr>
<td>Domestically listed companies</td>
<td>664</td>
<td>726</td>
<td>242</td>
<td>1927</td>
<td>165</td>
<td>239</td>
</tr>
<tr>
<td>Capitalisation (in % GDP)</td>
<td>25</td>
<td>38</td>
<td>15</td>
<td>132</td>
<td>39</td>
<td>62</td>
</tr>
</tbody>
</table>


Regarding differences across countries the figures suggest that the corporate credit market in the UK and, to a less extent, in the Netherlands have relatively few imperfections. This result can partially be explained by the amount of public information about firms that is available, as revealed in Table 1.2. The UK stock market has a high capitalisation (total market value) and a large number of domestically listed companies, suggesting that relatively much accounting information about firms is available to the public. On the other hand, in Italy and Germany relatively few companies are publicly listed and the accompanying accounting information is limited.

1.2.3 Banks versus other financial intermediaries

1.2.3.1 Background banks vis-à-vis other financial intermediaries

In contrast to the theoretical literature about intermediated versus direct credit markets, the literature focusing on the differences between banks and other financial intermediaries is less overwhelmingly large. The specialness of banks compared to other financial intermediaries traditionally has been regarded as deriving mainly from the liabilities side of the balance sheet (money), i.e. banks’ ability to issue means of payments or short-term deposits. Looking at the asset side of the balance sheet (credit) there are, *prima facie*, less clear reasons for a dominant role for banks over other financial intermediaries. Bank deposits are the most common means of payments in an economy and as a rule bank depositors are at the same time borrowers. The complementary character of deposit-taking and lending can lead to a cost advantage for the bank in loan-making (transactions costs) and monitoring (asymmetric information) (Fama, 1985). The economies of information arise because a client’s deposit history, information that is not available to others, may inform banks about the credit risk of their client. Apart from the above mentioned advantages of banks, the regulatory environment is an important factor in the theory.

*See Goodhart (1989, Section 5.3) for an overview of differences and similarities between banks and other financial intermediaries.*
of financial intermediation in general and for the uniqueness of banks in specific. The regulation of the banking industry will be described in more detail in Section 1.3.

1.2.3.2 Stylized facts of banks vis-à-vis other financial intermediaries

The share of bank loans in the total loans to the private sector is shown in Table 1.3. In all countries, with the exception of the Netherlands, around 90% of all loans are supplied by banks. In the Netherlands, other financial institutions such as life insurance companies and pension funds have a share of around 30%. The proportion of bank loans in total supplied loans is almost stable over time. In France and the UK the share of bank loans is slightly decreasing, while Germany, Belgium and the Netherlands show a small increase.

Given the pivotal role of banks in granting credit one may ask who the main players are within the banking industry. Figure 1.2 sheds some light on this question. It depicts the concentration of the banking industry based on the value of total assets in 1995. The concentration ratio varies across countries. Bank concentration is high in the Netherlands and Belgium, low in Germany, and takes an intermediate position in the other countries. The results show that geographically small countries tend towards a high concentration and vice versa. This suggests that banks need a particular minimum size, because of economies of scale.

The specialness of banks has been tested empirically by investigating (excess) stock returns surrounding firms’ announcements of loan agreements. Loan agreements which become publicly available may convey information to stock market participants, because lending decisions are partially made on the basis of information only available to the lending institutions. The

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<td>Banks</td>
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<tr>
<td>Germany</td>
<td>84</td>
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<td>France b)</td>
<td>88</td>
<td>12</td>
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<td>Italy</td>
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<td>United Kingdom c)</td>
<td>95</td>
<td>5</td>
<td>92</td>
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<tr>
<td>Belgium</td>
<td>84</td>
<td>16</td>
<td>90</td>
<td>10</td>
<td></td>
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<tr>
<td>Netherlands</td>
<td>66</td>
<td>34</td>
<td>73</td>
<td>27</td>
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Source: Borio (1996); a) Italy: 1989, Belgium: 1982; b) specialised credit institutions classified as banks; c) building societies classified as banks.
Figure 1.2 Concentration banking sector, 1995
In % total assets

Germany

- Deutsche Bank AG (8.4%)
- Dresdner Bank AG (6.1%)
- Westdeutsche Landesbank Girozentrale WestLB (5.3%)
- Commerzbank AG (5.1%)
- Bayerische Vereinsbank NV (4.5%)
- Other banks (70.6%)

France

- Crédit Agricole CA AGOR (9.7%)
- Caisse Nationale de Crédit Agricole CNCA (8.3%)
- Société Générale (7.5%)
- Banque Nationale de Paris BNP (7.1%)
- Crédit Lyonnais (6.6%)
- Other banks (50.8%)

Italy

- Instituto Bancario San Paolo di Torino SpA (10.9%)
- Banca di Roma (6.6%)
- Banca Nazionale del Lavoro SpA-BNL (6.5%)
- Cassa di Risparmio delle Province Lombardie SpA (5.8%)
- Banca Commerciale Italiana SpA, COMIT (5.5%)
- Other banks (54.7%)

United Kingdom

- National Westminster Bank Plc (13.5%)
- Barclays de Zoete Wedd Holdings Limited BZW (8.7%)
- Midland Bank Plc (8.7%)
- Abbey National Plc (7.7%)
- Salomon Brothers International Ltd (4.6%)
- Other banks (58.6%)

Belgium

- Generale Bank (19.6%)
- Bank Brussel Lambert BBL (17.2%)
- Gemeentekrediet van België (15.5%)
- ASLK Bank NV (11.6%)
- BACOB NV (7.0%)
- Other banks (29.1%)

Netherlands

- ABN-AMRO Holding NV (38.8%)
- Rabobank Nederland (20.8%)
- ING Bank / Internationale Nederlanden Bank NV (14.2%)
- Bank Nederlandse Gemeenten NV BNG (7.2%)
- Fortis Bank Nederland NV (2.2%)
- Other banks (16.5%)

Source: IBCA (1996)
empirical findings for the US suggest that firms experience excess stock returns when they announce bank loans (James, 1987), renewals (Lummer and McConnell, 1989), or loan agreements regardless of the nature of the lending institution (bank or non-bank) (Preece and Mullineaux, 1994).

1.2.4 Banking relationship

1.2.4.1 Background banking relationship

Banking relationship evolve when incumbent lenders and borrowers share information not available to other potential lenders (Mayer, 1988, Hellwig, 1991). The sharing of information enables lenders to provide finance to the borrower even during times of financial difficulty, in return for which the borrower undertakes to remain with the lender and to pay a premium or discount during normal times. In the commitment banking paradigm, banks tend to be the main sources of counter-cyclical finance. On the other hand, costs of banking relationship can offset the advantages. A possible cost of a bank-firm relationship, apart from a commitment premium, is the bank's imposition of an excessively conservative investment policy on firms to protect bank's debt claims (Davis, 1994). In addition to interaction over time, relationships can be built through interaction over multiple products (economies of scope). The bank can spread any fixed costs of producing information about the client over multiple products whereby the precision of the lender's information about the borrower increases. Another dimension of banking relationship arises when the bank has an equity interest in the firm. In this case, both borrower and lender are sharing not only information but also the combined risk of the two institutions.

1.2.4.2 Stylized facts banking relationship

The classic example of a close, strong and durable relationship between banks and firms is Germany. In Germany banks are of major importance as shareholders, as revealed in Table 1.4. The share of outstanding equity in 1993 held by German banks is 14%. In addition to German banks' own equity votes the German proxy vote system enables banks to act as voting agents on behalf of individual shareholders at shareholders' meetings. In Germany, banks also hold seats on supervisory boards of firms. Such direct involvement has been rare in the other countries considered. Edwards and Fischer (1994), though, argue that the German bank monitoring is of

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5 Several authors model the relation between the length of the bank-borrower relationship and the pricing of loans. Some model a positive relationship - lower interest rates with relationship lending - (Diamond, 1989, Petersen and Rajan, 1994, and Boot and Thakor, 1994); others a negative relationship (Sharpe, 1990).

6 At the moment this 'Depotstimmrecht' is under pressure and will be abolished in the near future.
limited importance. The (big) banks' representation on supervisory boards does not lead to a fully dominant position of banks. The three major banks and some of the other commercial banks in Germany, which are engaged in relationship banking, constitute a relatively small part of the banking system. The degree of monitoring and control by the supervisory board seems to be very limited in good times, while it may be more important when German firms come under stress (OECD, 1995b). Gelauff and Den Broeder (1996) argue, based on evidence on bank voting power and representation on supervisory boards, that in Germany banks play an important role but do not control the corporate sector. They also conclude that in the Netherlands the role of banks as shareholders is clearly more limited.

Although Italy does not have a tradition of house bank relations like Germany, shareholdings by banks are sizable (see Table 1.4). An interview among Italian firms in one specific local market, representative for other areas in Italy, shows that less than 20% of all firms has a relationship with just a single bank (Bisoni and Landi, 1994). Especially, local Italian banks play a pivotal role in banking finance. More than 97% of the Italian firms interviewed has a relationship with one or more local banks. Perhaps due to this multiple relationships phenomenon, Italian banks rarely participate in the formation of firms' development plans. In recent years, however, privatisation has been conducted with the assumption that Italian banks should take a more active role in corporate governance and the provision of long-term finance.

For the US, Petersen and Rajan (1994) find empirical evidence that relationship lending is valuable for small businesses and that it operates more through quantities (availability of financing increases) rather than prices (reduction of interest rates). By contrast, Berger and Udell (1995) find price effects for the US. Borrowers with longer banking relationships pay lower interest rates and are less likely to pledge collateral. An interview study among Dutch banks (Swank, 1994) shows that banks are reluctant to set a different loan rate for each individual client (no price effects). All Dutch banks interviewed, however, apply existing credit or deposit relations as a (supplementary) criterion for deciding whether to grant or deny a loan request (quantity effects). For Germany, Gorton and Schmid (1996) empirically investigated for the years 1974 and 1985 the influence of banks on the performance of German firms taking account

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<tr>
<td>In % of total outstanding corporate equity</td>
<td>14</td>
<td>3</td>
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of the bank’s shareholdings, the extent of the bank’s proxy voting rights, and the ownership structure of the firm’s equity. They find evidence that banks improved the performance of German firms to the extent that they held the firm’s equity in 1974, but not in 1985. Their results suggest that the influence of German banks on firms’ performance has diminished.

1.3 Regulation and financial structure

1.3.1 Background regulation

Regulation consists of governmental actions to control decisions of private agents to prevent decision-making that would take inadequate account of public interests. In general, four categories of economic arguments are given to justify regulation: the presence of monopoly power, accounting for negative external effects, compensating for inadequate information, and other special-interest arguments such as controlling excessive competition by price and entry regulation. The ultimate objectives (public interests) of bank regulation is to preserve the safety and soundness of the financial system and to provide (small) investor protection by avoiding the negative consequences of bank runs and panics (systemic risks). In addition, the money creating role of banks and their unique role in the payment system has given bank regulation a monetary policy dimension. Three aspects of banking enhance the potential instability of the financial system. First, banks hold liquid liabilities while its assets are less liquid. Secondly, they hold assets of uncertain value while banks guarantee the value of its liabilities. Thirdly, banks are confronted with asymmetric information in the loan and deposit market. Regulation has its side effects, among them the potential introduction of new inefficiencies. The main side effects of bank regulation are the inducement of moral hazard and the possibility of ‘regulatory capture’ in favour of the incumbent regulated financial institutions. The capture theory shows that regulation may benefit incumbent financial institutions at the expense of their clients and of new entrants (Stigler, 1971). At the start of the 1980s an alternative theory of regulation developed, called the theory of regulatory dialectic (Kane, 1981 and 1983). The regulatees experience the regulatory rules as undesirable and try to avoid these rules. The effects of regulation could be mitigated by innovative behaviour of financial intermediaries, for example by introducing new products, or by entering unregulated markets. Regulatory institutions react to this behaviour by re-regulation. The theory of regulatory dialectic, therefore, implies a continuing sequence of regulation, avoidance, and re-regulation.

References on more details about regulation and financial intermediation are for example, Goodhart (1989, Chapter IX), Spierings (1990), Dewatripont and Tirole (1994), and Fase (1995a).
Two basic types of bank regulation can be distinguished: structural regulation and conduct regulation. Structural regulation directly affects the structure of the banking industry and includes instruments like the functional separation of institutions, entry requirements (such as minimum capital requirements), deposit insurance, and the existence of a lender of last resort. Conduct regulation affects the conduct behaviour of banks and includes instruments like prudential rules, rules on participations in non-banking firms, rules relating to information disclosures, credit ceilings, limitations on branching, and the determination of fees, commissions and interest rates.

1.3.2 Brief history of bank regulation

This section contains a brief history, starting in the 1980s, of bank regulation in the six countries considered (see also Baltensperger and Dermine, 1987, Gual and Neven, 1993, Borio and Filosa, 1995, and Vesala, 1995). In the 1980s many restrictions on structure and conduct of banks were abolished. On the other hand, prudential bank regulation has strengthened due to international harmonization of prudential regulations, in particular regarding the capital requirements of the Bank for International Settlements and of the European Commission (EC).

At the beginning of the 1980s Italy, France, and Belgium had strongly regulated bank markets with severe structure and conduct restrictions. Italy had extensive restrictions with respect to foreign entry, ownership, branching, and specialized financial institutions. Interest rates and service fees were regulated and there were direct regulations on banks' assets and liabilities. Compared with the other countries considered here, Italy has been slow in deregulating with some structural regulations still in force. France had a system of specialized institutions facing particular restrictions. France relaxed all structural rules and conduct regulations significantly. Most importantly, all existing controls on credit volumes and time deposit rates were removed in 1986. Belgium had important functional separations and restrictions on specialized institutions, but liberal entry conditions. However, recently Belgium has lifted almost all structural restrictions, but slightly strengthened the conduct rules. For example, legal provisions for imposing credit ceilings are still in place.

At the other side of the European regulatory spectrum of the 1980s are Germany, the UK, and the Netherlands. In these three countries the banking industry has traditionally been only slightly regulated compared with other countries. In Germany the restrictions to structure and conduct have always been very limited. The main restrictions were related to the separation of banking and insurance. The UK had only restrictions on the activities of building societies. In the Netherlands the functional separation between commercial and investment banking and some
restrictions in relation to fees and commissions and limited investment requirements were abolished in the early 1980s.

Of importance for the European regulatory system are the EC's directives, especially the EC's Second Banking Directive, approved in December 1989 by the European Parliament. The EC's directives try to create a European level playing field by harmonizing the bank regulation among the member states. The directives combine the adoption of a single banking license with the principles of mutual recognition and home country control. Mutual recognition means that all banks, domestic and foreign, operating in a particular country have to obey the same regulatory prudential rules imposed by the national supervisor. One can speak of home country control if the supervision is done by the home country instead of the host country. Hence, the control of the parent bank applies to the entire worldwide consolidated bank, branches and subsidiaries included. The freedom of European financial institutions to select its favourite regulatory regime in any of the 15 EU countries to provide financial services throughout the EU induces each national regulatory authority to carefully assess the competitive impact of its regulatory structure. The approach deliberately encourages national regulatory authorities to compete - subject to basic safety and soundness constraints - in providing the most efficient regulatory environment. The implemented EC standards have introduced conduct and structural rules which lie between the regulation rules in Germany and the Netherlands. All countries are gradual converging towards this point.

1.4 Capital structure and financial structure

1.4.1 Theory of capital structure

1.4.1.1 Introduction

The central focus of the theory of capital structure, also called the theory of corporate finance, is the way firms finance their activities externally, i.e. the relative amounts of debt, equity, and other liabilities of firms. Apart from external finance, firms finance their activities by internal resources, for example retained earnings. Although this section focuses on the capital structure of firms, one can apply the theoretical results about internal and external finance straightforwardly to households by regarding them as small firms. Modigliani and Miller (1958) show that in a frictionless world with full information and complete markets, a firm's capital structure can not affect the firm's value. This proposition, called the irrelevance theorem of Modigliani and Miller, implies that real economic decisions are independent of capital structure. Many authors have relaxed some of the Modigliani-Miller assumptions and developed a theory of optimal capital structure. Three theories are distinguished. Theories based on tax
considerations, on asymmetric information, and on strategic interaction between firms and their competitors, customers, and suppliers. Capital structure models based on agency costs are described in more detail in the next section about agency relationships and financial structure.

1.4.1.2 Models based on tax considerations

The irrelevance theorem of Modigliani and Miller changes drastically when the assumption of 'no taxes' is relaxed. When corporate taxes are introduced a tax advantage for debt is created, since interest payments are deductible and profits are not. In this case the optimal capital structure consists of 100% debt (Modigliani and Miller, 1963). In addition to corporate taxes, firms have to consider personal taxes in their decision about capital structure (Miller, 1977, and DeAngelo and Masulis, 1980). Households look at the after-tax return on debt and equity (dividend and capital gain). If for example debt has a relative tax disadvantage households will demand a higher pre-tax return on debt. A firm's preference for debt is mitigated by the effect that an increasing leverage leads to a higher risk of incurring bankruptcy costs, which include the transaction costs of liquidation or reorganization, as well as indirect costs such as profits lost during financial distress and bankruptcy.

1.4.1.3 Models based on asymmetric information

According to the pecking order theory, a firm's preference is to finance its activities internally, followed by low-risk debt, and by equity in last instance. Pioneering work in this field has been done by Myers (1984), and Myers and Majluf (1984). The existence of asymmetric information - shareholders are less informed than firm's insiders about the value of the firm's assets - implies that equity can be over- or undervalued. If equity is underpriced, issuing new shares would benefit new shareholders at the expense of the incumbent shareholders. A firm will refuse to issue shares to finance a project with a non-negative net present value if the project's net present value is smaller than the amount by which the new shares are undervalued, because a net loss results for the incumbent shareholders. This underinvestment can be avoided if the firm can finance the new project by internal funds. If all internal funds have been absorbed it is better for firms to issue debt rather than equity. The undervaluation and the accompanying underinvestment problem is smaller for debt than for equity, because the risk of debt is smaller than that of equity due to the priority claim of debtholders over equityholders. The pecking order theory implies that the market value of the firm's existing shares will fall upon announcement of

---

8 A fifth theory of capital structure (in the short run) is driven by corporate control considerations. It focuses on the effect of capital structure decisions on the structure of voting rights. Common stock carries voting rights while debt does not. Moreover, it relates capital structure to the take-over process (Harris and Raviv, 1988, Stulz, 1988, and Hart, 1995). More extensive surveys of the theory of capital structure are for example, Miller, 1988, Harris and Raviv, 1991, and Cools, 1993).
an equity issue. New projects will tend to be financed mainly from internal sources or the proceeds of low-risk debt issues and firms with more severe information asymmetries can be expected to accumulate more debt over time, other things equal. Authors like Brennan and Kraus (1987), Noe (1988), Kale and Noe (1991), and Scheepens (1995, Chapter 5) cast doubt on the pecking order theory. Allowing firms a wider range of financing choices, a tax-induced advantage to debt, imperfect insiders observations of firm’s future cash flows, or bank-borrower relations can invalidate the Myers-Majluf results.

Signalling models emphasize that the choice of the firm’s capital structure signals to outside investors the information of insiders. Two types of signalling models can be distinguished. First, investors who do not know the true distribution of the firm’s returns, whereas its managers do, take higher debt levels as a signal of higher firm quality (Ross, 1977). Secondly, a signal can arise because of managerial risk aversion (Leland and Pyle, 1977). The basic idea is that increases in firm leverage allow managers to retain a larger fraction of the risky equity. The larger equity share reduces managerial welfare due to risk aversion, but the decrease is smaller for managers of higher quality projects. Thus managers of higher-quality firms can signal this fact by having more debt.

1.4.1.4 Models based on strategic interactions

Models of capital structure based on strategic interactions between firms and their competitors, customers, and suppliers place emphasis on the strategic relationships between a firm’s capital structure decisions and its strategy when competing in the product market (Brander and Lewis, 1986, and Maksimovic, 1988) and the characteristics of its products or input market (Maksimovic and Titman, 1991). Capital structure decisions affect output markets through the following two effects. Firstly, as the debt level changes, the distribution of returns to shareholders over the different states changes, which in turn changes the output strategy favoured by the shareholders (limited liability effect). Secondly, firms might make output market decisions that raise the chances of driving their rivals into financial distress which depends on their capital structure (strategic bankruptcy effect). Moreover, in an oligopolistic setting a high level of debt may prevent a firm from reaching implicit agreements with its rivals. In a multiperiod setting firms may produce high-quality products in order to maintain their reputations for future sales. Debt, however, can reduce firms’ ability to credibly offer high-quality products. All in all, these models show that output and input market behaviour affects financial structure and vice versa and that reputation considerations are important for firms’ capital structure choice.
Table 1.5 Debt-equity ratio of non-financial enterprises at book values

<table>
<thead>
<tr>
<th></th>
<th>Germany</th>
<th>France</th>
<th>Italy</th>
<th>United Kingdom</th>
<th>Belgium</th>
<th>Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>1.71</td>
<td>2.61</td>
<td>4.87</td>
<td>1.13</td>
<td>2.50</td>
<td>1.33</td>
</tr>
<tr>
<td>1992 a)</td>
<td>1.53</td>
<td>1.35</td>
<td>3.24</td>
<td>1.04</td>
<td>1.54</td>
<td>1.27</td>
</tr>
</tbody>
</table>


1.4.2 Stylized facts of capital structure

The debt-equity ratios of non-financial enterprises, as revealed in Table 1.5, differ across countries. The leverage ratio is relatively high in Italy, low in the UK, and takes an intermediate position in the other countries. In all six countries the leverage ratio declined over time, maybe due to changes in international economic conditions. Rajan and Zingales (1995) find that, unlike Table 1.5, the extent to which firms are levered is fairly similar across the G-7 countries, with only the UK and Germany being relatively less levered. Several authors, analysing corporate financing, question whether the UK has a market-oriented financial system (Frankel and Montgomery, 1991, Corbett and Jenkinson, 1994, and Edwards and Fischer, 1994). Edwards and Fischer even conclude that, if anything, the evidence suggests that bank loans are a larger proportion of the finance of investment by non-financial enterprises in the UK than in Germany.

In general, debt has a tax advantage relative to retained earnings and dividends (Rajan and Zingales, 1995). The results of Rajan and Zingales suggest, however, that differences in the tax system among countries are unable to explain differences in financial structure 9. Moreover, the results are highly sensitive to assumptions about the marginal investor’s tax rate. Interviews with chief financial officers of fifty firms listed on the Amsterdam stock exchange show that only 36% of the firms would seriously lower their target debt levels if equity and debt would be taxed equally on the corporate level (Cools, 1993). This survey study also indicates that only one firm of the fifty interviewed follows a strict pecking order of capital structure. Most firms seek to maintain a target capital structure. However, in attempting to realize that goal, 86% of the firms follow the pecking order. Another indication of pecking order behaviour by Dutch firms is a negative relationship between leverage and profitability (Cools, 1993, and De Haan et al., 1994). Moreover, the fact that retained earnings are the most important source of finance for firms’ activities is in favour of the pecking order theory. In Germany, the UK, and the US only 10% of finance is external, primarily from banks (Corbett and Jenkinson, 1994). Stock and bond markets

9 The results confirm the finding of Miller (1977, p. 266): ‘The tax advantage of debt financing must be substantially less than the conventional wisdom suggests’, and Mayer (1988, p. 1176): ‘But when we come to match taxation with finance, we find that the latter appears to bear very little relationship to the former’. In another article, however, Miller argues the opposite (Miller, 1988).
are relatively minor sources of external finance. Stock market finance typically amounts to less than 10% of gross sources in most countries and in many countries substantially less than that. On a net basis, aggregate stock market sources of finance are sometimes negative, reflecting an excess of repurchases of shares over new issues (Blommestein, 1995).

1.5 Agency relationships and financial structure

1.5.1 Background agency relationships

An agency relationship is a contract, explicit or implicit, under which the agent performs services on behalf of one or more principals. The contract involves the delegation of some decision-making authority to the agent. Agency conflicts of interest arise if the agent and principals seek to maximize their own wealth. Two types of conflicts can be identified: conflicts between managers and equityholders, and between equityholders and debtholders (Jensen and Meckling, 1976). The mechanism used to control these conflicts by minimizing the agency costs leads to the development of (complex) financial contracts. Two kinds of financial contracts can be distinguished: comprehensive and incomplete contracts.

According to the comprehensive contract theory the optimal contract in a costly state verification model, introduced by Townsend (1979) and developed by Gale and Hellwig (1985), takes the form of a standard debt contract with three essential features (Gale and Hellwig, 1985). When the debtor is solvent, a debt contract involves a fixed payment to the creditor (fixed payment). The debtor is declared bankrupt if and only if he cannot make this fixed payment (bankruptcy decision). In the event of bankruptcy the creditor recovers as much as he can (maximum recovery). The theory of incomplete contracts, or property rights approach as it is sometimes called in the theory of the firm literature (Hart, 1995), can also explain the use of debt financing and emphasizes the role of asset ownership and the accompanying control rights. An incomplete contract contains gaps, ambiguities, and missing provisions, because of contracting costs. It may be prohibitively expensive to write a contract that conditions quantity, quality, and price on all (future) states of the world.

Agency conflicts between managers and equityholders arise when managers (inside equityholders) together with equityholders from outside the firm (outside equityholders) hold 100% of the firm's equity. The conflict between the owner-manager and the outside-equityholders results from the manager's tendency to appropriate perquisites, such as expensive corporate cars, plush offices, etc., out of the firm's resources for his own personal benefit. This tendency to inefficiency is lower the larger the fraction of the firm's equity owned by the manager. Holding constant the manager's absolute investment in the firm and the balance sheet
total constant, an increase in the fraction of the firm financed by debt increases the manager’s share of equity and mitigates the loss from the conflict between the manager and outside equityholders. Moreover, since debt commits firms to pay out cash, it reduces the amount of free cash available to managers to engage in the type of wasteful activities mentioned above. The mitigation of conflicts between managers and equityholders is a benefit of debt financing. On the other hand, debt financing increases the potential conflicts between equityholders and debtholders. Equityholders can expropriate debtholders’ wealth by diluting debtholders’ claims by failing to invest in all value-increasing projects (underinvestment problem, as pointed out by Myers, 1977), or by increasing the riskiness of firms’ assets (asset substitution effect).

Three special implications follow from the agency theory. Firstly, bond contracts include features that attempt to prevent asset substitution, such as interest coverage requirements, and the prohibition against investments in new, unrelated lines of business. Secondly, industries in which the opportunities for asset substitution are more limited, for example regulated public utilities, will have higher debt levels, *ceteris paribus*. Thirdly, firms for which slow or even negative growth is optimal and businesses having large cash inflows from operations should have more debt.

1.5.2 Stylized facts of agency problems

Financial contracts are, due to agency problems, complicated legal documents that place substantial restrictions on the borrower’s behaviour. One of these restrictions is the obligation to collateralise the loan with real estate. Borrowers whose projects are observably more risky to the lender have to post more collateral than borrowers whose projects are perceived to be less risky. Table 1.6 shows the share of loans collateralised with real estate. This share is relatively high in the UK, suggesting that agency problems are most severe in the UK.

The effects of agency problems on measures of capital structure have been investigated empirically by a large number of authors showing mixed results (Cools, 1993). Worth to mentioning is that the riskiness of firms appears to be the most important determinant of the capital structure of Dutch corporations listed on the Amsterdam stock exchange, with riskier firms having lower financial leverage (Cools, 1993). This suggests that agency problems between managers and equityholders as well as reputational considerations are important.
Table 1.6 Loans collateralised with real estate
In % of total loans

<table>
<thead>
<tr>
<th></th>
<th>Germany</th>
<th>France</th>
<th>Italy</th>
<th>United Kingdom</th>
<th>Belgium</th>
<th>Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983 a)</td>
<td>45</td>
<td>42</td>
<td>-</td>
<td>50</td>
<td>39</td>
<td>35</td>
</tr>
<tr>
<td>1993</td>
<td>36</td>
<td>41</td>
<td>40</td>
<td>59</td>
<td>34</td>
<td>36</td>
</tr>
</tbody>
</table>


1.6 Debt maturity structure and financial structure

1.6.1 Theory of debt maturity

Three broad approaches in the literature have been offered to explain the debt maturity structure: theories based on contracting costs, on signalling, and on taxes. The theories differ particularly in the focus on the benefits of short-term debt compared to long-term debt.

Disadvantages of repeated short-term financing are issue costs, interest rate risk, and the fear of credit rationing (Sharpe, 1991). The contracting costs view argues that short-term debt is useful because it preserves the option for lenders to terminate or renegotiate a lending arrangement. This option is valued by lenders, because long-term debt creates an incentive for borrowers to increase asset risk after taking on debt (asset substitution effect) (Bamea, Haugen, and Senbet, 1980). In addition, debt that matures before an investment option has to be exercised does not induce suboptimal investment decisions (Myers’ underinvestment problem). The main testable implication of this view is that firms with severe information asymmetries will borrow relatively more with a short maturity.

The signalling models of debt maturity examine the signalling implications of the firm’s debt maturity choice. Three theoretical implications emerge from these models. Firstly, firms with large potential information asymmetries are likely to issue short-term debt because of the larger information costs associated with long-term debt (Flannery, 1986). Secondly, the maturity choice of a firm depends on its credit risk. Diamond (1991, 1993) argues that short-term borrowing exposes firms to the risk of excessive liquidations: the risk that a solvent but illiquid borrower is unable to obtain refinancing. As bad news arrives lenders are more reluctant to refinance debt. Firms with the highest credit ratings issue short-term debt because their refinancing risk is small. Firms with lower credit ratings prefer long-term debt to reduce this refinancing risk. Firms with very poor credit ratings, however, are unable to issue long-term debt because of extreme adverse selection costs. Flannery (1986) and Kale and Noe (1990) show that
if bond market investors cannot distinguish between high-quality and low-quality firms, high-quality firms consider their long-term debt to be relatively underpriced and will, therefore, issue short-term debt. Conversely, low-quality firms will want to issue more overpriced long-term debt. Thirdly, the debt maturity depends on the accuracy of private and public information. Figure 1.3, based on Rajan and Winton (1995), shows the kind of debt contract optimal for various values of the precision of a private signal (verifiable signal or covenants), \( \alpha \), and of the accuracy of a public signal, \( \beta \). When the public signal is very imprecise, the financial institution has an incentive to monitor even with short-term debt. As the public signal becomes more accurate, only long-term bank debt with covenants provides enough incentive to monitor. When the public signal is extremely accurate, \( i.e. \beta \) close to 1, short-term debt without monitoring, be it either bank or public debt, dominates. Monitoring is no longer worth the cost, while a short maturity allows the lender to act freely on the basis of public information.

The tax hypothesis of debt maturity choice implies that firms employ more long-term debt when the term structure of interest rates has a positive slope (Brick and Ravid, 1985). The total tax benefit of debt is not independent of the maturity structure whenever the term structure of interest rates is not flat. If the term structure has a positive slope, the expectations hypothesis implies that in early years the interest expenses from issuing long-term debt is greater than the expected interest expenses from rolling over short-term debt. But interest outlays will be lower in later years. In this case issuing long-term debt reduces the firm’s expected tax liability and consequently increases the firm’s current market value. Conversely, a downward sloping term structure renders short-term debt optimal.
1.6.2 Stylized facts of debt maturity

A breakdown of credit into short-term and long-term is shown by Table 1.7. Short-term credit is defined as credit with an original maturity of up to and including one year, with the exception of Italy (eighteen months) and the Netherlands (two years). Table 1.7 suggests that in all countries other than Italy and the UK long-term credit accounts for around 80% of total credit. In Italy, the breakdown of credit into short-term and long-term is fifty-fifty. The same was true for the UK in the early eighties, but the proportion of long-term credit in total credit has caught up to 69% in 1993. Differences in maturity structures remain when disaggregating the private sector into the corporate sector (non-financial enterprises) and households. The maturity structure of credit for the corporate sector is relatively short in Italy and the UK, while for households only Italy is a real outlier. In all countries firms have a larger fraction of short-term credit than households. Looking at Figure 1.3, this is not a surprising result. The accuracy of a public signal is relatively high for (large) firms, implying also short-term debt without monitoring. The accuracy of public signals also differs between countries. Based on the activity on stock markets (see Table 1.2 in Section 1.2.2) the amount and precision of public information is rather low in Italy, implying short-term bank debt with monitoring, and relatively high in the UK, implying short-term bank and/or public debt without monitoring.

Empirical evidence to some extent supports each of the theories of debt maturity. Barclay and Smith (1995) analyzing US data of the industrial corporate sector find strong empirical evidence for the contracting costs hypothesis. Firms with less information asymmetries, such as firms with hardly any growth options and large or regulated firms, have a comparatively long debt maturity. Barclay and Smith find little evidence that firms use the maturity structure of their debt to signal information to the market. Easterwood and Kadapakkam (1994), and Himmelberg and Morgan

Table 1.7 Short-term versus long-term credit
In % of each sector's credit

<table>
<thead>
<tr>
<th></th>
<th>1983 a)</th>
<th>1993</th>
<th>1993</th>
<th>1993</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private sector</td>
<td>Private sector</td>
<td>Corporate sector</td>
<td>Households</td>
</tr>
<tr>
<td></td>
<td>Short</td>
<td>Long</td>
<td>Short</td>
<td>Long</td>
</tr>
<tr>
<td>Germany</td>
<td>19</td>
<td>81</td>
<td>16</td>
<td>84</td>
</tr>
<tr>
<td>France</td>
<td>20</td>
<td>80</td>
<td>17</td>
<td>83</td>
</tr>
<tr>
<td>Italy</td>
<td>53</td>
<td>47</td>
<td>51</td>
<td>49</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>46</td>
<td>54</td>
<td>31</td>
<td>69</td>
</tr>
<tr>
<td>Belgium</td>
<td>-</td>
<td>-</td>
<td>23</td>
<td>77</td>
</tr>
<tr>
<td>Netherlands</td>
<td>21</td>
<td>79</td>
<td>17</td>
<td>83</td>
</tr>
</tbody>
</table>

(1995) show a positive relationship between short-term debt and proxies for agency problems. One of these proxies is firm size. Small firms rely more on short-term debt than large firms. Barclay and Smith (1995) find no evidence that taxes affect debt maturity. However, Brick and Ravid’s argument that the slope of the term structure of interest rates induces a tax preference for longer maturity is confirmed by Table 1.8. The average spread, the difference between long-term and short-term interest rate, for the years 1980-1995 is relatively low in the countries with a high proportion of short-term debt (Italy and the UK). Moreover, the spread seems to be positively correlated with inflation (see Table 1.8). Countries with historical low inflation rates (Germany and the Netherlands) have a relatively high spread and vice versa.

1.7 The emerging image: a synthesis and summary

The survey of five different theories and of the stylized facts, as summarized in Table 1.9, all capture particular insights into the financial structures considered.

The theory of financial intermediation explains the existence of indirect credit markets which are far more important than direct credit markets. Only in the UK and France less than 90% of total credit to the private sector is indirect credit. The indirect credit market exists because financial intermediaries exploit economies of scale and scope and have comparative advantages in the production of information. Loan-deposit spreads, rough proxies for direct credit market imperfections, are higher for households than for firms (see Table 1.9). An explanation is that a larger amount of information is available for (large) firms listed on the stock market. The stock market activity is comparatively high in the UK. In all countries, except the Netherlands, about 90% of the loans to the private sector are bank loans. Within the banking sector the concentration of total assets varies across countries. It is high in the Netherlands and Belgium, low in Germany, and takes an intermediate position in the other countries considered (see Table 1.9). Under the assumption that deposit-taking and lending are complementary, banks have a cost advantage vis-à-vis other financial intermediaries in loan-making and monitoring. In addition, banks have information advantages from cultivating close and durable relationships with their clients. These banking relationships evolve through interaction between lender and borrower over both time and multiple products, and through an equity interest of the bank in the
firm. Banking relationship, measured by shareholdings by banks, is relatively strong in Germany (house banks) and in Italy (local banks).

An important element of financial structure are the regulatory rules under which financial intermediaries have to operate. Regulation of financial intermediaries primarily aims at preserving the safety and soundness of the financial system and at providing (small) investor protection. Regulation is regarded as both cause and effect of the emergence and the operation of specific categories of financial intermediation. The political processes of regulation and the economic forces of avoidance continually adapt to each other. In the 1980s bank deregulation has significantly affected all countries, except Germany, the UK, and the Netherlands where the banking industry traditionally has been less regulated. As a result of EC initiatives - taken to establish a European level playing field - the system of regulation is becoming more harmonized.

The theory of capital structure shows that the tax structure, information asymmetries, and the strategic interaction between firms and their competitors, customers, and suppliers have an impact on financial structure. The corporate finance patterns vary across countries. The leverage ratio is especially high in Italy, while the UK has a leverage ratio somewhat below the level in other countries considered. Although interest payments are tax deductible, results from recent studies seems to suggest that differences in tax structure among countries are of minor

Table 1.9 Summary key characteristics of financial structure

<table>
<thead>
<tr>
<th></th>
<th>Germany</th>
<th>France</th>
<th>Italy</th>
<th>United Kingdom</th>
<th>Belgium</th>
<th>Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct credit</td>
<td>-</td>
<td>0</td>
<td>-</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Loan-deposit spread</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firms</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Households</td>
<td>+</td>
<td>0</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Stock market activity</td>
<td>-</td>
<td>0</td>
<td>-</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bank loans</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>0</td>
</tr>
<tr>
<td>Bank concentration</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Shareholdings by banks</td>
<td>+</td>
<td>0</td>
<td>-</td>
<td>+</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Regulatory environment 1980s</td>
<td>+</td>
<td>0</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Leverage ratio</td>
<td>0</td>
<td>0</td>
<td>+</td>
<td>-</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Collateral</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>+</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Short-term credit</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Firms</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Households</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Spread 1980-1995</td>
<td>+</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Inflation 1980-1995</td>
<td>-</td>
<td>0</td>
<td>+</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Explanatory notes: + = high; 0 = average; - = low.
importance in explaining differences in capital structure. In all industrialized countries firms predominantly finance their activities internally. This is in favour of the pecking order theory, which predicts that firms prefer internal finance, followed by low-risk debt and, in last instance, equity. Firms tend to issue equity when information asymmetries are relatively small. A high firm debt level can be viewed as a signal of high firm quality. Debt influences the strategic interaction between firms and their competitors, customers, and suppliers.

According to the agency theory conflicts of interest can arise between agent and principals. Debt mitigates potential conflicts between managers and outside equityholders, but increases the potential conflicts between equityholders and debtholders. Equityholders can expropriate debtholders’ wealth by diluting debtholders’ claims by failing to invest in positive net present value projects and by investing in overly risky projects. All factors relevant for (controlling) agency conflicts, such as growth opportunities and features of financial contracts have an impact on the financial structure. Agency problems, proxied by the fraction of loans backed by real estate, appear to be more severe in the UK than in the other countries considered.

Finally, theoretical arguments based on contracting costs, signalling, and taxes explain the debt maturity structure. The contracting costs view learns that countries with more severe agency problems, such as the UK, have a shorter debt maturity. Debt maturity models based on signals provide evidence for the fact that in all countries the maturity structure of credit to the corporate sector is shorter than to households. Public information about (large) firms is much more accurate than that about households. Therefore, these firms can have short-term debt without monitoring. The accuracy of public signals also differs between countries. Based on the activity on stock markets the accuracy and amount of public information is especially low in Italy, implying a relatively large share of short-term bank debt with monitoring, and high in the UK, implying short-term bank and/or public debt without monitoring. In favour of the tax hypothesis of debt maturity choice is that countries with a lot of short-term debt, like Italy and the UK, have on average a spread far below the spread of the other countries considered and a high inflation record.

This survey clarifies that in all countries considered indirect credit markets play a far more pivotal role in granting credit than direct credit markets, with banks being the dominant indirect credit market participants. The identified theoretical foundations of financial structure offer guiding principles for analyzing to which extent certain characteristics are likely to persist over time as well as to their future evolution. Under the assumption of ongoing economic and monetary convergence in Europe, financial structures, too, may converge very well to a European average, as one of the most striking discrepancies in financial structure, the differences in debt maturity structure, are likely to diminish.