Financial Structure and Monetary Transmission in Europe: A Cross-Country Study
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7 SUMMARY AND CONCLUSIONS

7.1 Objective of the study

This study examines the relation between financial structure and the monetary policy transmission process in Europe in general and in Economic and Monetary Union (EMU) member states in particular. To do so a cross-country perspective is chosen. Financial structure refers to the universe of financial markets, financial institutions or intermediaries, and financial instruments of all sorts at a given place and time. Several potential differences in financial structure between countries exist following this definition of financial structure. In addition, the channels through which monetary policy decisions are transmitted into real economic activity may differ across countries.

The relation between financial structure and monetary policy transmission has been rarely a topic in the financial literature for a long time. Partly this is so because financial structure has, assuming perfect financial markets, no influence at all on real economic activity. Financial structure, however, plays an essential role in the monetary transmission process if financial markets are imperfect. Nowadays there is more or less a consensus, based on a large body of primarily US studies, that financial markets are not perfect. The macroeconomic impact of financial markets imperfections is empirically, however, still ambiguous.

In Europe, the analysis of monetary transmission received a stimulus by the discussions about the EMU which viability may depend on the extent to which monetary policy effects differ across member states. Differences in financial structure across EMU countries may hamper the implementation of a common European monetary policy. This study focuses on six European countries: Germany, France, Italy, United Kingdom, Belgium and the Netherlands. Considering these European countries has the advantage that we can take a closer look whether cross-country differences in financial structure have any systematic relation with inter country differences in the monetary transmission process. In this way this book may be characterised as a cross-country study. Generally the sample period analysed covers the years 1980-1995, which is a period of financial liberalisation, deregulation and innovation.

Against this background, the objective of this study is to address the issue as to which similarities and differences exist among financial structures in the EU countries considered and whether cross-country differences in financial structure may have an impact on the strength and nature of monetary policy transmission processes in Europe in general and in EMU in particular.
7.2 Summary

Chapter 1 provides an overview of both theories and stylized facts of financial structure in the six EU countries considered. The focus is on one of the most essential elements of financial structure regarding the monetary transmission process, namely credit to households and firms. The approach is by means of five distinguished theoretical issues: theory of financial intermediation, financial regulation, capital structure of firms, agency relationships and debt maturity structure. The theory of financial intermediation explains the existence of indirect credit markets. These markets exist because financial intermediaries exploit economies of scale and scope and have comparative advantages in the production of information. Under the assumption that deposit-taking and lending is complementary, banks have a cost advantage vis-à-vis other financial intermediaries in granting credit and monitoring. Banks also have information advantages because they entertain close and durable relationships with their clients. Banking relationship, measured by bank shareholdings in corporate equity, is strong in Germany (house banks) and Italy (local banks). Regulation is regarded as both cause and effect of the emergence of specific categories of financial intermediaries and products. The theory of capital structure documents that the tax structure, information asymmetries, and the strategic interaction between firms and their competitors, customers and suppliers have an impact on financial structure. According to the agency theory, debt mitigates potential conflicts of interest between managers and outside equityholders, but also increases the potential conflicts between equityholders and debtholders. In this chapter theoretical arguments, based on contracting costs, signalling, and taxes, are set out to explain the debt maturity structure.

Chapter 2 presents a decomposition of the transmission channels of monetary policy with special attention to credit and asymmetric effects of monetary policy. Broadly speaking, monetary transmission channels can be divided into five different channels. Besides direct monetary transmission with a pivotal role for money supply, the other four transmission channels work through interest rates, asset prices, credit and financial market expectations, particularly inflationary expectations and uncertainty about the payoffs from debt contracts. Financial structure particularly plays a role in the credit channels of monetary policy, subdivided into a bank lending and balance sheet channel. These two channels focus on financial market imperfections as an essential factor of propagation and amplification of a monetary policy shock. This phenomenon is referred to as the financial accelerator effect. Frictions in financial markets, caused by asymmetric information, monitor and contract costs, introduce a wedge between the costs of external and internal finance. Any shock to the external finance premium (EFP) affects borrower's decisions and, therefore, his economic activities, as the premium for external funds affects the overall price of funds the borrower faces. The debate about the asymmetric effects of
monetary policy addresses the issue whether a policy of monetary tightening is more effective in slowing down economic growth than a policy of monetary expansion to stimulate the economy. Asymmetric effects of monetary policy result because of asymmetric behaviour from the side of lenders (read: banks) or borrowers (read: households and firms) or, theoretically, from a convex short-run aggregate supply curve together with a linear aggregate demand curve. An argument for a convex supply curve is a downward stickiness of prices. The asymmetric nature of the financial accelerator effect and of consumer and producer expectations enhances asymmetric effects of monetary policy on output. Finally, an overview of the literature on empirical research about credit and asymmetric effects of monetary policy is provided.

Chapter 3 focuses on the determinants of the diffusion pattern of aggregated off-balance-sheet (OBS) bank activities during the years 1989-1995. Broadly speaking, OBS products are instruments to hedge risk exposure, such as swaps, options and futures or other instruments which supplement on-balance-sheet bank lending activities. Loan commitments and standby letters of credit are examples. Empirical evidence of the diffusion pattern of OBS activities in Europe is particularly important because financial innovations, such as OBS items, affect the costs and scope of financial intermediation and therefore the process of monetary policy transmission. Determinants of OBS activities analysed are an autonomous speed of diffusion, market forces, captured by bank specific characteristics, regulatory factors and macroeconomic conditions.

Chapter 4 examines the existence of credit channels of monetary policy with the use of bank-level panel data for the years 1990-1995. Following a review of the literature, two principal hypotheses are formulated. One regards the existence of a bank lending channel, the other the existence of a balance sheet channel. Monetary policy matters most for small banks and for banks with relatively illiquid balance sheets (bank lending channel) and as loan demand interacts with bank size and therefore with borrower size (balance sheet channel). The first hypothesis can be derived from the assumption that the costs of non-deposit funding are inversely related to bank size and bank balance sheet liquidity. The other hypotheses assumes that large banks tend to lend to large borrowers. In this way large banks' effective loan demand reacts less prominently to a monetary policy tightening, since large firms' balance sheets remain relatively strong.

Chapter 5 uses aggregated macroeconomic time series to study the potential and existence of credit channels of monetary policy for the years 1980-1996 from a cross-country perspective. Moreover, the relative importance of a bank lending and balance sheet channel is examined. Vector error-correction models (VECM) consider besides credit two credit supply factors,
capturing the two sub-channels of the credit channels of monetary policy in a broad sense: bank securities (bank lending channel) and net financial wealth of households and firms (balance sheet channel). Credit demand effects are captured by movements in real gross domestic product.

Chapter 6 addresses the issue of the macroeconomic relevance of credit channels by examining the impact of the EFP, that may vary over the business cycle, on private consumption in Europe for the years 1980-1995. A consumption model is developed taking credit channels into account. This so-called modified $\lambda$-model assumes that liquidity-constrained consumers not only use current income for financing consumption expenditure, but also the available supply of external finance, which depends on the EFP. The financial accelerator effect is taken into account by examining the EFP in conjunction with the business cycle, because the financial propagation mechanism varies over the business cycle along with asymmetric information between borrowers and lenders in credit markets. Informational frictions in credit markets should be stronger, the deeper the economy is in recession and the weaker the balance sheets of borrowers.

7.3 Conclusions

The main (empirical) findings and implications for monetary policy (transmission) of this book are the following and are summarised graphically as shown in Table 7.1.

Firstly, the survey of one of the most essential elements of financial structure regarding monetary policy transmission documents that indirect credit markets with banks as the main players are far more important than direct credit markets. Most striking difference in financial structure among the countries considered relates to debt maturity. It is comparatively short in Italy and the United Kingdom. If this difference relates to historical differences in term spread and inflation developments it will be reduced by recent European wide convergence in interest rates and inflation. In all countries credit to firms has a shorter maturity than credit to households, related to a higher accuracy of public information about firms.

Secondly, the introduction to and decomposition of monetary transmission channels shows that monetary policy authorities are confronted with a wide spectrum of transmission channels, which they have to take into account for monetary policy preparation and implementation. Another monetary policy implication is that a change in the stance of monetary policy can be augmented and amplified by credit channels and that these channels have distributional consequences: the impact of monetary policy differs across (specific groups of) borrowers (read: households and firms) and lenders (read: banks). Empirical research documents differences in
Table 7.1 Summary empirical findings

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Explanatory notes: •, •, and • mean strong, weak and no empirical support, respectively; blank indicates not analysed.

monetary transmission mechanisms for households and firms. The empirical results suggest that for the purpose of monetary policy, credit is an useful information variable with respect to households, while money contains more useful information with respect to firms. In addition, the response of certain (groups of) firms to a change in the stance of monetary policy may differ, because of differences in the degree to which firms face financial market imperfections. Also the response of types of banks to monetary policy changes may differ (see Chapter 4). Finally, monetary policy may have asymmetric effects on output. Based on the empirical analysis presented, a weak form of asymmetric effects of monetary policy exists in France, Italy and Belgium.

Thirdly, bank-level panel data regressions show that the diffusion process of OBS activities in Europe are significantly explained by an autonomous speed of diffusion, regulatory factors, bank specific characteristics, such as bank size, scope economies, profitability and solvency, and macroeconomic conditions like the term spread and real economic growth. Besides these findings perhaps the most relevant monetary policy implication is that the impact of monetary policy actions on OBS diffusion differs between the countries of continental Europe on the one hand and the United Kingdom on the other. In all countries except the United Kingdom, the term spread has a negative impact on OBS diffusion, indicating substitution between traditional banking activities, that is short-term funding and long-term lending, and modern banking in terms of OBS products. In the United Kingdom, however, the spread and aggregated OBS items are significantly positively related to each other due to a dominant influence of interest rate
uncertainty and future changes in the short-term interest rate and a minor role of traditional banking activities.

Fourthly, bank-level panel data regression results confirm the existence of a bank lending channel in Germany, Belgium and the Netherlands in particular. Also in France and Italy the empirical results support the existence of a bank lending channel as the stance of monetary policy is not measured by the change in the short-term interest rate but by a monetary conditions index, which also takes dollar exchange rate developments into account. The balance sheet channel is found to be particularly strong in Germany and to a lesser extent also in Italy. For the United Kingdom, however, no empirical evidence at all has been found in favour of the existence of credit channels of monetary policy.

Fifthly, in all countries except the United Kingdom and Belgium credit to households is more responsive to a contraction in monetary policy than credit to firms. This finding supports the existence of credit channels, since the credit channel theory documents that small borrowers are more sensitive to a monetary shock than large borrowers. The extent and significance of this effect confirm more or less the qualitative evidence of credit channels based on various credit channel indicators. Impulse response patterns based on VECM show that the bank lending channel is particularly significant in Germany, France and Italy. The balance sheet channel seems to be relevant in Germany and Italy and only in the short run in the Netherlands. Another finding is that the lack of empirical evidence supportive to a bank lending channel for the United Kingdom, Belgium and the Netherlands is explained by the ability of monetary policy authorities to directly constrain credit. The impact of a monetary policy contraction depends on reserve requirements and may be tempered by the access of internationally operated banks to foreign sources of funds, coming from international interbank markets or from affiliated banks abroad.

Sixthly, the empirical analysis about private consumption and the EFP shows a significant accelerator effect of the EFP on consumption in Germany, Italy and the Netherlands. During periods of weak economic activity this effect can lead to a decline in annual consumption growth by about 0.4 percentage point. In contrast, for France, the United Kingdom and Belgium no empirical evidence in favour of this financial propagation mechanism has been found. Another implication for monetary policy, especially within the context of Stage Three of EMU, is the cross-country differences regarding intertemporal substitution. Instrumental variables regression results show that an increase in the real interest rate with 1 percentage point leads to a decline in current real per capita consumption of at most 0.2% in France and Italy, around 0.5% in the United Kingdom and Belgium and about 0.9% in Germany and the Netherlands. Consumption is
relatively insensitive to movements in the real interest rate in France and Italy, presumably because both countries were highly financially regulated in the early 1980s, which is part of the sample period. In this way the empirical results illustrate that financial liberalisation may increase the interest rate sensitivity of consumption.

The overall conclusion emerging from all studies presented here is that some elements of financial structure in Europe are clearly relevant for European monetary policy in general and the monetary transmission mechanism in particular. Firstly, monetary policy interacts with financial structure. Bank regulation may affect the OBS diffusion pattern and OBS activities form a substitute of traditional banking in continental Europe, while in the United Kingdom they are complementary. Moreover, the degree of financial deregulation is related to the sensitivity of consumption to real interest rate movements; financial liberalisation increases the interest rate sensitivity of consumption. Secondly, the impact of financial structure on the monetary transmission process depends on the degree of financial market imperfections, in particular regarding credit markets. Based on different types of data and a variety of econometric techniques this study supplies conclusive evidence in favour of the existence of both a bank lending and balance sheet channel in Germany and Italy. For France, Belgium and the Netherlands the results are more ambiguous; there is some evidence for the existence of a bank lending channel in these continental European countries and for the existence of a balance sheet channel in the Netherlands. No empirical evidence at all supports the existence of credit channels in the United Kingdom.

Finally, the evidence presented in this book supports the practice of central banks in Europe and the European Central Bank to show an interest in credit as a main indicator and component of the monetary policy transmission mechanism.