Long-term developments in corporate financing in Germany – evidence based on the financial accounts

It is evident from the financial accounts that total financing of enterprises in Germany has increased over the past two decades – both in nominal and in real terms. This is essentially a response to overall economic growth. At the same time, the financing structure has changed. While internal funds have basically been the most important source of finance and have risen in trend terms, external financing has been characterised by strong cyclicality, which has been closely correlated with economic developments.

In addition, there have been structural shifts within external financing. With a few exceptions, loans have consistently been the most important instrument. However, there have been changes in terms of lenders: while this role was, in the past, assumed mainly by banks, a trend towards increased substitution in favour of other lenders can be observed in the period under review. For instance, large (international) groups increasingly distribute funds via special financing vehicles within the group. The bank loan, by contrast, though still the most important source of external funding, has systematically seen its importance wane over the past 20 years. Overall, intermediation services via traditional credit business have therefore declined.

These structural changes have much to do with a changing macroeconomic and institutional environment. The growing economic integration, which has been very pronounced, mainly within the European Union with the foundation of the monetary union and the eastern enlargement, probably contributed to these developments. Moreover, more stringent regulatory requirements and changes in corporate taxation are also likely to have had an impact on financing.

Introduction

Corporate financing as interface between the real economic and the financial sphere

Non-financial corporations' total financing and financing structure reflect numerous real economic and financial factors. Corporate financing data contain important information on macroeconomic developments, as financing decisions are primarily based on investment decisions, while at the same time providing valuable insight into financing conditions within the corporate sector. Corporate financing is therefore a key metric at the interface between a country's financial sector and its real economy.

Significance of corporate financing for monetary policy

As a consequence, it is also particularly important for monetary policy, as it influences the effectiveness of monetary policy measures. For instance, adjustments to the policy interest rate change funding costs via the "interest rate channel" of monetary policy transmission and impact on investment, economic activity and ultimately price developments. In addition, monetary policy may also affect enterprises' access to funds via the "credit channel" and thus additionally influence economic developments and prices.[1]

Developments in corporate financing in Germany from 1991 to 2010

The present article describes and analyses developments in non-financial corporations' funding in Germany between 1991 and 2010. The data used are the financial accounts, which – as an integral component of the national accounts – allow a uniform and consistent description of corporate financing over the entire period. This long-term perspective allows both structural changes and cyclical patterns to be identified. In addition, the information gleaned from the macroeconomic circular flow permits a study of the interaction and the feedback between corporate financing and the funding of other sectors of the economy.

Instruments and structure of corporate financing

Enterprises have a number of financial instruments at their disposal, which differ, in particular, in terms of the source of the funds and the legal position of the capital providers. While internal funds stem from within the corporate process, external funds are supplied by capital providers outside of the enterprise. In terms of the legal position of the capital providers, a distinction is made between equity and debt, with equity conferring a right to a share in the enterprise's profits, while those providing debt capital act as creditors.

Determinants of optimal financing structure

An analysis of the determinants of financing behaviour is closely associated with the question of optimal financing volume and structure. It is generally assumed that decision-makers will endeavour to maximise the enterprise's net worth.[2]

"Irrelevance theorem" applies only in perfect capital market

Only under certain, fairly strict conditions[3] does the capital structure and thus leverage (the ratio of debt to equity capital) have no impact on the net worth, ie the value generated by investments is independent of how they are funded (irrelevance theorem).[4] As these conditions are not met in reality, however, the financing structure has an impact on the net worth and must therefore be determined by manage-

1 See Deutsche Bundesbank, Bank balance sheets, bank competition and monetary policy transmission, Monthly Report, September 2001, pp 51-70.
2 Based on the present value approach, this figure equates to the sum of all the enterprise's future net cash flows discounted using the cost of capital.
3 The assumptions relate to a perfect capital market. Generally, this is understood to mean a market with no transaction costs, homogenous expectations when using publicly available information and the assumption that market participants are price takers and quantity setters. See also F Modigliani and M H Miller (1958), The cost of capital, corporation finance, and the theory of investment, American Economic Review, 53, pp 433-443.
4 An increase in the percentage of external capital in corporate financing initially lowers the average cost of capital. However, as an increasing volume of net cash flows is used to service interest on debt, the residual claim of equity providers declines. This raises equity risk and consequently the required return on equity, which means that the average cost of capital will remain constant in a no-arbitrage equilibrium.

ment, taking into account the cost and benefits of alternative forms of financing. What financing structure is chosen depends, amongst others, on micro and macroeconomic determinants as well as on the financial and the tax system.

In reality, the financing structure depends on several factors: transaction costs, …

Tax conditions, for instance, influence the choice between debt and equity financing: seen in isolation, the taxation of profit payouts is a disadvantage for equity financing if the cost of debt is tax deductible.[5] However, this cost has to be weighed against the cost of additional debt in the form of bankruptcy costs and higher interest on debt if creditworthiness deteriorates. A weighing of the costs and benefits of financing options in this fashion yields an optimal leverage ratio, which the enterprise will endeavour to achieve over time, but which may in turn change with altered conditions.

… information and incentive aspects, …

Information and incentive problems among different capital providers as well as between owners and management also influence financing structure. The principal-agent relationship between management (agent) and capital providers (principal) and the fact that the former has an information advantage over the latter gives rise to a preference order with regard to financing instruments. Forms of financing involving a less pronounced information and incentive problem are favoured. This dictates a pecking order for financing instruments, headed by internal funds, followed by debt and, finally, equity financing (theory of financing hierarchy).[6]

Information aspects and the institutional set-up are also important for the decision on the structure of external financing. For this reason, the banking sector is an important source of external funds for enterprises, as banks generally have a cost advantage over alternative capital providers in terms of monitoring their borrowers.[7] By contrast, access to market-based forms of financing – say issuing corporate bonds – is subject to special requirements, such as a high degree of transparency, as evidenced in the voluntary submission of information on the enterprise and in meeting legally prescribed disclosure requirements, which many enterprises do not wish to comply with for operational reasons or cannot meet due to other restrictions.

… macroeconomic factors …

In addition, macroeconomic developments, particularly the business cycle, also influence financing. For instance, economic developments impact on enterprises' earnings situation and thus their internal financing capacity. However, reduced earnings also make access to external funds more expensive if the provider of external funds fears a conflict of interest because the percentage of internal financing is small and the valuation of assets accepted as collateral is, moreover, low and therefore demands an interest rate premium as compensation for a heightened risk of loss.[8]

… and supply-side determinants

Finally, supply-side factors can also affect total financing and financing structure. Active balance sheet management on the part of financial intermediaries can alter the supply of funds, for example if their activities are limited by valuation effects relating to the intermediaries' own assets, more restrictive access to short-

5 By way of example, reference may be made to the withholding tax in Germany, which was introduced with the Business Tax Reform Act of 2008 (Unternehmenssteuerreformgesetz 2008) and which is not neutral with regard to financing, giving preference to debt over equity. For a broad general overview of the effects of taxation on corporate financing, see J R Graham (2003), Taxes and corporate finance – a review, Review of Financial Studies, 16, pp 1075-1129.

6 See S C Myers (2001), Capital structure, Journal of Economic Perspectives, 15, pp 91-102; R G Rajan and L Zingales (1995), What do we know about the capital structure? Some evidence from international data, The Journal of Finance, 50, pp 1421-1460; and E F Fama and K French (2002), Testing trade-off and pecking order predictions about dividends and debt, Review of Financial Studies, 15, pp 1-33.

7 See D W Diamond (1984). Financial intermediation and delegated monitoring, Review of Economic Studies, 51, pp 393-414.

8 In this case, the literature speaks of an "external financing premium". It is defined as the difference between the cost of capital for internal and external financing. See B S Bernanke and M Gertler (1989), Agency costs, net worth and business fluctuations, American Economic Review, 79, pp 14-31; and G L Hubbard (1998), Capital-market imperfections and investment, Journal of Economic Literature, 36, pp 193-225.

term revolving refinancing or regulatory capital requirements.[9] This may amplify the business cycle – particularly if enterprises' ability to resort to other forms of financing is constrained.[10] For instance, they may then be forced, in economic downturns, either to resort to internal funding options – which are themselves limited by a poorer earnings situation – or to adjust their spending accordingly.[11]

Link between business cycle and leverage

While these considerations imply that investment demand and overall financing are procyclical across the business cycle, the development in the ratio between equity and debt financing on the one hand and the composition of debt financing on the other during the business cycle cannot always be clearly identified beforehand. They depend, amongst others, on how severely the above-mentioned financial frictions on the supply and demand side impact the corporate sector. It is clear that capital procurement from external sources declines and that the cost of debt financing, including potential insolvency costs, increases during downturns. Leveraging would therefore also tend to decrease. In this context, however, when looking at the degree of leveraging in the entire corporate sector, the percentage of enterprises able to resort to alternative forms of external financing is decisive.

Debt reduction can be associated with real economic costs

Valuation effects on wealth also play a role for the financing structure, as falling asset prices on the financial market are usually associated with a greater need for write-downs, which reduce the equity position. This raises the leverage ratio and may hamper investment dynamics, especially where debt is excessive.[12] If the corporate sector uses payment surpluses in order to successively reduce debt and bring down the leverage ratio, this can ultimately result in a long period of adjustment with low investment activity.[13]

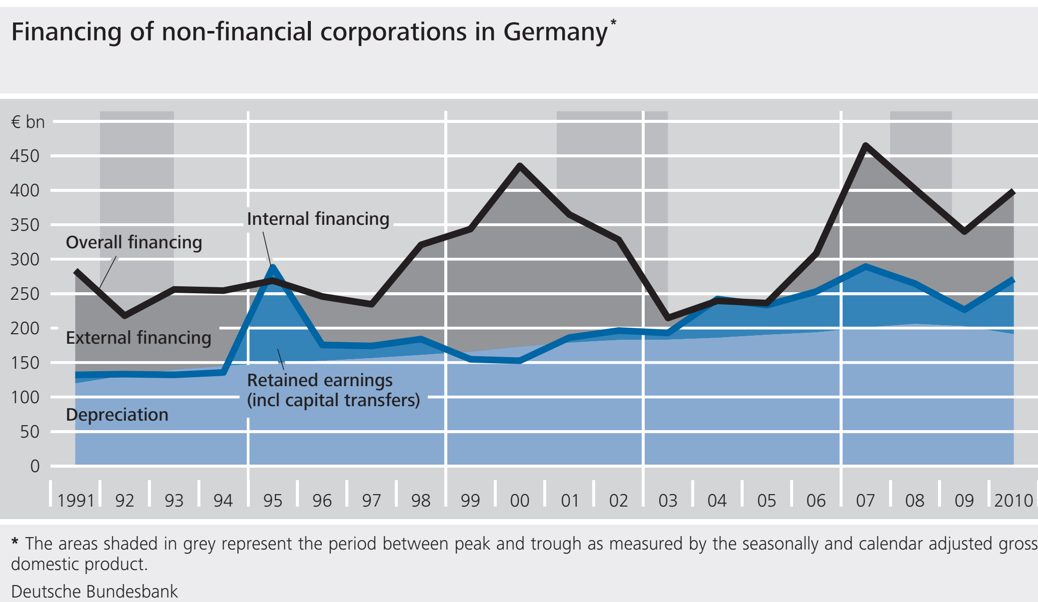
Developments in corporate financing in Germany between 1991 and 2010

Based on financial accounts

The following empirical observation is based on data taken from the financial accounts and the national accounts, which are compiled according to the European System of Accounts 1995 (ESA 95). The sector non-financial corporations as defined there includes all corporations (public limited companies or AGs, and private limited companies or GmbHs) and quasi-corporations (partnerships, ie general partnerships or OHGs, and limited partnerships or KGs, etc) domiciled in Germany.[14] A disaggregated analysis, for instance by enterprise size or sector, is not possible. Financial instruments are broken down by liquidity, maturity and legal features and can be sub-divided primarily into deposits, securities and loans.

9 Financial friction is discussed, amongst others, under the term "credit channel of monetary policy transmission". See T Adrian and H S Shin (2009), Money, liquidity and monetary policy, American Economic Review, 99, pp 600-605; and P Disyatat (2011), The bank lending channel revisited, Journal of Money, Credit and Banking, 43, pp 711-734. An efficient redistribution of refinancing funds within organised banking networks weakens credit supply-side financing constraints for the corporate sector; see M Ehrmann and A Worms (2004), Bank networks and monetary policy transmission, Journal of the European Economic Association, 2, pp 1148-1171.
10 A credit crunch is a situation in which the supply of bank loans is so limited in quantitative terms by bank-side factors that it represents a significant economic risk. See also Deutsche Bundesbank, Monthly Report, October 2010, p 36.
11 For this reason, non-financial corporations generally hold a significant percentage of their assets in liquid form to allow them to continue financing ongoing investment projects in times of credit constraints. See B Holmström and J Tirole (2011), Inside and outside liquidity, Paris, MIT Press.
12 See F Covas and W J Den Haan (2011), The cyclical behavior of debt and equity finance, American Economic Review, 101, pp 877-899; and H Chen (2010), Macroeconomic conditions and the puzzles of credit spreads and capital structure, The Journal of Finance, 65, pp 2171-2212.
13 See R C Koo, Balance sheet recession: Japan's struggle with unchartered economics and its global implications, 2003, Hoboken, John Wiley and Son.
14 By contrast, (groups of) persons who produce for the market without forming a quasi-corporation (sole proprietors, freelancers etc) are attributed to the households sector. For a detailed description of the concept of the financial accounts, see Deutsche Bundesbank, Financial accounts for Germany 2005 – 2010, Special Statistical Publication 4, September 2011.

Financing of non-financial corporations in Germany*



* The areas shaded in grey represent the period between peak and trough as measured by the seasonally and calendar adjusted gross domestic product.

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These underlying data differ from other statistics such as corporate balance sheet statistics.[15] However, one key advantage of this approach is that it looks at the corporate sector in an (internationally) consistent and virtually comprehensive way over the entire period.

Total financing dynamic from 1991 to 2010 …

The financing of German enterprises was characterised by strong momentum in the period from 1991 to 2010. First, progress in information and communication technology and the increasing liberalisation of the international goods and financial markets drove integration and increased competitive pressure. Second, as enterprises' production processes became increasingly international, firms adapted their funding opportunities to the changing economic landscape.

… with large percentage of internal financing

Total financing of non-financial corporations in Germany was on a positive trend between 1991 and 2010 both in nominal and in real terms. While overall financing was still around €280 billion in nominal terms in 1991, a figure of €400 billion was recorded as at end-2010. In line with the theoretical statements on the choice of financing structure, enterprises mainly used internal financing sources. Thus, the percentage of internal financing in total capital raised averaged more than 65% and thereby consistently exceeded external financing in volume terms, except in 1999 and 2000, when the stock market boom triggered an increased issuance of shares in particular.

The importance of internal financing

Depreciation increased constantly and contributed majority of internal financing, …

As part of internal financing, depreciation allowances in the form of liquid funds played a prominent role; their percentage share of internal financing averaged around 85%. The volume of such funds rose almost continuously over time, from just under €120 billion in 1991 to more than €190 billion at the end of 2010. This was largely attributable, first, to the increased capital stock in the corporate sector over this period, which is largely the result of investment in machinery and equipment, and, second, to the method for calculating depreciation.[16]

… while trends in retained earnings were more volatile …

By contrast, retained earnings (including capital transfers) represented only 15% of internal funds on average. As compared to depreci-

15 See Deutsche Bundesbank, Comparability of data from the corporate balance sheet statistics and the national accounts including the financial accounts, Monthly Report, June 2006, pp 58-59.

16 Linear depreciation must generally be used pursuant to ESA 95. Given a growing capital stock, this consequently results in a steadily rising depreciation volume.

ation, they were, moreover, significantly more volatile as they depend on the general earnings situation, which is closely correlated to the business cycle. Since the turn of the century, they have shown a positive trend, however.[17] This can be attributed, amongst other factors, to enterprises' efforts to consolidate their balance sheets. While in the second half of the 1990s German enterprises' leverage ratio rose from some 170% to more than 190% as measured by gross value added, enterprises distributed less of their earnings following the recession in 2001 and increasingly used them to pay down debt.[18] Debt levels stabilised as a result and were lowered to a level of around 170% in the following years from 2002 to 2005. The outcome of these efforts were an improved equity capital position and an increase in internal funds. These developments were promoted by the overall favourable global economic climate over this period and the improvement in the international competitiveness of German enterprises, which was in turn supported by moderate wage increases. However, as the financial and economic crisis intensified, the earnings situation deteriorated again, causing retained earnings to fall sharply in 2008 and 2009. With the economic recovery, they accelerated strongly again in 2010.

… and impacted by change in tax conditions

The trend increase in retained earnings can, moreover, be explained by the business tax reform of 2000. The object of the reform was to give preferential tax treatment to earnings retention as compared to earnings distribution, which led to a bias in favour of internal financing over other forms of financing.[19] Nonetheless, there is some evidence that the renewed changes in corporate taxation in 2008 have tended to increase external financing using debt and thus the leverage ratio because they raise the cost of self-financing and equity financing relative to external financing.[20] The cyclical component in corporate financing currently may still mask this effect.

Corporate sector with financing surplus of late

The almost constant increase in all internal funding opportunities has, for some years, even meant that German enterprises have at their disposal more internal funds than are needed to expand the capital stock. While gross investment rose continuously between 2002 and 2008, it still fell short of the sum of retained earnings and depreciation. Overall, these developments caused surplus funds in the non-financial corporations sector. Looking at the economy as a whole, enterprises, which overall typically act as net borrowers in the economic process, have therefore for several years provided other sectors with funds on a net basis. The main recipients of these funds were German enterprises' foreign affiliates, which covered part of their funding needs using the equity capital provided by their parent companies. German enterprises have increasingly moved parts of the supply chain to eastern Europe, in particular following the eastern enlargement of the European Union, and have provided their foreign affiliates with funds for the purpose of expanding their capital stock.

Developments in external financing

Volume of external financing very dynamic …

In the period under review, external financing had, on average, a smaller role to play in corporate financing than internal financing. It made up roughly one-third of total funds raised per year. Overall, external financing lacked a clear trend; in fact, it exhibited a pronounced cyclical pattern as compared to internal financing. The first cycle covered the years 1997 to 2004. In this period, more external funds were initially raised, peaking at just under €290 billion in 2000. Subsequently, borrowing was curtailed sharply; in 2004, outstanding liabil-

17 The sharp increase in 1995 can be attributed mainly to the assumption of Treuhand agency debt by the Redemption Fund for Inherited Liabilities, which was classified as a transfer of assets from the government to enterprises.
18 In this context, debt refers to the sum of outstanding liabilities minus shares and other equity.
19 See Deutsche Bundesbank, Public finance, Intermediate reflection: "Tax reform 2000", Monthly Report, August 2000, pp 54-61.
20 See German Council of Economic Experts, Annual Report 2007-08, pp 268-287.

ities were even redeemed on a net basis. This cycle was driven mainly by strong borrowing during the New Economy boom (1997-2000).[21] In the following cycle, net inflows peaked at around €175 billion in 2007 and their dynamic subsequently slowed down as the financial and economic crisis intensified. In 2010, they were around €128 billion.

… and reliant on economic developments …

Like internal financing, the extent to which enterprises raised external funds depended primarily on the domestic economic environment. During economic upswings, more external funding was raised, while it tended to be scaled back in recessionary economic phases. This can be explained by declining demand for capital goods as well as, amongst other things, the fact that the external financing premium on external financing instruments is countercyclical. The premium tends to shrink during an economic recovery, because the value of the assets accepted as collateral increases, thus enhancing the attractiveness of external financing as financing costs come down.[22] At the same time, the cyclical development in external financing can also be attributed to credit-supply factors, because the fact that profitability in lending fluctuates with economic activity as well as creditors' equity levels implies cyclical credit growth.[23]

… with a time lag

External financing has generally lagged growth in the real gross domestic product.[24] Possible reasons could be contractual rigidities or precautionary reasons. In the early phases of an economic downturn, enterprises cannot immediately adjust to the changing economic environment, for instance due to payment obligations vis-à-vis suppliers or the need to finance inventories. By contrast, as the economy starts to recover, improved cash flows are probably one reason why external financing is initially expanded only slowly. Moreover, enterprises' expectations regarding the sustainability of the upturn and the associated profitability of investment projects likely play a role.

Further determinants of external financing: institutional factors

Besides the domestic economic situation, structural factors have also influenced external financing over the past 20 years. These include continual efforts to facilitate access to external funds through measures to enhance transparency and the availability of corporate information.[25] Further, the tax changes of 2008 mentioned above have probably also had an impact on the choice of financing. For instance, the individual regulation to limit the deductibility of interest on debt (interest ceiling) is likely, all other things being equal, to tend to restrict the percentage of debt capital in external financing.[26]

Structure of external financing

Structure of external financing also dynamic

The structure of external financing, too, is very dynamic. In the European context, the creation of the single market and the introduction of the euro especially have increased the intensity of competition among external capital providers. This has led to larger and more liquid financial markets as well as to an increased supply of innovative financing instruments. Germany, too, which is traditionally character-

21 This upturn was, moreover, associated with lively M&A activity in the information and telecommunications sector and large funding requirements in connection with the acquisition of UMTS licences.
22 See U von Kalckreuth (2001), Monetary transmission in Germany: new perspectives on financial constraints and investment spending, Deutsche Bundesbank Research Centre, Discussion Paper, Series 1, No 19/2001.
23 See Deutsche Bundesbank, Credit growth, bank capital and economic activity, Monthly Report, March 2005, pp 15-24.
24 See Deutsche Bundesbank, German banks' lending to the domestic private sector since summer 2009, Monthly Report, September 2011, pp 59-78. Moreover, empirical studies suggest that German enterprises adjust to their optimum capital structure with a time lag. See V A Dang (2013), Testing capital structure theories using error correction models: evidence from the UK, France and Germany, Applied Economics, 45, pp 171-190.
25 Examples include the rules on corporate governance introduced in recent years. The objective of the associated Act on Corporate Governance and Transparency (Gesetz zur Kontrolle und Transparenz im Unternehmensbereich, 1998) was to safeguard shareholders' interests.
26 See K Blaufuss and D Lorenz (2009), Wem droht die Zinsschranke? Eine empirische Untersuchung zur Identifikation der Einflussfaktoren, Zeitschrift für Betriebswirtschaft, 79, pp 503-526.

Structure of outstanding liabilities of non-financial corporations in Germany

End-of-year levels

Item	1991	1995	2000	2005	2010
Liabilities in € billion	2,042	2,519	3,891	3,944	4,718
	As a percentage of total liabilities				
Securities other than shares	1.8	2.3	1.4	2.7	3.1
Loans	38.1	35.5	29.3	30.3	31.8
of which					
from MFIs	32.0	28.6	22.7	20.9	18.0
from non-MFIs	6.1	6.9	6.6	9.4	13.8
Insurance technical reserves	5.7	5.6	4.3	5.2	4.8
Other liabilities	24.4	21.1	17.0	17.6	17.8
of which					
Trade credits and advances	17.1	14.8	10.5	11.3	12.1
Shares and other equity	30.0	35.6	48.0	44.1	42.6

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ised by a bank-based financing system, has seen the importance of alternative forms of finance rise significantly in recent years.

The table above shows the outstanding liabilities of non-financial corporations at the end of selected years within the observation period. It should be noted that holdings of securities (in particular shares) are strongly impacted by valuation changes, which limits comparability of the percentages that they contribute to overall liabilities with the remaining data. In the following, the significance of securities is therefore discussed based on transaction volumes, which are not affected by valuation effects.

Waning significance of bank loans and increasing importance of other creditors

Among the various financing instruments, loans were the most important source of finance with an average percentage of just under 33% of total liabilities. The majority of these loans were granted by banks. Over time, the importance of bank loans declined steadily, however, with their share dropping from around 32% in 1991 to 18% in 2010. By contrast, there was a sharp rise in loans from other creditors (including insurers, other financial institutions and other enterprises). Their percentage more than doubled from some 6% in 1991 to just under 14% at the end of 2010. If one considers all the years in the observation period (see chart on page 21), it is clear that banks were substituted by other creditors mainly in the second half of the observation period. Loans from non-banks played an increasingly important role especially in phases in which external financing was reduced (2000 to 2004 and 2007 to 2009).

Market-based financing plays subordinate role

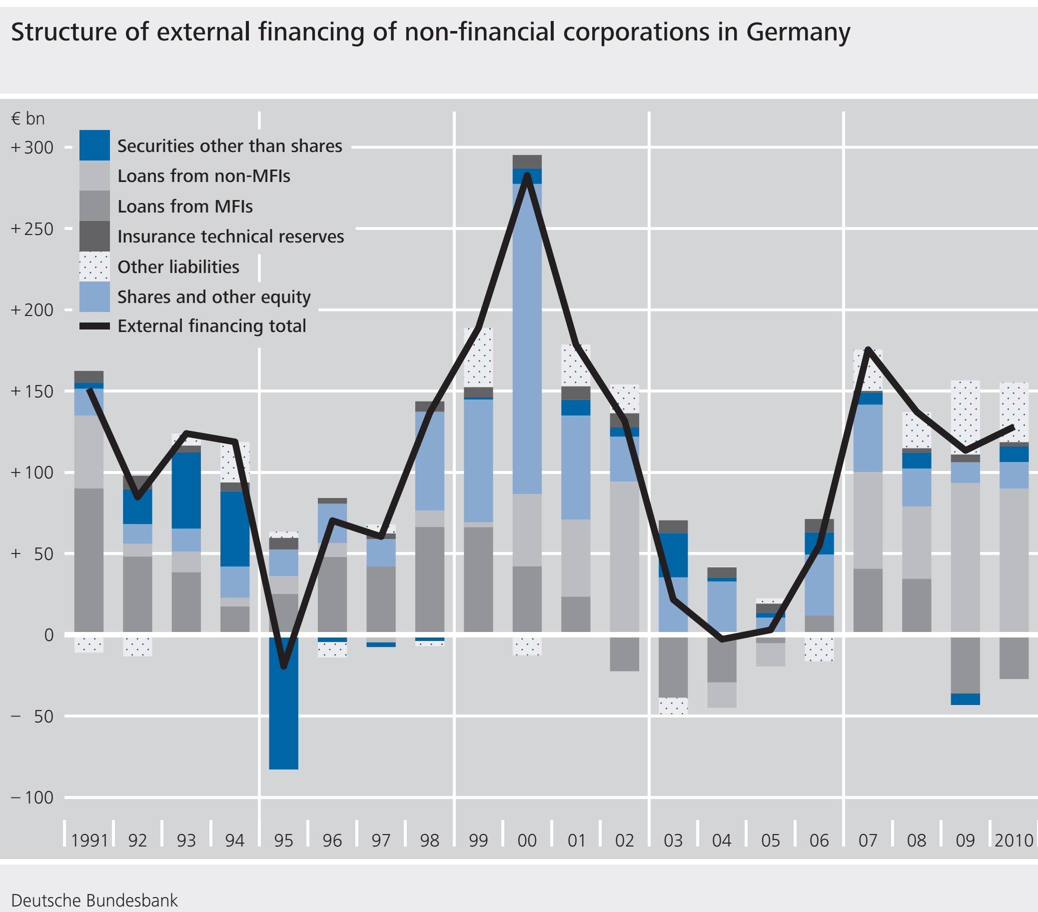
Non-financial corporations made less use of market-based financing instruments. During the period from 1991 to 2010, more funds were, for the most part, raised through loans than through shares and other equity, and other securities. While annual new borrowing in the form of loans averaged just under €50 billion, an average of some €37 billion in shares and other equity and just under €6 billion in securities (other than shares) was issued. Disregarding the sharp expansion of equity issuance around the turn of the century, the average figure for funds raised in this way even drops to less than €30 billion.[27]

Continuous use of trade credits and advances

With just over 5% of overall liabilities, insurance technical reserves played a small role. Meanwhile, other liabilities, mainly trade credits

27 This analysis takes no account of funds that internationally active German groups borrow on foreign capital markets, some of which are, via special financing subsidiaries, made available to parent companies domiciled in Germany in the form of (primarily short-term) loans. See Deutsche Bundesbank, German enterprises' profitability and financing in 2007, Monthly Report, January 2009, pp 42-43.

Structure of external financing of non-financial corporations in Germany



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and advances, represented an important source of finance for German enterprises. Although their share of overall liabilities fell from more than 17% in 1991 to around 12% at the end of 2010, they nonetheless contributed to financing throughout the period under review.

Traditionally, bank loans very important …

In summary, it can be stated that external financing of non-financial corporations in the period from 1991 to 2010 was heavily dominated by loan financing compared with market-based financing. The large importance of credit-based financing overall was initially the result of the traditionally large share of bank loans in total liabilities.

… given large percentage of small and medium-sized enterprises …

This observation can be attributed, amongst others, to how the corporate sector in Germany is structured. Small and medium-sized enterprises (SMEs), which are characteristic of the German corporate landscape, were frequently unable to tap the capital market given their size or legal form.[28] Besides the costs associated with going public, which weigh heavily on SMEs' liquidity, information deficiencies may contribute to a reticent supply of funds.[29] However, banks, too, were keen to maintain long-term business relationships with enterprises, as they needed to cover the high cost of credit monitoring in order to generate positive income across a long credit exposure in an intensely competitive environment.

… with long-term loan relationships with just a few banks

As a result, long-term lending relationships, frequently with just one bank – known as the "house bank" – were the norm. This meant that banks in Germany, in contrast to capital providers with less close business relationships with enterprises, frequently had privileged access to information, enabling them to ad-

28 See F Kaufmann (1997), Besonderheiten der Finanzierung kleiner und mittlerer Unternehmen, Kredit und Kapital, 1, pp 141-155.
29 See W Gerke and M Bank (1999), Finanzierungsprobleme mittelständischer Unternehmen, in Finanzbetrieb, 1, pp 10-20.

Developments in external financing for euro-area non-financial corporations during the global financial and economic crisis

As financial market tensions built up in the third quarter of 2007, leading to the global economic crisis, many – and in some cases, substantial – adjustments were visible in the behaviour of private market participants. Within this context the financing situation of non-financial corporations in Germany is compared with those of other large euro-area countries in the following. This allows us to draw important conclusions concerning the impact of the global financial turmoil on corporate financing in individual countries and on how the corporate sector in each country responded.

The chart on page 23 shows developments in the structure of external financing of non-financial corporations since the first quarter of 2006 for the euro area as a whole as well as for Germany, Spain, France and Italy, based on four-quarter moving sums. External financing is broken down into the following liabilities: securities, short and long-term loans, shares and other equity as well as other liabilities (including, *inter alia*, trade credits and insurance technical reserves). A comparative analysis of developments in internal financing is not possible in this context due to insufficient data availability on the countries selected.

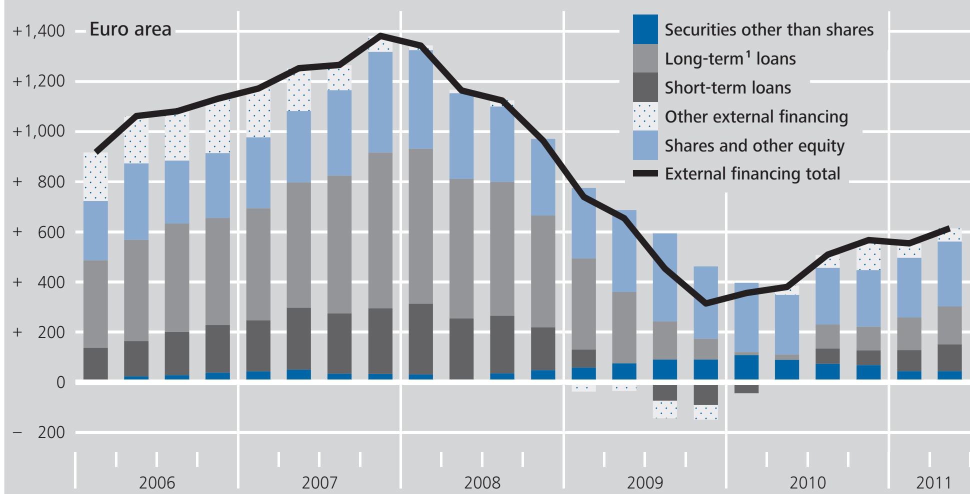
In the euro area, as in Germany, the structure of external financing prior to the financial and economic crisis was characterised by a large proportion of loan financing. The volume of external financing was very dynamic up to the end of 2007. From the first quarter of 2008, however, the volume declined significantly mainly due to subdued dynamics in bank loans. After the collapse of Lehman Brothers, short-term loans in particular came to a virtual halt in the autumn of 2008 and in the subsequent quarters.[1] This development resulted, not least, from stricter credit standards being imposed by the banking system, which also affected small and medium-sized enterprises, making it more difficult for them to access credit. Market-based financing, on the other hand, presented a different picture. Whereas equity financing stayed relatively stable throughout the period under review, there was a noticeable increase in securities-based financing from the first quarter of 2009 onwards. This indicates a substitution of loans by market-based external financing in the euro area. During the crisis, the share of market-based external financing rose considerably as a result.

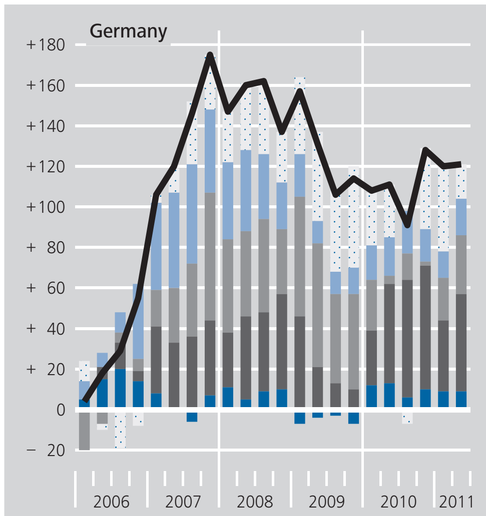
A similar development can also be identified at the country level. In some European neighbouring countries, total external financing fell steeply in the wake of the economic crisis. By comparison, the years before had seen very pronounced financing dynamics amidst strong growth in domestic demand.[2] This effect was especially pronounced in Spain. In the second half of 2009 and the first half of 2010, there was even a net repayment of loans, primarily because of outflows recorded for short-term loans and other liabilities. Long-term

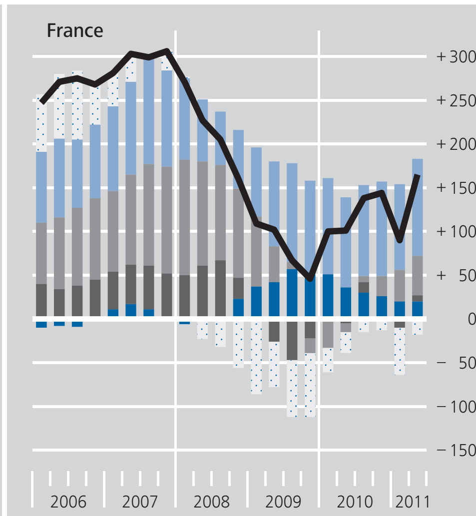
1 See European Central Bank, Cross-Checking and the Flow of Funds (2011), Enhancing Monetary Analysis, L A Papademos and J Stark (eds), Chapter 7, pp 355-478.
2 For information on the economic effects resulting from strong growth in demand, rising prices and the erosion of price competitiveness in a number of euro-area countries in the run-up to the financial and economic crisis, see Deutsche Bundesbank, On the problems of macroeconomic imbalances in the euro area, Monthly Report, July 2010, pp 17-38.

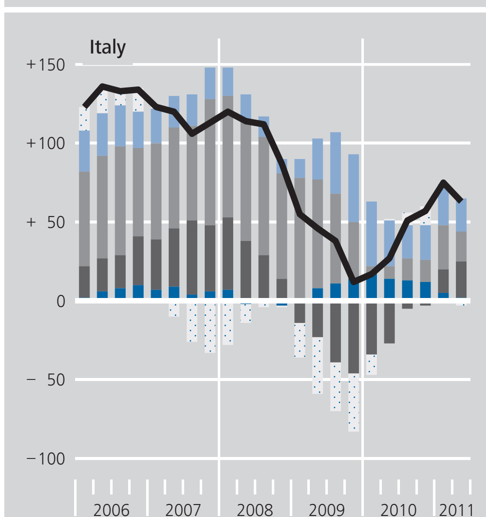
Structure of external financing of non-financial corporations in selected euro-area countries

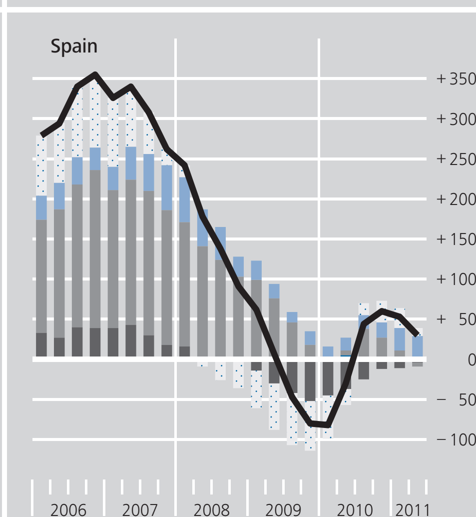
€ bn, moving sums of the last four quarters











Source: ECB. **1** Long term: > 1 year.
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loans to non-financial corporations likewise dropped considerably. This decline was likely due in part to tensions in the Spanish banking sector (above all in the savings bank sector). Combined with the continuing consolidation process in Spain's banking sector and the reduction of household debt on the one hand, and the high savings ratio and households' low consumption on the other, these developments led to subdued investment and borrowing activity right up to recent quarters.

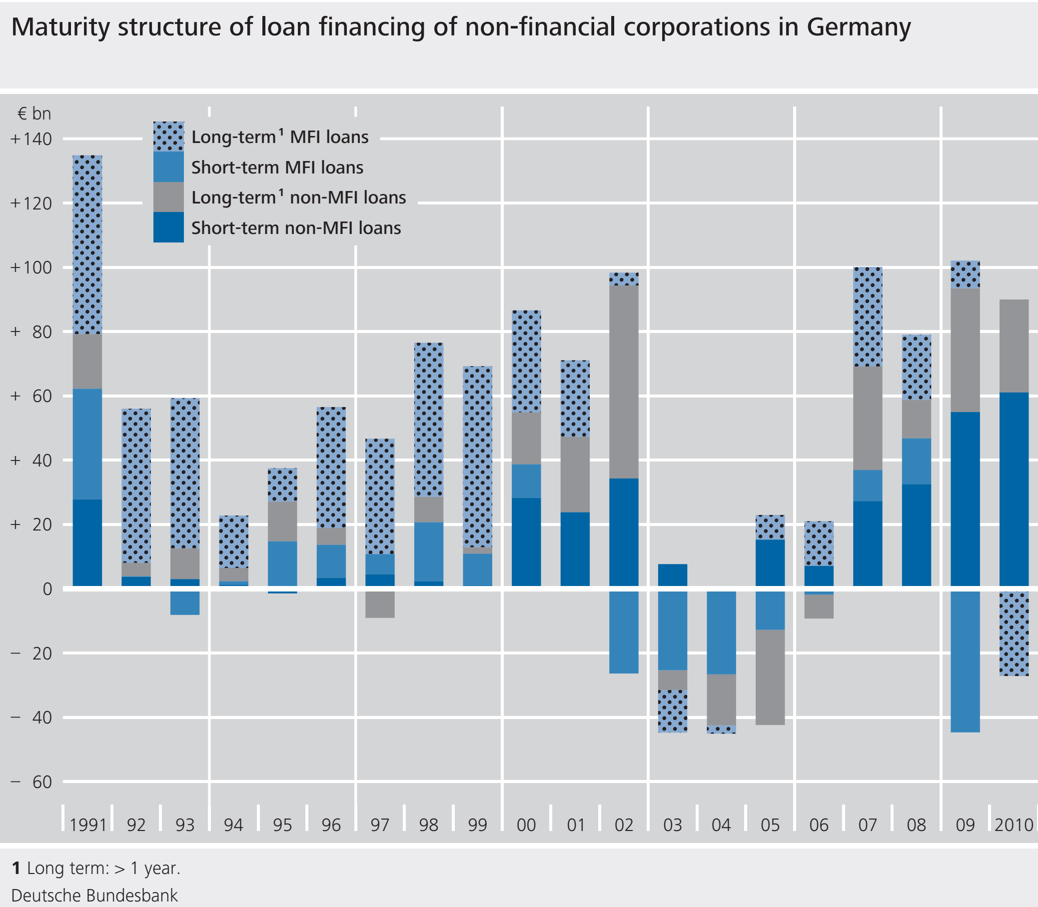
In France and Italy, too, loan financing made a negative contribution to external financing during the crisis quarters. In contrast to Spain, however, the corporate sector in these countries was able, to an extent, to switch to alternative market-based forms of financing. This is because the imbalances that were built up prior to the financial and economic crisis were not as substantial as in Spain, which probably resulted in lower quantitative restrictions in terms of access to financing.[3] Thus, the transaction volume in securities financing expanded while, at the same time, equity-based financing and the injection of other funds into equity displayed robust growth. Despite a slight rise in inflows via external financing since the first quarter of 2010, total external financing in both countries has fallen short of figures recorded in the pre-crisis quarters.

A mixed picture emerges in Germany with regard to external financing. This is due, first, to the fact that the decrease was much less pronounced in Germany than in the euro area and the member countries under review. Although the overall financing volume contracted slightly in the second quarter of 2009, it stabilised from then onwards. Second, compared with the other countries, Germany experienced a fairly stable inflow of funds via loan financing in particular, although bank loans were substituted to a great extent by financing through intra-group loans. At the same time, there was an increase in financing through other liabilities including, *inter alia*, trade credits and advances – although these are less significant in quantitative terms. The drop in short-term loans in the crisis quarters, ie the second quarter of 2009 to the first quarter of 2010, was probably partly attributable to bank-related factors.[4] By comparison, market-based external financing played a far less important role than it did in the other member states under review, and indeed in the euro area as a whole.

The adjustments in corporate financing clearly show that the financial market turmoil and the existence of country-specific financial frictions and structural factors led to different responses with regard to external financing; these depended, *inter alia*, on the extent to which imbalances had previously built up in each individual country. From a monetary policy perspective, an analysis of these developments is important as it sheds light on how monetary policy measures affect country-specific financing structure and, therefore, the monetary transmission. From an economic policy perspective, country-specific developments are important, as possible differences at the individual country level may signal a need for adjustment.

3 International studies indicate that the substitution of bank-based by market-based forms of financing during the occurrence of financial crises is a typical pattern in the development of external financing in industrial countries. See E P Davis and M R Stone (2004), Corporate financial structure and financial stability, Journal of Financial Stability, 1, pp 65-91.
4 See B Blaes, Bank-related loan supply factors during the crisis: an analysis based on the German bank lending survey, Discussion Paper, Deutsche Bundesbank Research Centre, Series 1, No 31/2011.

Maturity structure of loan financing of non-financial corporations in Germany



1 Long term: > 1 year.
Deutsche Bundesbank

equately assess the enterprise's economic situation and development potential. This also had a positive effect on enterprises' financing costs.

Incipient shift in external financing over the past ten years …

As competition on the financial markets has intensified and in view of globally active enterprises' international focus, an incipient shift in corporate financing has been observed over the past ten years. Since the turn of the century, bank loans have increasingly been replaced by lending within the corporate sector. During the periods of economic weakness in the years 2001-03 and 2008-09 especially, this credit component gained in importance, while there was even a net repayment of bank loans as external financing was reduced. This process was driven by factors attributable to developments both in the corporate sector and in the banking system.

… with sharp increase in intra-sector lending …

Globalisation has led to an increased formation of large international enterprises, which conduct centralised liquidity and finance management within the group. In this respect, intragroup financing vehicles provide funds. One characteristic is that liquidity positions within the group are pooled, with liquidity distributed and netted across group enterprises as required. As part of the group-wide objective of increasing profitability, this cash pooling can reduce interest payments and thus financing costs at group level.[30] Individual group members need not resort to comparatively expensive forms of financing provided by third parties, while other subsidiaries need not invest their excess liquidity at relatively unfavourable terms and conditions. The financing vehicle exploits the creditworthiness of the group as a whole to resolve any financing bottlenecks or

30 See C Billek, Cash Pooling im Konzern, 2009, Springer, Vienna.

invest surplus liquidity profitably.[31] Such a strategy – albeit currently only open to enterprises of a certain minimum size – allows increasing independence from external creditors and lowers the risk of restricted access to funds for the individual group members. In addition, the growing number of international interlinkages means that enterprises are increasingly also seeking loans from foreign banks. Annual new bank loans from abroad almost doubled in the second half of the period under observation.

… in a changed banking environment

Bank-related factors are also likely to have contributed to the shift in corporate financing. It cannot be ruled out, for instance, that the temporary tightening of credit standards in the last two downturns and rising regulatory requirements under the Basel Agreement have prompted enterprises to turn to alternative forms of financing. This development was promoted by the existence of the cash pools outlined above. At the same time, the intensity of global competition in the intermediation sector and the above-mentioned international focus of potential borrowers are likely to have aggravated the already high margin pressure in credit business, prompting large, capital-market focused banks, in particular, to extend their business activities to include commission business and investment banking.

Higher percentage of short-term loans

Finally, bank loans' reduced significance is also evident in the maturity structure (see chart on page 25). While the vast majority of funding was based on long-term bank loans during the 1990s, the increase in loans from non-banks, notably loans from other enterprises, was associated with shorter loan lives. At the same time, it can be seen that cutbacks mainly affected short-term bank loans during economic downturns. This is probably because large enterprises resorted less to the use of bank credit lines, instead primarily using short-term funding within the group.

Conclusions and outlook

Corporate financing has undergone significant changes

The way in which enterprises in Germany finance themselves underwent considerable changes over the 20-year observation period. Internal funds were generally more important than external funds, their volume rising continuously throughout, but nonetheless displayed a certain cyclicality in terms of retained earnings, which can mainly be attributed to economic developments. By contrast, developments in external financing were much more volatile than those in internal financing. This, too, can be attributed chiefly to cyclical factors. The ratio between internal and external financing therefore fluctuated sharply over time.

Loans with changed creditor structure …

With just a few exceptions, loans consistently played the most important role within external financing. While in the past, banks were the main lenders, they tended increasingly to be substituted in favour of other creditors, including affiliated enterprises, in the period under review. Especially during economic downturns, enterprises resorted to this form of financing and thus reinforced the trend.

… partly because of the ongoing integration of the markets

This structural shift reflects the ongoing integration of the goods and capital markets and the associated internationalisation of – financial and non-financial – (large) corporations. It could, however, also be related to (bank) supply-side factors which, in the form of stricter credit standards during economic downturns, rising regulatory requirements and growth of commission business, helped enhance the relevance of alternative sources of funding. As a

31 In this context, the argument can be made that the increasing significance of the shadow banking system can be attributed, amongst others, to the existence of these international cash pools. In order to diversify, these institutions do not invest their short-term liquidity surplus only in bank deposits, trying instead to use market-based forms of short-term investment (for instance money market funds). Demand from cash pools for short-term investment opportunities is, moreover, an attractive refinancing alternative for the other financial intermediaries (eg special purpose vehicles), in particular in the context of securitisation. See Z Poszar (2011), Institutional Cash Pools and the Triffin Dilemma of the U.S. Banking System, Working Paper No 190, International Monetary Fund.

result, the significance of bank loans, which still represent the single most important source of external financing, waned considerably over the observation period. Overall, intermediation services through traditional credit business therefore declined.

Importance of market-based financing still low

By contrast, the percentage of market-based external financing has remained virtually unchanged since 1991. Disregarding the temporarily enormous volume of funds raised during the New Economy boom towards the end of the 1990s, this form of funding continues to play a less important role, also by European standards.