Developments in lending to the German private sector during the global financial crisis

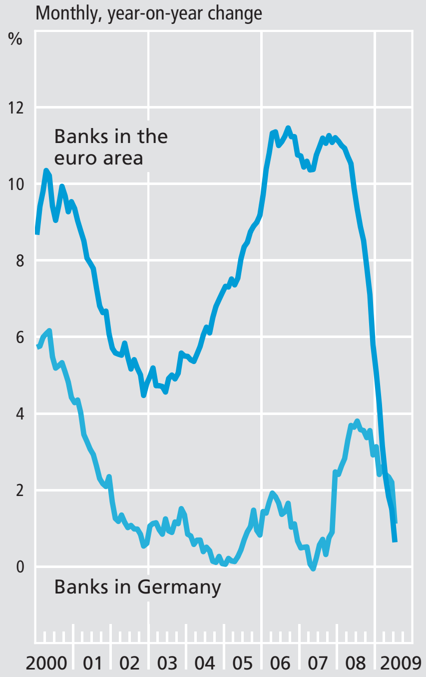
Domestic banks' lending business with the German private sector has slowed down significantly since the third quarter of 2008. This is especially true of loans to non-financial corporations, which have been on the decline since the beginning of the year. Against the backdrop of the financial crisis, this has fuelled fears of a credit crunch. The main concern in this context is that such credit constraints might either markedly exacerbate the economic downturn or hamper a nascent real economic recovery.

On the whole, consideration of a wide set of indicators does not at present provide clear-cut evidence that Germany has already begun to experience a credit crunch. The slowdown in lending to non-financial corporations can be readily explained by traditional factors, notably by the sluggish real economic activity.

Looking ahead, however, it is possible that, in the early stage of the nascent, gradual economic recovery process in Germany, bank credit supply might fall short of corporate borrowing needs, which could hinder the upturn. As things stand today, however, although there is a risk of such a development, it is not the likeliest scenario.

Loans to domestic enterprises and households

Monthly, year-on-year change



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Recent trends in loans by German banks to the public sector in Germany

Growth of credit to domestic private sector has weakened significantly since mid-2008, ...

The annual growth rate of loans to the domestic private sector in Germany fell by 2.7 percentage points to 1.1% between July 2008 and July 2009. This pronounced weakening is closely linked to the global financial and economic crisis, and is particularly significant because in Germany the domestic bank loan is a key source of external finance for enterprises and households. According to financial account figures, it currently accounts for roughly two-fifths of German non-financial corporations' debt. What is more, households are indebted almost exclusively to domestic banks.

... by comparison over time ...

The current credit growth rate is not exceptionally high when compared over time. In fact, it is identical to the average annual growth rate from 2002 to the current end. During this period, the growth of credit to the German private sector was characterised by some pronounced fluctuations, and even stagnated at times.[1] Similar upward and downward movements have also been witnessed more recently. The annual growth rate of lending to the German private sector rose strongly from -0.1% in May 2007 to 3.8% in July 2008, whereas lending dynamics have gone back down sharply since the third quarter of 2008.

... though not exceptionally low compared with the euro area

Growth of credit to the private sector has also contracted strongly in the rest of the euro area. However, this decline – excluding the trend in Germany – already began at the end of 2007. Since then, the 12-month rate for the euro area has receded markedly and currently stands at only 0.6% (or 0.4% without Germany). Unlike in Germany, however, the decline in euro-area lending began from a much higher level of growth. Due to the sharp increase in real estate and corporate loans, year-on-year growth in loans to the private sector in the euro area stood at double digits every month from the beginning of 2006 to the middle of 2008. For this reason, the latest slump in lending was even more pronounced in the euro area as a whole than in Germany.

1 See Deutsche Bundesbank, Recent developments in German banks' lending to domestic enterprises and households, Monthly Report, July 2006, pp 13-28.

Slowdown in lending driven by non-financial corporations, ...

The striking drop in lending to the German private sector since the third quarter of 2008 has been driven by a very heterogeneous development in terms of the borrowers, the key factor being loans to non-financial corporations. After these loans had risen significantly during the economic upturn in Germany starting from early 2006 onwards, the 12-month rate fell sharply from 8.5% in June 2008 to 1.2% in July 2009. The volume of loans to non-financial corporations has declined since February of this year.

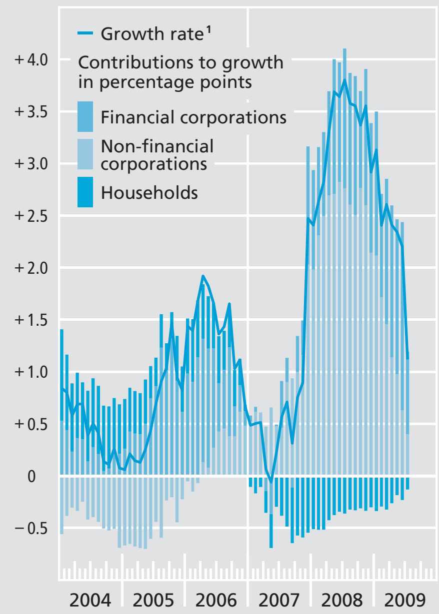
... but not by loans to financial enterprises ...

Loans to non-monetary financial institutions such as, for example, insurers and pension funds present a different picture. Together with loans to non-financial corporations, they drove the rise in the growth of loans to the domestic private sector between mid-2007 and mid-2008. Yet unlike lending to the non-financial sector, they subsequently continued to grow dynamically. One factor may be bank loans to special purpose vehicles, whose other refinancing options had deteriorated dramatically as a result of the financial crisis. Another more important factor, however, is that reverse repo transactions led increasingly to extensive short-term lending by the banking system to a domestic financial service provider outside the banking system which for statistical purposes is classified as a non-monetary financial institution.[2]

... or to households

Nor is the household sector responsible for the current slowdown in lending. The contribution accounted for by loans to households to growth of total unsecuritised lending has been declining since January 2007. Whereas consumer and other loans initially drove the reduction in lending to households, since the beginning of 2008 the trend in lending to the household sector has been shaped by loans for house purchase. On balance, the negative growth has even weakened in recent months, and the other loans to households have again posted faintly positive year-on-year growth rates since February of this year.

German banks' loans by selected sectors



1 Year-on-year percentage change.

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2 Reverse repo transactions reflect domestic banks' securitised lending to other market players (mostly domestic banks, but also foreign institutions and the German Finance Agency), which are settled via an electronic trading platform provided by this financial service provider in its function as central counterparty. The strong rise in the volumes of these transactions since the third quarter of 2007 is due to the fact that the collateralisation of loans to other financial market players and the settlement of these transactions via a central counterparty became considerably more attractive in light of the financial crisis.

Loans to non-financial corporations in Germany by banking group

Year-on-year percentage change, end-of-period data

	Big banks	Regional and other commercial banks	Landesbanken	Savings banks	Credit cooperatives	Mortgage banks	Other banks
2000	2.15	7.89	7.91	8.27	5.13	6.89	6.17
2001	– 3.56	4.25	5.76	6.40	2.73	3.04	3.44
2002	– 10.03	2.64	0.89	1.48	– 0.56	0.02	– 4.90
2003	– 13.58	– 3.71	– 2.06	– 1.51	– 2.84	4.80	– 1.92
2004	– 10.48	0.46	– 2.52	– 1.40	– 0.98	– 2.48	– 3.80
2005	– 6.98	– 3.86	– 1.89	– 1.12	– 1.87	2.13	3.33
2006	0.33	2.38	2.71	0.69	3.96	– 4.21	0.02
2007	5.47	9.05	5.81	5.16	7.52	– 1.24	8.44
2008 Q1	7.96	12.50	6.26	6.99	7.63	– 2.61	11.43
Q2	11.00	13.44	7.14	7.89	6.94	– 1.26	11.31
Q3	8.23	13.67	6.73	8.92	8.41	– 0.31	7.64
Q4	4.84	11.72	7.19	8.43	7.45	– 2.05	8.33
2009 Q1	6.20	5.09	6.30	7.82	7.38	– 1.84	0.17
April	2.40	4.96	5.73	7.21	8.06	– 2.72	– 0.78
May	1.43	3.66	4.70	7.13	7.70	– 3.21	– 1.18
June	– 0.59	2.38	2.95	6.67	7.43	– 4.15	– 1.49
July	0.08	– 0.12	1.96	5.77	7.01	– 3.49	– 2.67

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Trend in loans to non-financial corporations since the third quarter of 2008

Weaker credit supply, notably ...

Thus, the deceleration in domestic credit growth to the private sector was driven mainly by loans to non-financial corporations. However, this development did not affect all banking groups, business sectors or maturities in equal measure.

... by banking groups hit hard by the financial crisis, ...

Growth in lending to non-financial corporations, especially by those banking groups that were hit particularly hard by the global financial crisis, has declined sharply. In July 2009, the annual growth rate in big banks' loans to non-financial corporations stood at 0.1%, representing a drop of 7.9 percentage points compared with July 2008.[3] The rate for loans by regional and other commercial banks[4] was down by 14.3 percentage points to -0.1%, and loans from Landesbanken were down by 5.1 percentage points to 2.0%. Following a brief spell in positive territory in the fourth quarter of 2008, the annual percentage change in lending by mortgage banks, which had been consistently reducing their loans to non-financial corporations since mid-2006, had also clearly returned to the negative zone.

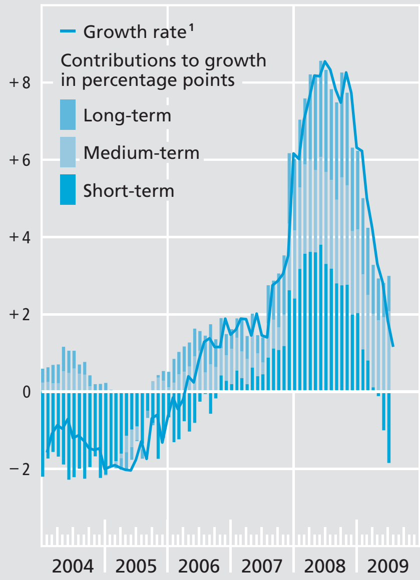
3 The data on lending growth by banking group and business sector contain neither valuation adjustments for receivables nor corrections for exchange-related changes to total loans in the case of foreign currency-denominated loans to domestic borrowers.
4 Although the regional and other commercial banks, unlike the other banking groups mentioned here, posted a profit before taxes for 2008, the annual results for this particular banking group also fell sharply. See Deutsche Bundesbank, The performance of German credit institutions in 2008, Monthly Report, September 2009, pp 33-62.

This contrasts in particular with loans by credit cooperatives, whose annual growth rate in July 2009 was almost constant at 7.0%. The savings banks, too, considerably expanded their credit to non-financial corporations by an annual rate of 5.8%, although the growth rate was 2.3 percentage points down on the year. As a result, the savings banks and the credit cooperatives have slightly increased their shares in the domestic market in this segment since the third quarter of 2008.

... to export-heavy sectors ...

If one considers the business sectors individually, in June 2009[5] loans to enterprises and self-employed persons in Germany showed a positive annual rate of change for almost all sectors, with the exception of wholesale and retail trade and the (statistically quite broadly defined) services sector. However, the annual growth rate for all economic sectors as a whole has contracted markedly since the fourth quarter of 2008. This trend has been driven not only by wholesale and retail trade (including the repair of motor vehicles) and the services sector but most notably by manufacturing and, to a lesser extent, by transport and communication. In the more export-heavy manufacturing sector, credit growth was weaker in almost all sub-groups. Particularly sharp declines in the annual growth rate were recorded in the manufacture of basic metals, mechanical engineering and the manufacture of transport equipment, all of which are key sectors of the German economy, even though the annual growth rates still remained at a higher level. In a number of other, primarily domestically oriented sectors, by contrast, growth rates remained high or

German banks' loans to non-financial corporations by maturity



1 Year-on-year percentage change.

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even rose further. This is true of electricity, gas and water supply as well as construction, which has also benefited from the Federal Government's two economic stimulus packages.

... and with respect to short-term loans

The deceleration of growth in loans to non-financial corporations since the third quarter of 2008 affected all statistically recorded maturities, albeit to varying extents. The decline in the annual growth rate is especially pronounced for short-term loans (up to 1 year), which plummeted by 23.3 percentage points to -8.1% in July 2009 compared with July 2008. The marked drop in lending to non-financial corporations, then, is due primarily to an accelerated scaling-back of short-term loans, which is usual in periods of recession.

5 Credit data disaggregated by sector are only available in quarterly form.

This was observed in all banking groups, although it was particularly strong among the big banks, Landesbanken and mortgage banks.

Does the deceleration of credit growth since the third quarter of 2008 mean a credit crunch?

No generally accepted definition of a credit crunch

Given the fall in credit growth and the burdens on banks due to the current financial crisis, the fear increasingly expressed in public debate is that the German economy is experiencing a "credit crunch". Yet there is no generally accepted definition of this expression; there only appears to be general agreement that a credit crunch is characterised by a perceptibly constrained credit supply. Definitions used in economic literature and public debate differ, for instance, with regard to whether and to what extent the term "credit crunch" refers only to credit constraints that are due to certain factors or that have certain effects. In the following, "credit crunch" will be taken to mean a quantitative restriction on credit supply so great as to constitute a major economic risk.

In times of weak economic activity, credit demand decreases, ...

The core problem in seeking to identify a specific credit crunch empirically lies in the difficulty of isolating with sufficient precision the supply and demand-side factors of loan development. For example, credit demand tends to decline in a period of weak economic activity. Households' propensity to purchase consumer durables or real estate decreases – for example, because of the negative impact on income prospects. In addition, enterprises have to finance a lower volume of working capital, and planned investment in machinery and equipment grows increasingly unattractive.[6]

... as does credit supply

At the same time, the credit supply is cut back in a recession as the probability of default rises. Banks demand compensation for the heightened risk by adding a higher risk premium to the lending rate and by imposing stricter requirements on borrowers with regard, say, to collateral. Normally, however, the resultant decline in lending is merely a reflection of real economic activity, and is necessary both microeconomically and macroeconomically in that it helps to keep macroeconomic risks low and prevents fundamentally non-justified developments which could lead, in the longer term, to macroeconomic imbalances. Thus, it is important in the interest of efficient capital allocation.[7] This relationship holds true not only in an economic downturn. In an upturn, the general risk situation improves, which, taken by itself, increases credit supply. This gives the real economy access to funds that may be needed to boost economic activity. This has the effect of reducing the danger that the upswing

6 One likely result of the downturn in economic activity is that enterprises' ability to finance operations out of current profits is reduced and they have temporarily higher borrowing needs until they can sufficiently cut back their current expenditure (cash flow effect). However, the resultant rise in corporate demand for loans is likely to be short-lived, as enterprises will adjust their expenditure sooner or later.
7 There is a danger, however, that banks will be too pessimistic about the actual risk situation and overly constrain their credit supply. See C Borio and H Zhu (2008), Capital regulation, risk-taking and monetary policy: a missing link in the transmission mechanism? BIS Working Papers No 268.

could be delayed or even prevented by credit constraints.

Bank-imposed credit constraints entail the risk ...

Besides these real economic factors which influence credit supply, a prominent role is also played – in the present context of the financial crisis – by bank-related factors such as funding availability or the respective bank's capital base. The massive refinancing problems banks have experienced as a result of the global financial crisis entail a risk of negative repercussions for their lending activity. This is particularly true of those institutions which, in light of a small deposit base, financed themselves through the financial markets on a large scale, and also of those institutions which resorted to securitising their own assets to obtain funds, because the interbank loans and structured financial instruments which are central to such transactions were affected to a particular extent by the general loss of confidence sparked by the financial crisis. Moreover, the crisis-induced losses in lending business could cause the banks to retrench new lending activity because they want to or have to strengthen their capital base.

... of weakening real economic growth

A cut in credit supply due to constraints imposed by banks during a financial crisis must be judged differently in macroeconomic terms than a decline in credit supply due to the deterioration of the would-be borrowers' creditworthiness. This is because such additional credit supply restrictions which are linked to the financial crisis currently harbour the danger of further weakening real economic growth by aggravating the banks' situation still further – for example, due to a further rise in defaults and write-downs – and thus causing banks to curb their credit supply even more.

Statistical and methodological problems in identifying a credit crunch

Identifying a credit crunch empirically is difficult

To identify a credit crunch, therefore, it is necessary to show that a substantial part – observable only *ex post* – of the macroeconomic slowdown in credit growth is due to a restriction on the supply of credit, the extent of which markedly exceeds the usual pattern and the causes of which are to be found in the financial or banking sector. A decline in credit supply which adequately reflects only the usual influencing factors, notably real economic growth, would therefore not substantiate the diagnosis of a credit crunch.

Analysis of a wide range of indicators

In practice, the empirical identification of a credit crunch is exceedingly difficult. Observable quantitative lending growth is always the result of movements both in the supply of and the demand for credit, which is to say it does not, in and of itself, allow conclusions to be drawn about the existence of supply-side restrictions. Nor does credit growth on its own indicate the extent to which it has been dampened by restrictions imposed by the banks. For this reason it is essential, when seeking to diagnose a credit crunch, to use a wide range of information in order to reduce the danger of overlooking relevant facts and drawing false conclusions. Given the particular importance of non-financial corporations for economic development and the observed substantial reduction in credit supply to this sector, it will be at the focus of the following section of this report.

Development in aggregated loans to non-financial corporations

Most recent slowdown in lending not exceptionally strong by historical standards

A simple historical comparison offers a first opportunity to put current credit growth into perspective. The decline, observed since the third quarter of 2008, in the annual growth rate of loans by German banks to non-financial corporations has so far not been fundamentally different from previous years' figures. Although the 12-month rate has now reached the relatively low level of pre-financial crisis years, at currently 1.2% it is still in positive territory and a long way from its low of -2.0% in the second quarter of 2005. Although the decline in the growth rate of loans to non-financial corporations since October 2008 has been faster than in the 2001-2003 period of cyclical weakness, this could be the result of the unusually severe slump in overall economic activity in the fourth quarter of 2008 and the first quarter of 2009.

Econometric estimation points to strong influence by real sector

Econometric estimations are one way of measuring the real sector's influence on lending trends. Single-equation estimation of quarterly growth in loans to non-financial corporations shows that real GDP and the ratio of investment in machinery and equipment, together with the interest rate spread between corporate and government bonds, has, as a measure of risk, strong explanatory power for the estimation period from the first quarter of 1991 to the second quarter of 2009. This applies in particular to the current end of the data.[8] The present credit growth is largely explained by real economic growth and the interest rate spread. The estimation therefore leaves no room for any further, bank-imposed credit constraints. However, some caution is called for when subscribing to this interpretation, since it is possible that the relationship expressed in the estimation equation between real economic growth and credit growth not only covers the determinants of lending activity but also reflects the impact of lending trends on real economic growth, giving rise to a simultaneity problem. Regardless of this problem, however, the estimation offers no indication of any significant structural change in the relationship between credit growth and real economic growth at the current end. In terms of traditional determinants, therefore, the actual lending trend has not been exceptional.

Disaggregated analysis of credit growth

Reduction of short-term loans reflects demand-side aspects in particular

The idea that the economic downturn and the higher macroeconomic risks offer a good explanation for the recent slowdown in credit growth is supported by a credit growth analysis broken down by maturity. The stronger reduction in particular of short-term loans to non-financial corporations points to a cyclical decline in corporate financing needs for current assets that is likely to be related, not least, to a considerable contraction of manufacturing output. Moreover, earnings considerations could have encouraged companies

8 The Chow forecast test (CFT) does not reject the hypothesis that the parameters are stable over the entire estimation period (CFT (p-value): 0.23). This indicates that there is no structural break in the estimation.

Econometric estimation equation for the development of loans to non-financial corporations in Germany

The following variables shall serve as determinants of the real development of loans to non-financial corporations *(L)*: real gross domestic product *(GDPR)* as a measure of overall economic activity, the ratio of investment in machinery and equipment to GDP *(I/GDP)* as an approximation of the need for debt finance, and the yield spread between corporate and government bonds *(S)* as a measure of macroeconomic risk.[1] Potential adjustment delays are taken into account by including lagged variables, so that

$$\Delta \log L_t = a_0 + a_1 \cdot \Delta \log L_{t-1} + a_2 \cdot \Delta \log GDPR_t + a_3 \cdot \Delta \log GDPR_{t-1} + a_4 \cdot (I/GDP)_t + a_5 \cdot S_{t-2} + u_t$$

The estimation is performed using seasonally adjusted quarterly data for the period between 1991 Q1 and 2009 Q2. The real growth rate of loans, $\Delta \log L_{t-1}$, as well as the real GDP growth rate, $\Delta \log GDPR_t$, are calculated as quarter-on-quarter percentage changes (deflated with the GDP deflator). The investment ratio, $(I/GDP)_t$, is defined as the ratio of nominal investment in machinery and equipment to nominal GDP. The yield spread is the calculated difference between the interest rates on corporate bonds and government bonds.

Determinants of real growth of loans to non-financial corporations in Germany 2)

1991 Q1–2009 Q2

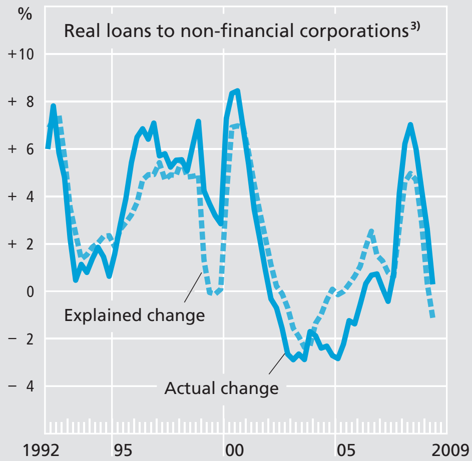
Variable	Loans to non-financial corporations
$\Delta \log L_{t-1}$	0.49 (0.10)***
$\Delta \log GDPR_t$	0.25 (0.09)***
$\Delta \log GDPR_{t-1}$	– 0.06 (0.09)
$(I/GDP)_t$	0.26 (0.12)**
S_{t-2}	– 0.34 (0.15)**
R^2	0.59
LM(1)	0.41
RESET	0.95

The estimated coefficients of the explanatory variables all show the expected sign and are, with the exception of the first lag in the real GDP growth rate, statistically significant. Loan growth is a positive function of real GDP growth and of the ratio of investment in machinery and equipment and a negative function of the yield spread. The negative correlation between the yield spread and credit growth can be traced to two relationships. First, a larger yield spread implies generally higher credit costs for borrowers, which has a dampening effect on loan demand. Second, the increased credit risk reflected in higher yield spreads leads to more subdued lending by banks.

The explanatory power of the estimation equation is comparatively high. In addition, the designated test statistics have not detected any misspecification in the model. Nonetheless, the estimation results are inherently subject to uncertainty.

Loan growth explained by the estimation equation and actual loan growth

Annualised quarter-on-quarter change



1 For a similar approach, see Deutsche Bundesbank, Recent developments in German banks' lending to domestic enterprises and households, Monthly Report, July 2006, p 13. — 2 ***, ** indicates significance at the 1% and 5% levels respectively. LM(1) test for serial correlation (p-value). RESET denotes Ramsey's Regression Specification Error Test (p-value). — 3 Adjusted for changes in purchasing power.

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to replace part of their short-term loans with medium and long-term loans in order to take advantage of the lower capital market rates. Another factor is that non-financial corporations are likely at present to be more interested in longer-term credit if they are concerned that credit availability might be constrained in the near future. By contrast, at the moment, banks are likely – out of risk and earnings considerations – to be more interested in shorter-dated loans. However, this is not reflected in the present shift in the maturity structure towards longer-term loans. Thus, the development of the maturity structure of loans to non-financial corporations tends in and of itself to indicate a dominance of demand-related factors.

Observation that slowdown in lending occurred primarily among severely hit banking groups ...

However, one argument in support of the assertion that, besides macroeconomic factors, bank-related determinants are also constraining credit supply could be that there was a significant slowdown in credit growth as a whole among those banking groups which have been hit especially hard by the financial crisis. By contrast, savings banks and credit cooperatives continue to report an increase in loans to non-financial corporations in Germany, albeit with a downward trend. This is undoubtedly an indication that neither of these banking groups has so far experienced any substantial shortages of liquidity or capital, whether because their business focus gives them a large share of deposit business – meaning they did not have to resort to massive funding on the interbank market to such an extent as other banking groups – or because their own, as a rule, somewhat more conservative asset management practices initially shielded them from substantial direct losses as a result of the global financial crisis. In this way, the savings banks and credit cooperatives, which are engaged primarily in retail banking, were able last year to continue posting positive, though in some cases clearly diminished, pre-tax results in 2008.[9]

... is no clear-cut indication of credit supply effects

Nor, however, may this trend in lending, which is heterogeneous within the banking industry, be overinterpreted as a possible indication of banks imposing credit constraints. In particular, demand for credit could have developed unevenly among the different banking groups, and loan seekers that were possibly rejected by banking groups with tighter credit standards or conditions could have received loans from others.

Development of lending conditions and lending rates

Considerably tighter lending standards since 2007 Q4 ...

Survey results might also indicate the possible existence of a credit crunch. According to Bank Lending Survey (BLS) data, since the financial market turbulence began in the third quarter of 2007 – and above all since the third quarter of 2008 – the German banks surveyed have in some cases tightened their credit standards considerably.[10] According to the last survey round, the surveyed institutions stated that, on balance, they had tightened their credit standards only somewhat in the second quarter of 2009, and the

9 See Deutsche Bundesbank, The performance of German credit institutions in 2008, loc cit.
10 For information on the explanatory content of the BLS for developments in lending to non-financial corporations, see also: Deutsche Bundesbank, Bank Lending Survey: an interim assessment and current developments, Monthly Report, January 2009, pp 15-30.

quarter-on-quarter decline in the number of banks that tightened their credit standards was the strongest since the BLS was launched in 2003.

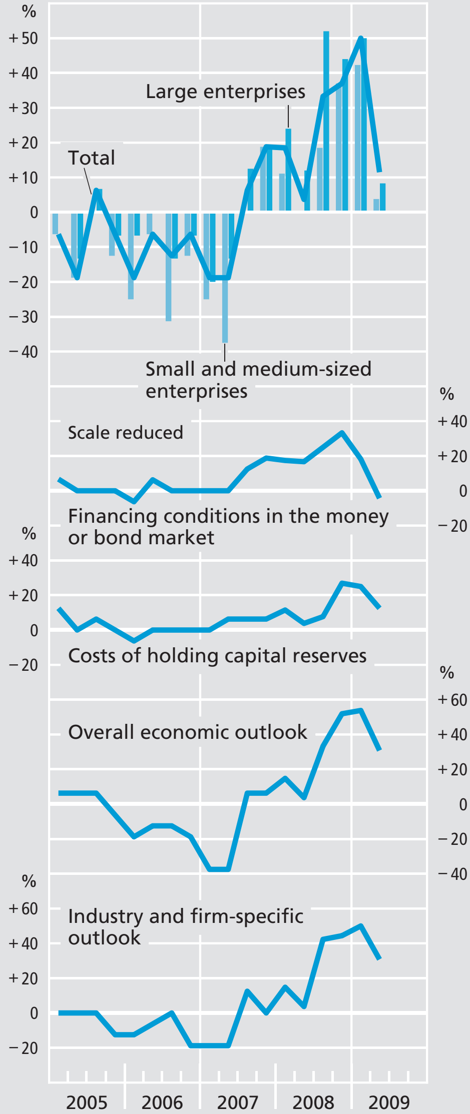
... initially related mainly with the financial crisis, ...

For the question as to the possible existence of a credit crunch, however, the data on the different determinants of these, on the whole, tighter credit standards are especially important.[11] Factors affecting the banks – for instance, higher cost of funds and balance sheet constraints, which in the BLS are broken down into "costs of holding capital reserves", "banks' financing conditions in the money or bond markets" and "banks' liquidity position" – played a major part in the tightening of standards for lending to non-financial corporations, especially in the first year of the financial crisis. By contrast, the significance of the financing conditions and the liquidity position has, according to the banks, declined perceptibly since the beginning of this year. This is also largely attributable to the generous provision of liquidity by the Eurosystem. On the other hand, the surveyed institutions stated that the significance of possible capital restrictions as a constraint grew until the first quarter of 2009.

... but increasingly for cyclical reasons

One point that argues against the relevance of directly impacting bank-specific factors, which are key to the risk of a credit crunch, and in favour of a primarily real economy-driven reduction of credit supply is that, since the third quarter of 2008, above all the perception of risk, and notably the "overall economic outlook" and "industry or firm-specific outlook", have been cited as the reasons for

Changes in BLS credit standards* of German banks and in selected explanatory factors**



* Balance of the sum of the responses "tightened considerably" and "tightened somewhat" and the sum of the responses "eased somewhat" and "eased considerably" as a percentage of the responses provided. — ** Balance of the sum of the responses "contributed considerably to tightening of credit standards" and "contributed somewhat to tightening of credit standards" and between the sum of the responses "contributed somewhat to easing of credt standards" and "contributed considerably to easing of credit standards" as a percentage of the responses provided.

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tightening standards in commercial banking business.[12]

Adjustments differ according to enterprise size

The results, broken down by enterprise size, indicate that up to the fourth quarter of 2008 the credit standards of the surveyed banks for loans to small and medium-sized enterprises (SMEs) were less tight. This is probably also related to the fact that lending business with SMEs is conducted to a greater extent by credit institutions which fund themselves less on the money and capital markets, making them less vulnerable to funding problems caused by financial market turbulence. In the meantime, however, adjustments to credit standards for loans to SMEs have moved closer to those for large enterprises. There are probably two reasons for this – first, the growing impact of the business cycle on all banks' credit standards and second, the fact that SMEs are on average more dependent on the domestic economy, meaning they were affected by the crisis later on. Surveys among enterprises, too, confirm that, in the course of the financial crisis, credit supply conditions for larger firms deteriorated to a greater extent than for SMEs, but that this divide has recently lessened somewhat.[13]

Nor any striking difference in interest rate pass-through

The banks' interest rate pass-through in corporate lending likewise indicates that the response pattern currently shown by banks does not deviate strikingly from normal cyclical behaviour. In the wake of the interest rate cuts by the Eurosystem, bank interest rates for corporate loans have declined as a whole since November 2008, although recently the pace of decline was slower compared with previous months. Econometric estimates based on pre-crisis interest rate pass-through provide no indication that banks have been exceptionally slow to pass on the greatly reduced refinancing costs as a result of monetary policy easing to short-term lending rates.[14]

On the danger of a credit crunch in the cyclical recovery phase

Overall, current indications of a credit crunch are few, ...

Overall, considerations so far indicate that the most recent slowdown in lending to non-financial corporations in Germany may largely be explained by real economic activity, although a certain influence of bank-related factors cannot be ruled out. Thus, there is strong evidence that the slowdown to date in lending to German non-financial corporations does not reflect a credit crunch.

The economy is likely to stabilise further in the months ahead, although this does not

12 However, it should be noted that, besides an actual increase in risks, these data could also reflect a change in banks' risk appetite. Yet this, too, would not in and of itself necessarily point to a credit crunch if the banks' risk appetite had previously been slightly too high. Indeed, such behaviour is often interpreted as a cause of the global financial crisis. It is unlikely to have played an important role with regard to domestic lending by German banks, however.
13 See, for example, the regular survey results of the Ifo credit constraint indicator and the corporate surveys conducted by the German Chamber of Industry and Commerce.
14 The analysis excludes longer-term loans, as there is likely to have been a marked change in German financial institutions' wholesale funding during the financial market crisis. For example, there has probably been a distinct decline in the importance of the capital market for banks' refinancing and therefore in the relevance of the yield on bank bonds, which is typically the starting point for studies on the pass-though of interest rates. See Deutsche Bundesbank, Short-term bank lending rates since the autumn of 2008, Monthly Report, May 2009, pp 36-37.

... yet there is the risk of a credit crunch in the economic recovery phase

guarantee that the bottoming-out will soon give way to a sustained recovery. If, in the course of this recovery process, bank credit supply were to grow more slowly than demand, however, the fundamental danger exists that this might dampen macroeconomic activity. This could delay or, in a worst case scenario, frustrate the economic upswing.

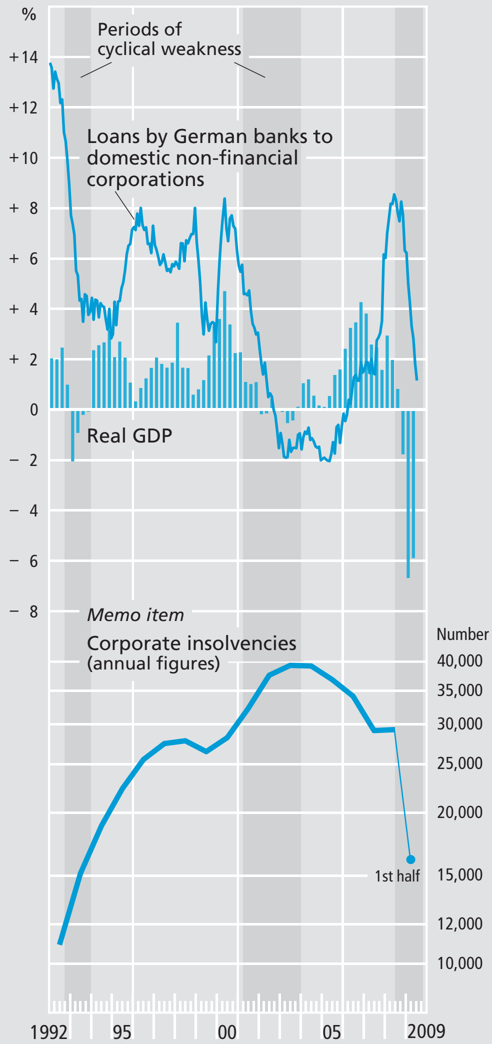
Experience shows that bank lending growth lags behind economic activity ...

It must be borne in mind, however, that at previous cyclical turning points lending growth lagged real economic growth. A certain lag, ie a continued weakness in the development of credit aggregates even after the first signs of real economic stabilisation, is therefore a common pattern. After the last two cyclical slowdowns in 1992-1993 and 2001-2003, in which growth of loans to non-financial corporations also dropped sharply, a discernible recovery in lending did not kick in until several quarters after the macroeconomic downturn had ended.

... as capacity is still underutilised ...

Usually, several factors contribute to the initially still sluggish credit growth at the beginning of an economic upswing. For instance, non-financial corporations tend to be reluctant to make new investments in fixed assets at the beginning of an economic recovery in order to make greater use of underutilised capacity, and to see how their earnings prospects develop. This is probably particularly relevant in the current situation. According to existing data, capacity utilisation is currently at a very low level. Annual average underutilisation has surpassed by far the lows of previous recessions. For this reason, firms should be able to expand production comparatively vigorously in the coming cyclical recovery

Cyclical sensitivity of loans to non-financial corporations



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phase without having to make new investments in fixed assets and, therefore, without having to apply for the requisite loans.

... and possibilities to tap internal funds are improving

What is more, economic recovery is associated with improved corporate profitability, with the result that companies are increasingly able to cover any rise in capital needs by drawing on funds they have generated from retained earnings and charging depreciation against revenue. This happened, for example, in the years after the 2001-2003 period of cyclical weakness when, despite expanding investment budgets, companies' internal funds provided adequate scope for obtaining finance and companies' financing balance consistently remained in positive territory until 2007.

Insolvency rates remain high some time after the recovery phase kicks in

Yet supply-side factors also argue in favour of a delayed increase in credit growth in the first cyclical recovery phase. If one considers earlier cyclical downturns, it may be seen that insolvency rates usually responded with a certain time lag. This means that even after cyclical recovery gets underway, insolvency figures could initially remain at a rather elevated level or even rise. This pattern was especially pronounced in the 1990s, when the absolute number of bankruptcies rose rapidly until 1997. Whereas the number of corporate insolvencies in Germany virtually stagnated in 2008, it has risen markedly in the current year. The increase was above-average in manufacturing, transport and business-related services, ie in the sectors that were at the heart of the recession. By contrast, the number of business failures in construction, one of the main beneficiaries of the economic stimulus programmes, was even lower in the first half of 2009 than one year before. If insolvency figures keep rising, domestic banks are likely to find themselves with increasing write-downs. It should be noted in this context, however, that manufacturing firms have raised their capital base across the board in recent years, bolstering their financial robustness substantially in the process. [15]

Weak rise in credit supply due to constraints imposed by banks?

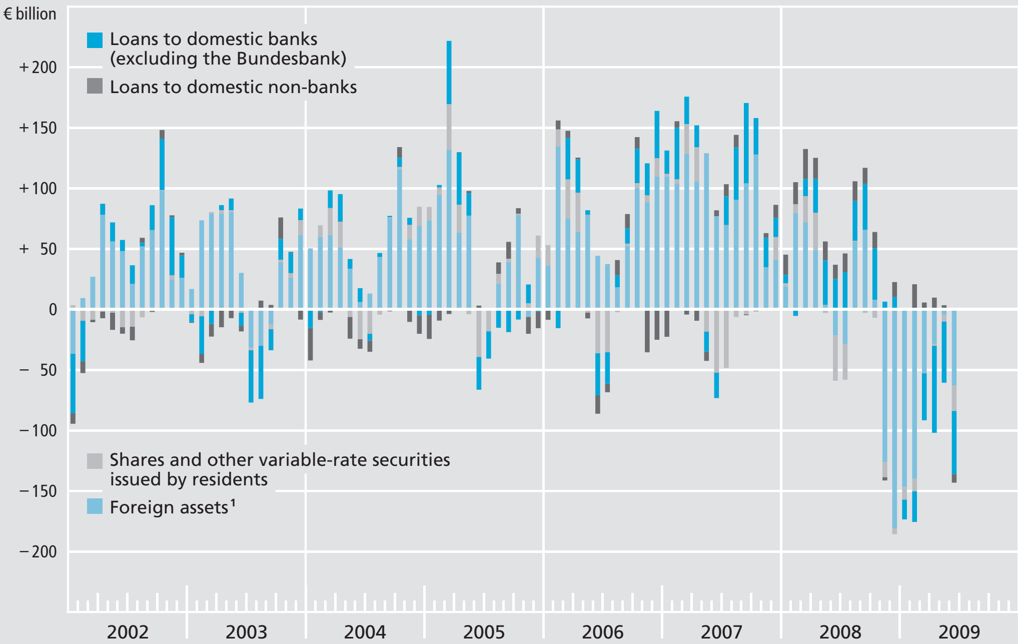
Besides this influence of real economic developments, bank-related factors dampening credit supply – a hitherto less salient aspect – could, however, play a more significant part. In particular, the German banking industry could consider itself forced by capital bottlenecks not to expand credit supply in the cyclical upswing for the time being, or indeed to make a substantial and lasting reduction to corporate loans that goes beyond the pattern described above. [16] In the current situation, heightened market expectations that banks will hold own funds clearly in excess of the regulatory capital requirement could also contribute to this. What is more, the Basel Committee on Banking Supervision is currently considering raising capital requirements in order to give a long-term boost to the stability of the international banking system. There is a consensus, however, that stricter capital requirements should not be applied until after the end of the present economic crisis in order not to jeopardise the recovery. [17]

There might also be other motives behind efforts on the part of some credit institutions to reduce their balance sheet totals, notably the

15 For more about the strengthening of the financial resilience of German enterprises, see Deutsche Bundesbank, German enterprises' profitability and financing in 2007, Monthly Report, January 2009, pp 31-53, and Deutsche Bundesbank, Financial constraints and capital accumulation: microeconomic evidence, Monthly Report, October 2008, pp 59-68.
16 For more about the relationship between economic activity and bank capital, see Deutsche Bundesbank, Credit growth, bank capital and economic activity, Monthly Report, March 2005, pp 15-24.
17 Besides strengthening the capital base, measures to dampen the cyclical effects of regulatory minimum capital requirements are currently also at the centre of discussion. One conceivable approach would be to implement countercyclical capital buffers that "breathe" over the cycle and absorb the increase in risk-sensitive capital requirements in the event of an economic downturn.

Selected asset items of German banks

Cumulative three-month flows



1 Includes loans and securities taken out or issued by non-residents.

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need in some cases to change the focus of their business model as well as any requirements that are linked to government guarantees or capital injections.

Deleveraging by banks to date ...

Indeed, the German banking industry has been deleveraging, ie reducing leverage on their balance sheets, since the fourth quarter of 2008.[18] German banks significantly reduced asset positions directly connected with banking business after the global financial crisis escalated. This is also reflected in a marked reduction in their balance sheet totals. The extent of this decline was exceptionally strong, even compared with the 2002-2005 period. Although the biggest reductions were made between November 2008 and April 2009, this trend has continued in a weaker form up to the current end. To date, the reduction has mainly affected external assets, interbank assets, equities and other variable-rate securities.

... mainly through reduction of foreign assets and of loans and advances to banks ...

Thus, when the financial crisis escalated following the collapse of US investment bank Lehman Brothers, external assets, of which cross-border interbank loans alone made up more than two-thirds, were the first to tumble. After the turn of the year, loans to domestic banks slumped as well. The main reason for the decline in exposures to domestic and foreign banks is likely to have been the drying-up of trading activity in the global financial markets. The dramatic reduction in

18 A reduction of this kind can be made via measures on the asset side – largely by balance sheet contractions and/or shifts to less risky assets – or on the liability side by raising capital.

external assets was amplified, moreover, by a conscious scaling back of the activities of domestic banks through international financial centres in the likes of the United Kingdom and Asia. Most recently, the reduction in external assets and exposures to domestic banks has slowed down somewhat compared with the fourth quarter of 2008, yet remains at an elevated level.

... and less through a reduction of lending to the domestic private sector

So far, however, banks' deleveraging has had less of an impact on lending to the domestic private sector. Basically speaking, the financial institutions, in reducing their assets, are likely to endeavour to keep their private-sector lending broadly stable and initially to trim primarily their liquidity buffers, ie their stocks of liquid assets. The main reasons for doing so are the lower liquidity of loans and the banks' aim to maintain existing close ties with their borrowers for as long as possible. The growing strains on the capital base of banks – above all, due to further write-downs arising from the weakness in real economic activity – could, however, lead to a heightened probability that the reduction of assets will increasingly also affect loans to the domestic non-financial corporate sector.

High degree of uncertainty about other external funding options

If, as a result of ongoing deleveraging, the credit supply by banks actually were to fall short of enterprises' borrowing requirements, this need not necessarily have a negative impact on the German corporate sector. Larger firms in particular have, as a general principle, other sources of external funding besides the domestic bank loan. However, the extent to which these alternative sources, abroad or in the capital market, may be tapped in a future phase of global cyclical recovery is hard to assess, because they, too, have been affected by the global financial crisis.

Above all, there has been a sharp decline in financial credit from foreign banks and subsidiaries so far this year, after they had gained considerably in importance in the years before. Borrowing through the issuance of debt securities – though traditionally less significant in Germany – and the sale of equities also remains subject to high levels of uncertainty despite a positive trend in the global financial markets in recent months. In this context, it would have an alleviating effect if German enterprises – particularly SMEs – were to make greater use of the possibilities to raise funds through the capital markets in future than they have done in the past. What is more, cross-border trade credits are of importance to internationally operating German enterprises, as they ensure that intermediate inputs do not have to be paid for immediately and so provide at least short-term scope for obtaining finance. Trends in cross-border trade credit usually follow the business cycle, for which reason they, too, have experienced a sharp decline in connection with the drop in the international flow of goods since the fourth quarter of 2008.

Bundesbank special survey among banks offers scant sign of imminent credit crunch

Overall, what these considerations indicate is that, in the first phase of an incipient economic recovery, German non-financial corporations as a whole would be able – in particular because of their fundamentally strengthened resilience, spare production capacity (and therefore little need to invest in fixed assets) as well as their improved internal financing options – to bridge a certain period of time until German banks' credit supply picks up again. Thus, potential restrictions to credit supply would not necessarily and directly place an appreciable burden on the economy as a whole. A further factor is that the banks themselves do not at present attach much importance to the possible risk of banks adversely affecting credit supply. Responses given during a special survey that the Deutsche Bundesbank conducted among selected banks and banking associations in July provided little indication of an imminent credit crunch in business with domestic non-financial corporations.[19] On the whole, survey participants stated that they do not expect any decline in their new lending activities in the second half of 2009 and in 2010. Despite plans to reduce their balance sheets, the majority of the larger banks expect lending to be largely unchanged; smaller banks are even expecting their lending business to grow.

In keeping with this picture, supervisory sensitivity analyses based on data from solvency reports currently conclude that the German banks, given their present capital base, would weather an across-the-board fall in their borrowers' creditworthiness without undershooting the Basel II minimum capital requirements.[20]

Conclusions

The sharp slowdown in the growth of loans by German banks to the domestic private sector since the third quarter of 2008, which was mainly driven by the trend in loans to non-financial corporations, does not indicate a credit crunch. Despite isolated signs of bank-related credit constraints, the indicators considered here instead suggest, on the whole, that the weaker growth in credit activity can be explained primarily by a decline in demand for credit and a more cautious lending policy by banks which can be expected in the face of gloomier economic prospects and, as a result, of greater risks.

This diagnosis of the current situation does not, however, preclude the possibility that it could prove more difficult to overcome the recession in Germany if the effects of the credit supply intensify in future. In particular, when credit demand picks up again in the economic recovery phase, possible bank-imposed restrictions to the credit supply could end up throttling the economy and hampering the upturn. However, given the current high level of production capacity underutilisation, a nascent economic upswing is likely to be less dependent on bank loans than in past cycles. In this context, it would also have an easing effect if small and medium-sized enterprises in particular were to reduce their dependence on bank loans in the long term and finance themselves more through the capital markets. Looking ahead, the factors described above – together with the improving internal financing conditions led by a real economic brightening, paired with non-financial corporations' fundamen-

19 See Deutsche Bundesbank, Special survey on German banks' lending to domestic enterprises, 28 August 2009 (http://www.bundesbank.de/download/volkswirtschaft/publikationen/ergebnisbericht_sonderumfrage_en.pdf).
20 An across-the-board deterioration of credit quality by one notch was assumed.

tally sound balance sheets – imply that the advent of a substantial credit shortage represents a risk scenario rather than the baseline scenario of macroeconomic activity.

However, the longer the banks take to adjust their balance sheets, the more relevant this risk scenario could become. To make the adjustment process easier for the banking system, the Federal Government implemented measures mandated by the broad-based Financial Market Stabilisation Fund (*Sonderfonds Finanzmarktstabilisierung,* or *SoFFin*) through guarantees for newly issued bank bonds and recapitalisation measures. Moreover, the Act on Further Development of Financial Stabilisation (*Gesetz zur Fortentwicklung der Finanzmarktstabilisierung*) enables banks to transfer high-risk assets to bad banks, thereby preserving their own capital. If the stabilising effect of these extensive measures is to take full effect, however, it is essential that particularly those banks that face equity or liquidity bottlenecks due to the financial crisis make use of these instruments without delay.