Evolution of the Bank Lending Survey since the onset of the financial crisis

During the financial and sovereign debt crisis, the results of the quarterly Bank Lending Survey (BLS) provided key indicators for a timely assessment of developments in the German and euro-area bank lending markets. The qualitative responses provided by participating banks, which, for Germany, the Bundesbank regularly aggregates to national results, not only comprise information on changes in banks' lending policy and their assessment of demand trends but also pinpoint the relevant driving factors and the respondents' expectations for the near future. A case in point was the discovery that credit standards were tightened immediately prior to the onset of the financial crisis primarily owing to bank-related supply constraints such as funding conditions or the liquidity position, whereas developments in the real sector only became important later on.

Alongside the regular standard questions, the BLS also contains ad hoc questions which enable information on new topics to be obtained quickly and flexibly. For instance, over the past few years the survey has asked questions on topics such as the impact of regulatory or supervisory actions or non-standard monetary policy measures. The BLS has therefore been able not only to describe crisis phenomena but also to address and evaluate the ways in which supervisors and monetary policy makers responded.

Following years of experience with the original catalogue of questions and fundamental change during the crisis years, the Eurosystem amended the questionnaire and added detailed explanatory comments. The old questionnaire was thus replaced at the start of 2015 by a revised version which promises to yield even deeper insights into an understanding of the development of lending policy.

Bank Lending Survey

Introduction of BLS in 2003

At the beginning of 2003, the Eurosystem introduced the Bank Lending Survey (BLS), a new survey in which senior bank executives are regularly asked to provide current information on their lending policy as well as to assess demand.[1] The purpose of this qualitative survey, conducted quarterly, is to develop a comprehensive understanding of the monetary transmission process and thus to support monetary policy decisions. Since banks play a major role in providing funding to enterprises and households in the euro area, it makes particular sense to directly survey a representative sample of institutions in this context. The original survey included 17 participating banks from Germany, which were selected based both on their own market share in lending business and the market share of the respective banking group to which they are mapped, as recorded in the banking statistics. Following enlargements to the sample in 2008 and 2012, as well as the dropout of individual banks due, for instance, to mergers and acquisitions, the German sample now consists of 34 banks.[2] This makes it by far the largest sample of all the countries in the euro area.

Credit standards as a key indicator of lending policy, …

Key to understanding the respondents' lending behaviour is the question of their underlying credit standards, essentially meaning the minimum requirements to be met by potential borrowers.[3] Questions are asked about potential determinants, which include not only the surveyed institutions' risk perception but also their risk tolerance, the costs of obtaining funding on the money and capital markets, potential balance sheet constraints and the competitive situation.

… supplemented by credit terms and conditions, loan demand and determinants

Alongside their credit standards, BLS banks provide information on the terms and conditions of loans actually approved as laid down in the loan contract,[4] which includes margins,[5] as well as an institution-specific assessment of the demand for loans together with its presumed determinants. Since credit standards could be affected by the borrowers' situation, they depend indirectly on loan demand. Conversely, credit standards can also impact on demand. Credit supply shocks can be calculated in order to isolate the supply-side impact in the narrower sense (see pages 25 to 28). The revised version of the questionnaire,[6] which was introduced in 2015, now contains one question on factors affecting credit terms and conditions and another on the change in the share of rejected loan applications.

Current lending policy and demand are assessed – as is the case, in principle, for all other questions – as quarterly changes (apart from seasonal fluctuations as regards demand). The BLS is a qualitative survey with answers in the form of stated tendencies on a scale of five

1 For a detailed account of the BLS's background and objectives, see Deutsche Bundesbank, German results of euro-area bank lending survey, Monthly Report, June 2003, pp 67-76. For an initial assessment of the Bank Lending Survey after six years, see Deutsche Bundesbank, Bank Lending Survey: an interim assessment and current developments, Monthly Report, January 2009, pp 15-30.
2 The banks in the German national sample are mapped to the following banking groups: large banks, regional banks, Landesbanken, savings banks, credit cooperatives including their regional institutions, and private mortgage banks.
3 Credit standards are a bank's internal underlying lending criteria. They are defined ex ante, ie prior to actual negotiations with potential borrowers on specific terms and conditions. Banks' credit standards define the types of a loan a bank considers desirable and undesirable, the designated sectoral or geographic priorities, the collateral deemed accepted and unacceptable, etc. Credit standards specify the required borrower characteristics (eg balance sheet conditions, income situation, age, employment status) under which a loan can be obtained. See also the box on pp 17-19.
4 Credit terms and conditions refer to the terms and conditions of loans as actually approved in the loan contracts. They generally consist of the agreed spread over the relevant reference interest rate, the size of the loan, the access conditions and other terms and conditions in the form of non-interest rate charges (ie fees), collateral or guarantees which the respective borrower needs to provide (including compensating balances), loan covenants and the agreed loan maturity. See also the box on pp 17-19.
5 Since the revised version of the questionnaire was introduced in 2015, the loan margin of a bank is understood as the spread over a "relevant market reference rate" (e.g. Euribor, Libor or the interest rate swap of a corresponding maturity for fixed-rate loans), depending on the characteristics of the loan. No definition of the concept of loan margin existed previously. See also the box on pp 17-19.
6 See the box on pp 17-19.

Revision of the BLS questionnaire in 2015

In 2015, following more than ten years of experience with the Bank Lending Survey (BLS), the questionnaire and the accompanying compilation guide were reviewed with regard to comprehensibility, clarity and effectiveness. The financial crisis led to increased interest in comparable cross-country results. However, an informal survey in 2013 showed that some key concepts were being interpreted differently across the participating banks and countries. Furthermore, response behaviour for qualitative surveys like the BLS is less objectively controllable than for quantitative surveys, which maximises the need for precise and considered definitions. It was therefore decided to word some questions more clearly and to define key concepts unambiguously. On the other hand, comparability of the responses over time requires continuity in the questions in order to avoid a structural break, particularly for important and frequently cited indicators such as credit standards. Moreover, there is a limit to the number of questions that can be asked without unduly burdening banks or jeopardising the high participation rate in the BLS, which is run on a voluntary basis. In addition to revising the questionnaire and compilation guide, it was decided to better integrate the two documents so as to facilitate cross-referencing. Before the amendments were definitively implemented, a test survey was carried out with some of the banks in the BLS sample so that further adjustments could be carried out if necessary.

Overall, the standard questionnaire was extended by five questions to a total of 23. The *ad hoc* questions are already revised regularly and therefore did not feature in this reform concept. The most important changes concerned the conceptual differentiation between the credit standards and the credit terms and conditions, the concept of loan margins, loan demand and the factors affecting demand for loans to households for house purchase.

Since the reform of the questionnaire, the credit standards are explicitly defined *ex ante* as a bank's underlying internal lending guidelines prior to any loan negotiations, in contrast to the credit terms and conditions, which are negotiated with the borrowers and which feed into the loan agreements as actually approved. The credit standards are used as the basis for making concrete decisions on the approval or rejection of a loan as they contain provisions on what types of loan a bank considers desirable and undesirable. They specify the required borrower characteristics (eg balance sheet conditions, income situation) under which a loan can be obtained. By contrast, the credit terms and conditions, as a component of the loan agreements, generally consist of the agreed spread over the reference interest rate (margin), the size of the loan, non-interest rate charges, the loan collateral to be provided by the borrower, covenants and the agreed maturity (original maturity). The credit terms and conditions depend on the borrower's specific characteristics and may be subject to change, either in parallel with the credit standards or independently of them.

As changes in the individual credit terms and conditions had only been surveyed separately in the original questionnaire, the revised questionnaire includes a new item that calls for an assessment of the overall change in the credit terms and conditions. Moreover, a question on the factors affecting the change in the overall terms and conditions as well as margins has been introduced. In principle, these factors are the same as for the credit standards. However, in order to limit the length of the questionnaire, the individual factors affecting terms and conditions are summarised under the four headings "cost of funds and balance sheet constraints", "pressure from competition", "perception of risk" and "risk tolerance", and it is only the impact of these components that is to be assessed. The latter factor, the individual bank's risk tolerance, has been added to all factor lists for both credit standards and credit terms and conditions. It refers to the willingness of the bank to take risks when lending. This can change as a result of a modification of the bank's underlying business strategy. By contrast, the perception of risk aims to show (as hitherto) how the bank assesses current borrower risk and how it reacts to changes in the general economic situation and outlook, in the industry or firm-specific situation and outlook, in the borrower's creditworthiness and in the collateral demanded.

The concept of the loan margin has been set out for the first time in the revised compilation guidelines accompanying the questionnaire. Previously, it was left to each respondent bank itself to define what it understood as a loan margin; an informal survey of banks participating in the BLS revealed that this resulted in a plethora of different definitions. Since the introduction of the revised questionnaire, the loan margin of a BLS bank is to be understood as the spread over a "relevant market reference rate" (eg Euribor, Libor or the interest rate swap of a corresponding maturity for fixed-rate loans), depending on the characteristics of the loan. Such a spread encompasses changes that arise in the individual bank's cost of funds (mainly in connection with refinancing via bank debt securities and deposits) or which are based on the bank's risk assessment of borrowers. In addition, the spread reflects changes that arise in any other factors not related to variations of market rates.

The questionnaire includes a new question on the share of rejected loan applications. Loan applications should at least include formal loan applications, and ideally also any informal loan requests that have not yet reached the stage of a formal loan application. The responses should refer to the volume of the loan applications, and an estimate should be made of the share of completely rejected applications.

For the first time, loan demand was defined as the change in nominal gross demand compared with the previous quarter. Demand includes loan rollovers but disregards normal seasonal fluctuations. It relates to the bank loan financing need of enterprises and households, independently of whether this need will result in a loan or not.

Some adjustments were also made to the factors affecting demand. For example, the general level of interest rates was added as a factor for all three loan categories (loans to enterprises, loans for house purchase and consumer credit and other lending). As it turns out, in light of the low-interest-rate environment, this new factor was in fact the main driver of the rise in demand in all three loan segments in 2015. In addition, changes were made to the factors affecting demand for loans to households for house purchase. The factor "regulatory and fiscal regime of housing markets" was added in addition to the general level of interest rates. In parallel to this, the factor "housing market prospects" was amended to become "housing market prospects including expected house price developments", thus explicitly capturing the price component.

Furthermore, the factor "household savings" was renamed "internal finance of house purchase out of savings/down payment (ie share financed via the household's own funds)" and is thus now explicitly interpreted as meaning that savings serve to substitute other financing sources and thus lower the borrowing requirement, instead of, as was previously possible, being able to increase it in the case of high own funds being used as collateral. The factor "non-housing related consumption expenditure" was deleted under the heading demand for loans for house purchase. Instead, the list of factors affecting demand for consumer credit and other lending to households now additionally contains the factor "consumption expenditure financed through real-estate guaranteed loans ("mortgage equity withdrawal")".[1]

[1] The questionnaire (standard questions) including the ad hoc questions of the given survey round as well as the compilation guide can be found on the Bundesbank's website at http://www.bundesbank.de/Redaktion/EN/Standardartikel.

possible responses.[7] All questions are asked separately for loans to enterprises (mostly subdivided into overall loans to enterprises, loans to small and medium-sized enterprises and loans to large enterprises), loans to households for house purchase, and consumer credit and other lending to households. A distinction is also made between two different reference periods: changes over the past three months and banks' expectations of changes over the next three months.

Ad hoc questions on issues relating to the financial and sovereign debt crisis

Since the onset of the financial crisis, the standard questionnaire has been repeatedly augmented with *ad hoc* questions, the content and frequency of which have changed as necessary. There is currently a set of six different groups of questions which are posed quarterly, half-yearly (on an alternating schedule) or annually.

– Each quarter, the survey contains an *ad hoc* question on the impact of the financial market situation on banks' funding conditions and lending policy.

– In the January and July rounds, the survey asks questions about how banks potentially adjust their lending policy to new regulatory or supervisory actions and about banks' participation in targeted longer-term refinancing operations (TLTROs), and in the April and October rounds the survey contains questions about the impact of the Eurosystem's expanded asset purchase programme (EAPP) as well as – beginning with the April 2016 round – the impact of the negative deposit facility rate.

[7] For supply-related questions, the scale comprises the following possible answers: "tightened considerably", "tightened somewhat", "remained basically unchanged", "eased somewhat" and "eased considerably". For demand-related questions, the range comprises "increased considerably", "increased somewhat", "remained basically unchanged", "decreased somewhat" and "decreased considerably".

– In addition, there is a question on banks' current level of credit standards which, since 2014, has been asked each year in the April round.[8]

BLS results for Germany and the euro area

The data provided by the German BLS banks are obtained through personal interviews. Germany is the only country in the ESCB in which this intensive survey form is conducted; this ensures a particularly high quality of data. In Germany, like the other euro-area countries, the individual responses are subsequently aggregated on a question-by-question basis to national results.[9] For the questions in the standard questionnaire, the responses to which are on a five-step scale, net percentages[10] are calculated which are published and analysed regularly by the Bundesbank. For the *ad hoc* questions, too, net percentages are, wherever possible, calculated and published, or alternative aggregation measures are applied on a question-by-question basis. Data provided by all participating euro-area institutions are included in the euro-area aggregate calculated by the ECB.

Developments in German banks' lending policy

BLS data always reported as q-on-q changes

Since quantitative metrics such as interest rates or lending volumes are captured, respectively, by the harmonised MFI interest rate statistics and the monthly balance sheet statistics, they are not included in the BLS. The survey is centred on credit standards and credit terms and conditions, along with their determinants, which are much more difficult or even impossible to quantify. The main difficulty is the lack of an individually ascertainable quantitative measure of the level of credit standards. This is why all standard BLS questions refer to quarter-on-quarter changes. By means of an *ad hoc* question, introduced in 2014 and repeated annually, however, some indication can be obtained of banks' current level of credit standards as against a reference value.

Credit standards

Credit standards in Germany tightened during financial crisis but little changed since then

As regards the evolution of credit standards for loans to enterprises, German banks, after reporting an easing in the first half of 2007, subsequently tightened them over a more than two-year period beginning in the third quarter of 2007. This period was particularly characterised by adjustments owing to the financial market crisis following the collapse of the Lehman Brothers investment bank in September 2008. Thus in the first quarter of 2009, 50% of the surveyed German banks, on balance, tightened their credit standards for corporate loans; this was a larger number of institutions tightening simultaneously than ever before and also than at any other time over the entire BLS survey

8 In 2009 and 2010, the "Special survey on German banks' lending to domestic enterprises", which was introduced in July 2009 and initially conducted separately, was integrated into the German BLS questionnaire. Against the background of the debate on the threat of a credit crunch, the aim of this survey was to supplement the existing information on lending with the banks' assessments of their expected lending behaviour 12 months ahead. The participating institutions were also asked to forecast the development of their capital position. See Deutsche Bundesbank, Second special survey on German banks' lending to domestic enterprises, Monthly Report, February 2010, p 36; Deutsche Bundesbank, Third special survey on German banks' lending to domestic enterprises, Monthly Report, August 2010, p 35; and Deutsche Bundesbank, Fourth special survey on German banks' lending to domestic enterprises, Monthly Report, February 2011, p 33.
9 When aggregating the German responses, all German banks' data are given the same weight. To obtain an approximately representative sample of the German banking sector as a whole, the share of the banks in the sample for each banking group is mapped to the banking group's respective share in the German banking sector's overall lending volume. The aggregated survey results for Germany may be found at http://www.bundesbank.de/Redaktion/EN/Standardartikel/Tasks/Monetary_policy/volkswirtschaft_bank_lending_survey.html.
10 For supply-related questions, the net percentages refer to the difference between the sum of the percentages for "tightened considerably" and "tightened somewhat" and the sum of the percentages for "eased somewhat" and "eased considerably". Positive net percentages thus indicate tightened standards, while negative values indicate a loosening. For demand-related questions, the net percentages refer to the difference between the sum of the percentages for "increased considerably" and "increased somewhat" and the sum of the percentages for "decreased somewhat" and "decreased considerably". Positive net percentages thus indicate higher demand, while negative values indicate lower demand. Not only net percentages but also averages across all banks' responses and diffusion indices are calculated; the latter are calculated much like net percentages, the difference being that the "somewhat" answers are only given a weight of 0.5.

horizon. Apart from slight changes in either direction, credit standards have remained largely unchanged from mid-2009 to the present. Credit standards for loans to households were still being eased up until mid-2008 before then also being tightened in the course of the financial crisis. However, in the case of loans to households both for house purchase and for consumer credit and other lending, the tightening was far less pronounced than in the case of loans to enterprises. For instance, overall credit standards for loans to households were tightened relatively moderately in the first years of the crisis; from spring 2011, they then underwent only minor adjustments, although the standards for loans to households for house purchase continued to show a tendency towards a slight tightening. This indicates that the minimum requirements for potential housing loan borrowers have not been eased during the real estate boom of the past few years. However, under the currently favourable economic circumstances, it appears likely that more loan applicants are meeting banks' unchanged requirements.[11] At last report, a considerable tightening of standards for loans to households for house purchase was becoming apparent for the first time since the financial crisis.

Following onset of financial market turbulence, bank-related factors initially responsible for tighter standards, later real economic factors

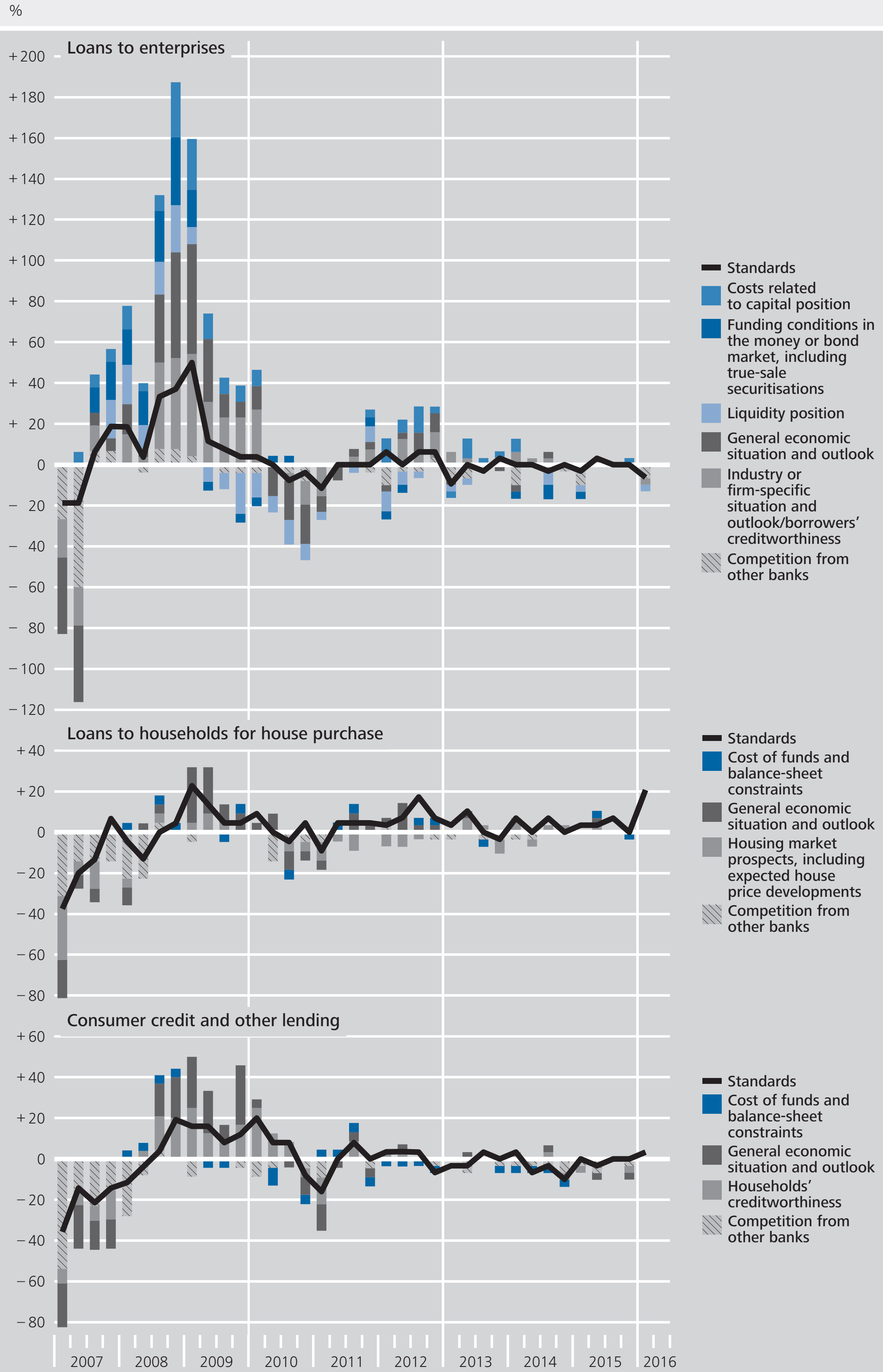
The factors affecting the adjustments to banks' credit standards changed as the financial and sovereign debt crisis unfolded. The loosening of credit standards for loans to enterprises in the first half of 2007 was still influenced by growing competition in the banking industry and optimism about the general economic situation and outlook as well as concerning the industry-specific and firm-specific situation. However, from the second half of 2007 onwards, following the initial financial market turmoil caused by the US subprime crisis, it began to appear that rising funding costs and balance-sheet constraints – in other words, bank-related factors – were *per se* causing a perceptible tightening of credit standards. Once the financial crisis broke out in autumn 2008, assessments of the risks to the real economy suddenly worsened markedly; this was the key driver behind the sharp tightening of credit standards over this period. Both bank-related factors and the assessment of macroeconomic risk caused standards for loans to large enterprises to be tightened considerably more severely than standards for loans to small and medium-sized enterprises (SMEs).[12] The latter are likely to have been affected less strongly by the tightening primarily because smaller credit institutions, as the typical counterparties of SMEs, obtain their funding more from deposits than from the money and capital markets, which were hit particularly hard by the crisis, and were therefore less affected by rising funding costs than the large commercial banks. The monetary policy measures (long-term refinancing operations, covered bond purchase programme), too, helped to alleviate, and to even temporarily reverse, the tightening effect of bank-related factors, especially the worsened funding terms and the liquidity position, already in 2009. Given the struggling real sector, however, the factors relating to lending risk continued to drive developments up to and into 2010, though their impact steadily diminished.

Standards for loans to households changed relatively moderately during financial crisis

In keeping with the moderate changes registered in credit standards for loans to households in the first quarters of the crisis, the effects of the associated determinants were likewise small. The economic situation and outlook had a tightening impact on real estate business largely only in 2009 and on consumer credit – in connection with households' creditworthiness – from the second half of 2008 to mid-2010. Given that credit standards changed very little from the end of 2009, none of the surveyed factors subsequently led to a meaningful tightening lasting more than one quarter. Since

11 See Deutsche Bundesbank, Real estate markets: lending is not heightening risk, online article at http://www.bundesbank.de/Redaktion/EN/Topics/2016/2016_02_15_real_estate_markets.html?nsc=true.
12 According to the explanatory notes to the questionnaire, the distinction between large firms and SMEs is based on annual net turnover. An enterprise is classified as large if its net annual turnover exceeds €50 million.

Changes in credit standards* and selected explanatory factors**



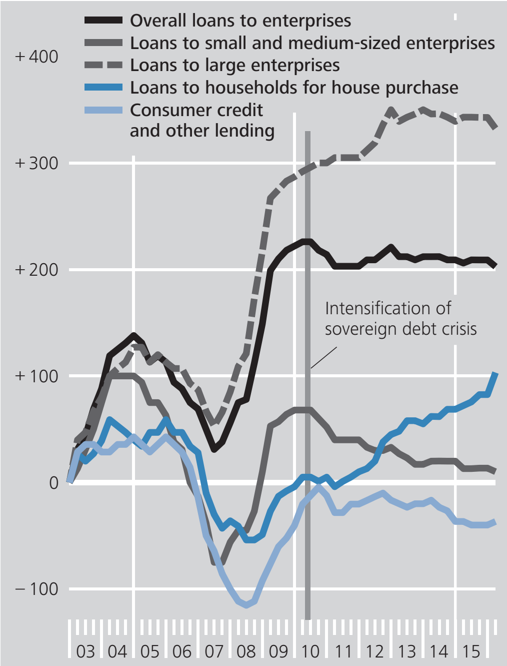
* Difference between the sum of the percentages of banks responding "tightened considerably" and "tightened somewhat" and the sum of the percentages of banks responding "eased somewhat" and "eased considerably". ** Difference between the sum of the percentages of banks responding "contributed considerably to tightening" and "contributed somewhat to tightening" and the sum of the percentage of banks responding "contributed somewhat to easing" and "contributed considerably to easing".

Deutsche Bundesbank

2008, however, both loan categories, taken in isolation, have repeatedly been loosened to some extent in the face of growing competitive pressure, especially from other institutions. The surveyed banks attributed the latest significant tightening of credit standards for household loans for house purchase in the first quarter of 2016 to an exceptional factor: the entry into force on 21 March 2016 of the Act Implementing the Mortgage Credit Directive and Amending Accounting Rules *(Gesetz zur Umsetzung der Wohnimmobilienkreditrichtlinie und zur Änderung handelsrechtlicher Vorschriften)*. This legislation considerably tightened credit assessment standards.

Cumulative changes in credit standards

Cumulative net percentages[1]



1 Differences between the sum of the percentages of banks responding "tightened considerably" and "tightened somewhat" and the sum of the percentages of banks responding "eased somewhat" and "eased considerably", summated from 2003 Q1 to the respective point in time.

Deutsche Bundesbank

Cumulative change in credit standards as a level measure

In order to supplement the highlighted quarterly changes in credit standards with some kind of level measure, a stopgap solution was initially introduced in the form of cumulated changes in standards and margins. However, the prevailing level of credit standards at the turn of 2002-03 prior to the launch of the BLS was and remains unknown for the purposes of this study.[13] Moreover, this method of cumulation also contains conceptual deficiencies. For instance, the cumulation should be measured against a benchmark with a "neutral" level which, however, it is impossible to identify.[14]

Ad hoc question on level of credit standards introduced in 2014

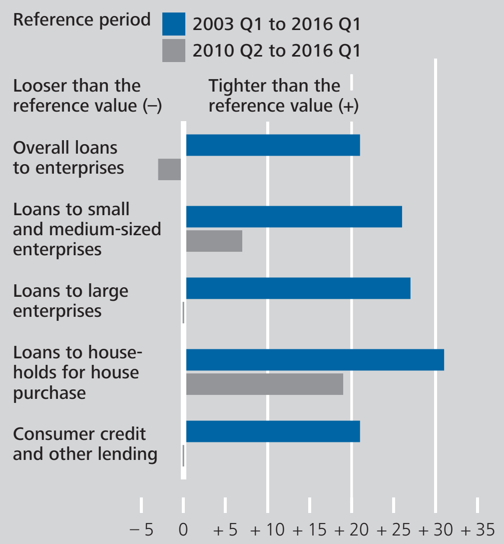
Because of these shortcomings, an *ad hoc* question was introduced in 2014 in which the surveyed senior bank executives were asked directly, and separately for each loan category, how restrictive or expansive they considered their current credit standards to be compared with two reference periods, one from the launch of the BLS in 2003 up to the present and the other from the escalation of the sovereign debt crisis in the second quarter of 2010 up to the present. Each bank was to use as its reference level the midpoint of the range of its responses, ie the midpoint of the range between the tightest and loosest level of its credit standards in the respective periods.[15]

The fact that credit standards have remained nearly constant in all loan categories in the past few years should be weighed against the fact that they were tightened earlier, in some cases considerably, during the financial crisis. Much like the cumulative changes in standards, the

13 It is not even possible to say whether that level was tight or loose by historical standards. Nor is it appropriate to make any comparison between individual banks or loan segments since it cannot be assumed that the respective starting levels were identical. The same goes for a comparison of country aggregates.
14 For a discussion of other weaknesses of this method, see Deutsche Bundesbank, The level of credit standards in the Bank Lending Survey, Monthly Report, August 2014, pp 44-45.
15 The banks were given eight possible answers to appraise the current level of their credit standards compared with the reference level. In addition to the five gradations (from "considerably tighter than the midpoint of the range" to "considerably looser than the midpoint of the range") modelled on the standard BLS questions, three further possible responses were provided which were designed to capture particularly noteworthy levels ("at the tightest/loosest level during this period") or developments ("levels have remained constant during this period"). The responses were aggregated as net percentages, defined as the difference between the sum of the percentages of banks reporting a relatively tight level and the sum of the percentages of banks reporting a relatively loose level. See Deutsche Bundesbank, The level of credit standards in the Bank Lending Survey, Monthly Report, August 2014, pp 45-46.

Current level of credit standards*

%



* Assessment of the current level of credit standards relative to the reference value, ie to the midpoint of the range between the maximum and the minimum level of credit standards implemented in two different time periods. Difference between the sum of the percentages of banks responding "moderately tighter than the midpoint of the range", "considerably tighter than the midpoint of the range" and "at the tightest level during this period" and the sum of the percentages of banks responding "moderately looser than the midpoint of the range", "considerably looser than the midpoint of the range", and "at the loosest level during this period".

Deutsche Bundesbank

Credit standards currently significantly tighter than before crisis but on a par with reference level since 2010

responses to the *ad hoc* question concerning the current level of credit standards appear to indicate that standards in all credit segments are currently considerably tighter than their reference level since 2003. Compared with the shorter reference period since the second quarter of 2010, however, credit standards are, overall, currently at a level which is comparable to the reference value.[16] Standards for loans to households for house purchase, which are currently somewhat tighter than their reference value since 2010, are an exception. Both the responses to this *ad hoc* question and the ascertained cumulative changes in standards appear to indicate that the range of credit standards in all business areas has narrowed since the intensification of the sovereign debt crisis and shifted towards a tightening of standards.

Credit terms and conditions

Credit terms and conditions comprise margins (reported separately for average and riskier loans) and "other conditions and terms", which include the following: non-interest rate charges, size of the loan or credit line, collateral requirements, maturity and covenants (for loans to enterprises) or the loan-to-value ratio (for loans to households for house purchase). The respondent senior bank executives began to report on overall terms and conditions in 2015.

Margins on loans to enterprises widened during crisis but have recently narrowed owing to competition

In 2007, German banks were, on balance, narrowing their margins, in some cases sharply, on average loans in all three business areas; a subsequent increase in risk perception brought on by the financial crisis prompted a considerable widening of margins in business lending. This affected both average and riskier loans, which means that banks were being cautious not only concerning the provision of funds for riskier projects or to start-up firms but also with regard to the funding of standard projects. By contrast, margin adjustments in loans to households remained limited in the crisis period beginning in 2008. From 2010, margins were repeatedly narrowed moderately in this segment, in some cases even for riskier loans. On the other hand, a protracted period of narrowing margins in loans to enterprises did not begin until 2014. These latest customer-friendly

16 The aggregated data for enterprises overall do not necessarily lie between the aggregated data for SMEs and those for large enterprises (see cumulative standards 2004-05 and the level question for the 2010 Q2 to 2016 Q1 period), even if the results are consistent for each individual bank. A seemingly implausible constellation might be implied, for example, by the following simplified example. Bank 1 reports its credit standards for loans to large enterprises and to enterprises overall as "unchanged", but its standards for loans to SMEs (of smaller volume and thus less important for the bank) as "tightened"; bank 2 reports its standards for loans to large enterprises and to enterprises overall as "eased" but its standards for loans to SMEs (less important for the bank) as "unchanged"; bank 3 reports its standards for loans to SMEs and enterprises overall as "unchanged" but its standards for loans to large enterprises (less important for the bank) as "tightened". Aggregated across all three banks, this yields net changes in credit standards of -33 ("eased") for overall loans to enterprises, 0 ("unchanged") for loans to large enterprises and +33 ("tightened") for loans to SMEs.

Estimating aggregate credit supply shocks for Germany using BLS data

In order to analyse the effects of potential supply-side constraints on credit growth it is necessary to determine pure, ie exogenous, changes in the credit supply. The Bank Lending Survey (BLS) is generally a good data source for identifying such credit supply shocks as banks are routinely asked about their lending policy in the form of adjustments to their credit standards. However, changes in credit standards cannot automatically be interpreted as exogenous credit supply shocks as they may also be subject to other determinants.

For example, there might be a direct link between credit standards and credit demand, eg if banks adjust their standards in order to stabilise their market share by offsetting fluctuations in credit demand.

Moreover, changes in credit standards and credit demand may be attributable to common factors.

– A changing macroeconomic situation may be expected to trigger an adjustment in both credit standards and credit demand.[1]

– Bank-specific variables that may play a role in determining a bank's credit standards may likewise depend on determinants that simultaneously impact credit demand. Thus an economic downswing that causes the number of non-performing loans to increase may well encourage banks to tighten their credit standards so as to maintain the value of their loan portfolio. At the same time, an economic downswing could also lower credit demand if firms invest less owing to poorer sales prospects and thus borrow less.

To identify exogenous changes in credit standards, ie those that occur independently of other variables, the changes in credit standards reported by the banks must therefore be adjusted for other factors besides the direct impact of changes in credit demand. It is necessary to additionally capture all determinants that both influence credit standards and either directly affect demand or may themselves be influenced by variables that lead to a change in credit demand.

In a first step – based on the method applied by Bassett et al (2014)[2] – the impact of a number of variables on changes in credit standards is estimated using a dynamic fixed-effects panel model for the banks included in the German BLS sample, aggregated into banking groups.[3]

$$\begin{aligned}\Delta S_{i,t} = \alpha &+ \beta_1 \Delta S_{i,t-1} + \beta_2 \Delta D_{i,t} \\ &+ \lambda' E_{t-1}[m_{t+4} - m_t] \\ &+ \gamma' [n_t - n_{t-4}] + \delta' \Delta f_t \\ &+ \theta' \Delta Y_{i,t-1} + \vartheta' Z_{i,t-1} \\ &+ \eta_i + \epsilon_{i,t} \qquad (1)\end{aligned}$$

with

– $\Delta S_{i,t}$: net percentage of the changes in credit standards of banking group i,

1 Thus the BLS surveys the impact of the general economic situation and outlook on credit standards. One factor which is probably strongly correlated with this is consumer confidence, which is one of the factors in the BLS affecting household demand.
2 See W F Bassett, M B Chosak, J C Driscoll and E Zakrajsek (2014), Changes in bank lending standards and the macroeconomy, Journal of Monetary Economics 62, pp 23-40. A similar method is applied by C Altavilla, M Darracq Paries and G Nicoletti (2015) in Loan supply, credit markets and the euro area financial crisis, ECB working paper series No 1861.
3 The estimation is based on data at banking group level as an estimation using data aggregated across the entire banking system would considerably reduce the number of degrees of freedom.

- $\Delta D_{i,t}$: net percentage of the changes in credit demand[4] of banking group i,

- m_t: vector of macroeconomic indicators on the economic outlook in Germany,

- n_t,f_t: vectors of indicators of the current economic situation in Germany,

- $Y_{i,t-1}, Z_{i,t-1}$: control variables of banking group i,

- η_i: fixed effects of banking group i,

- ε_{it}: exogenous change in the credit standards of banking group i,

The idea underlying this approach is to adjust the changes in the credit standards as derived from the BLS findings for the impact of the right-hand variables. This isolates the share of the change in credit standards which is not explained by the right-hand variables and can, therefore, be interpreted as a proxy for exogenous changes in the credit supply (ie pure credit supply shock) at banking group level. A crucial requirement of this empirical identification strategy is to capture not just credit demand but all other conceivable determinants of credit standards that either directly change credit demand or are influenced by other factors that also affect credit demand.

Given this requirement, vector m_t in equation (1) comprises real GDP (in logarithmic form), the unemployment rate, the three-month money market rate (Euribor) and the yield on German government bonds with a residual maturity of ten years. The calculation of expectations E_{t-1} formed in period $t-1$ regarding the change in the variables included in m_t over the period t to $t+4$ was partly based on the expectations gauged by the Consensus Forecast. Vector n_t contains real GDP (in logarithmic form) and the unemployment rate; vector f_t comprises the overnight money market rate (Eonia) and the volatility index (VDAX), which gauges the volatility of the German share price index (DAX).[5]

The choice of banking group-specific variables is based, first, on the determinants mentioned in the literature. Berger and Udell (2004),[6] for example, demonstrate an empirical relationship between the changes in loan loss provisions and the associated change in profitability and credit standards. In addition, Gatev and Strahan (2006)[7] as well as Pennacchi (2006)[8] show that banks' lending policy depends on their access to stable funding sources. Hence the banking group-specific control variables $Y_{i,t-1}$, besides net interest income as a measure of profitability, contain write-downs and value adjustments on claims and certain securities and also transfers to loan loss provisions

4 In order to determine the banking group-specific net percentage of the changes in credit standards, $\Delta S_{i,t}$, (demand, $\Delta D_{i,t}$) the net percentage of the changes in credit standards (changes in demand) were first computed for each banking group i and at each point in time t in the three loan categories (loans to enterprises, loans to households for house purchase, consumer credit and other lending to households) polled by the BLS. The weighted average of the banking group-specific net percentages of all three loan categories were then calculated for each banking group i and each point in time t, weighted by the share of the respective loan category in banking group i's total loans to the non-financial private sector at time $t-1$.
5 Changes in Eonia or the VDAX are included in the model in order to control for changes in the expansiveness of monetary policy and perceived uncertainty regarding the economic situation in the context of adjustments of credit standards. It is conceivable that the changes in Eonia may not adequately reflect some of the non-standard monetary policy measures taken in adjusting the expansiveness of monetary policy. However, the BLS findings show that the German banks did not adjust their credit standards owing to TLTROs and the EAPP. The model disregards potential effects of other non-standard measures which cannot be adequately approximated by changes in Eonia.
6 See A N Berger and G F Udell (2004), The institutional memory hypothesis and the procyclicality of bank lending behaviour, Journal of Financial Intermediation 13 (4), pp 458-495.
7 See E Gatev and P Strahan (2006), Banks' advantage in hedging liquidity risk: theory and evidence from the commercial paper market, Journal of Finance 61 (2), pp 867-892.
8 See G G Pennacchi (2006), Deposit insurance, bank regulation, and financial systemic risks, Journal of Monetary Economics 53 (1), pp 1-30.

(both in relation to total assets). Access to stable funding sources is proxied in the vector of banking group-specific control variables $Z_{i,t-1}$ by the ratio of deposits to loans.

Second, the banking group-specific control variables contain additional determinants that are assumed to influence credit standards. It follows that various standard-setting behaviours are conceivable depending on the relative significance of a bank's lending business. Banks that are strongly reliant on lending business are likely to have tighter standards than competitors with business models which are less focused on lending and, therefore, better equipped to offset potential losses in their loan portfolio. Moreover, credit standards could also be influenced by the size of a bank measured in terms of total assets, eg if smaller banks cannot grant larger loans, or can do so only on a limited scale, as they cannot draw on the compensatory synergies of an affiliated network of banks. In order to capture both effects in the model, the control variables $Z_{i,t-1}$ therefore additionally contain loans to the private non-financial sector (in relation to total assets) and total assets (in logarithmic form).

Assuming that endogenous changes in the credit standards can be fully captured by the right-hand variables in equation (1), the residuals $\varepsilon_{i,t}$ reflect the exogenous part of the changes in credit standards, ie the credit supply shocks of banking group i.[9] Possible reasons for movements in these variables are changes in prudential and regulatory rules, changes in the business strategy or a fundamental revaluation of lending-related risks where this does not entail any change in credit demand. Positive (negative) residual values represent an exogenous tightening (easing) of credit standards at the banking group level.

In a second step, the estimated banking group-specific exogenous changes in credit standards $\widehat{\varepsilon}_{i,t}$, are aggregated to form system-wide exogenous credit supply changes, ΔS_t^{adj}. To this end, the estimated residuals are weighted with the banking group-specific shares in total loans to the non-financial private sector of all banking groups participating in the BLS, $\omega_{i,t-1}$:

$$\Delta S_t^{adj} = \sum\nolimits_i \omega_{i,t-1} \hat{\epsilon}_{i,t} \qquad (2)$$

As with the exogenous banking group-specific changes in standards $\varepsilon_{i,t}$, positive (negative) values of the exogenous changes in credit standards computed for the entire German banking system ΔS_t^{adj} equate to an exogenous tightening (easing) of credit standards.

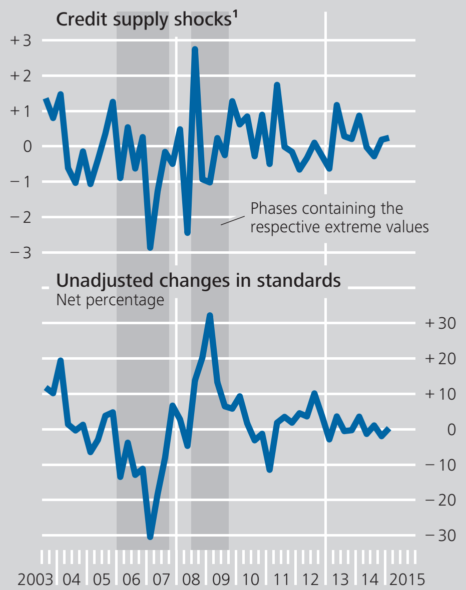
Like the interpretation of the banking group-specific residuals $\varepsilon_{i,t}$ determined in the first step, the aggregate changes in standards ΔS_t^{adj} can be understood as a proxy of exogenous adjustments of lending policy at the level of the German banking system resulting from purely bank-related factors. Hence these are referred to below as aggregate credit supply shocks.

In contrast to the aggregate credit supply shocks, the (unadjusted) changes in BLS credit standards reflect changes in standards which may additionally result from banks' response to changes in demand or changes in the macroeconomic environment and bank-specific variables.

The upper half of the chart on the following page shows the development over time of the estimated credit supply shocks for the entire German banking system. The lower half shows the aggregated development of unadjusted changes in standards from all

9 If some of the bank-specific variables used vary for purely exogenous reasons, ie reasons unrelated to changes in the demand for credit, exogenous changes in standards are no longer correctly reflected by the residuals in equation (1).

Estimated aggregate credit supply shocks and unadjusted changes in standards*



* Positive values represent a tightening and negative values an easing of credit supply policy. **1** Divided by the standard deviation.

Deutsche Bundesbank

three loan categories specified in the BLS.[10] The two charts basically show a fundamentally similar pattern aside from the smaller persistence in the upper time series owing to the inclusion of the lagged changes in credit standards in equation (1).

What is striking is that there are two periods which contain both the positive and negative extreme values and during which the development of the two time series diverges. Furthermore, the path of the estimated aggregate credit supply shocks during these two periods is robust to different model specifications in which individual variables were removed from the model estimated here. In the first phase from the beginning of 2006 to the third quarter of 2007, the unadjusted changes in credit standards were consistently in negative territory; in other words: the German banks on balance continuously eased their credit standards. Yet, given that the aggregate credit supply shocks in the first half of this period fluctuated around the zero bound, the easing in this phase was most likely a response of the banks to changes in the variables used in the model, ie they mainly reflect endogenous changes in the standards. Only at the beginning of 2007 did banks begin to ease their credit standards also exogenously, which is consistent with the extremely negative supply shock at that time.

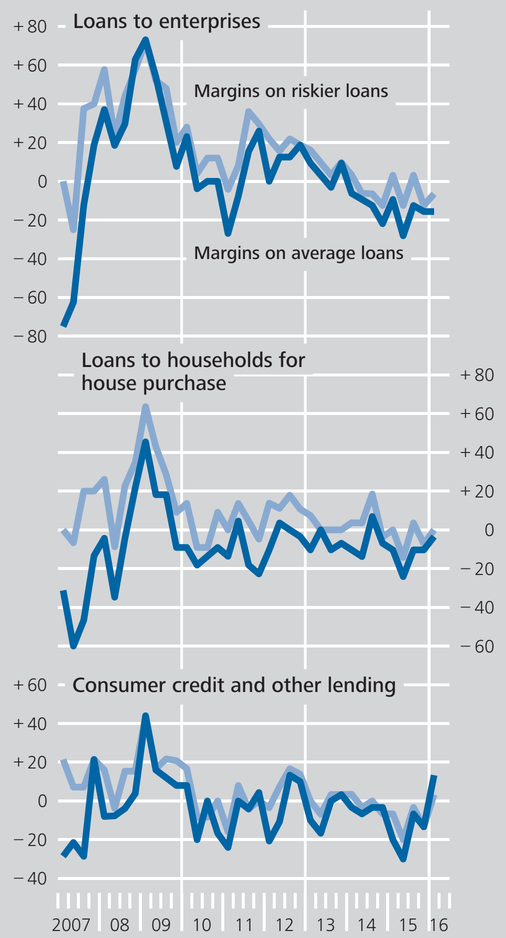
The second phase began with the collapse of Lehman Brothers in the third quarter of 2008, stretching into the third quarter of 2009. In accordance with the path of the unadjusted changes in standards, banks continuously tightened their standards during this period. However, the tighter standards were accompanied by an appreciable exogenous restrictive adjustment of the standards only at the start of the period as the estimated time series of aggregate credit supply shocks exhibits a perceptibly positive value only at the beginning of the second period. According to the estimated model, the subsequent tightening of credit standards reported by banks was, however, primarily a response by the banks to changes in demand, changes in the realised and expected macroeconomic setting and to related changes in bank-specific variables.

10 The net percentage of unadjusted changes in credit standards for the German banking system was calculated as an average across the three loan categories surveyed in the BLS, each weighted by its share in total lending to the non-financial private sector by the banking groups participating in the BLS.

changes appear to have been triggered by, above all, the highly competitive environment which banks are facing, as diagnosed by the responses to the questions on the factors affecting margin adjustments, which were introduced in 2015. The evolution of the other surveyed terms and conditions in loans to enterprises largely mirrored the evolution of margins, whereas for loans to households these terms and conditions were barely adjusted after the end of 2007.

Change in margins in German banks' lending business*

%



* Difference between the sum of the percentages of banks responding "widened considerably" and "widened somewhat" and the sum of the percentages of banks responding "narrowed somewhat" and "narrowed considerably" (widened margin = tightening, narrowed margin = easing).
Deutsche Bundesbank

Evolution of demand for bank lending

Continuing trend towards rising demand for mortgage loans

According to BLS data, demand for bank lending on the part of non-financial corporations[17] rose – with the exception of a very few quarters – more or less continuously between 2007 and mid-2011, though it should be noted that the measured demand includes queries and applications that ultimately did not result in a loan.[18] This demand pattern slowed only in the second half of 2011 before reversing in the following two years. In 2014 demand then slowly picked up again, rising considerably of late.

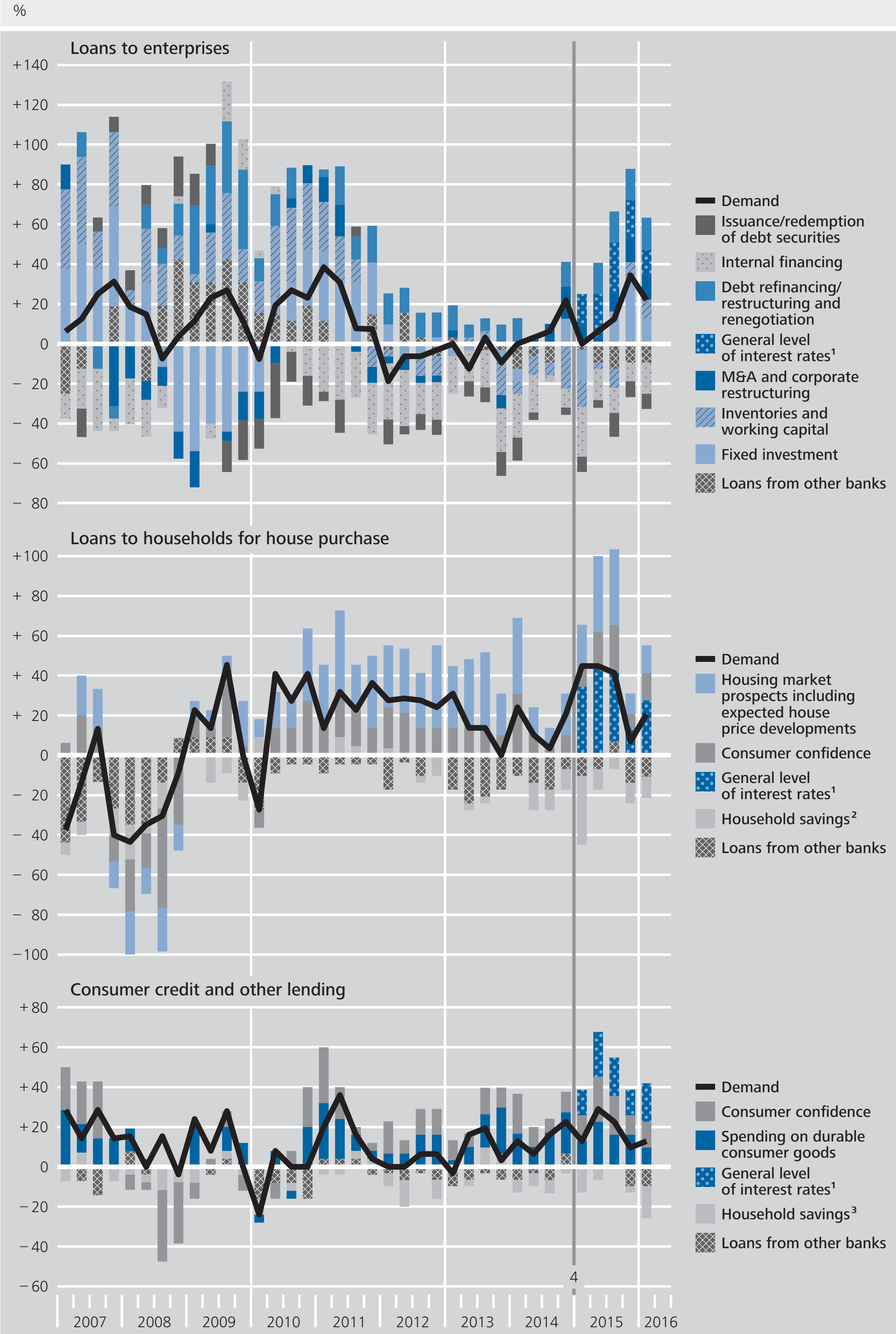
Households' financing needs for house purchase and consumption displayed considerably divergent paths. Thus their demand for mortgage loans dropped significantly in 2007 and 2008 before establishing a still persisting trend of marked to steep rising demand, punctured only rarely by brief stagnant spells. Households' borrowing for consumption has risen distinctly on average over all quarters since 2007. The percentage of rejected loan applications, which has featured in the survey since the beginning of 2015, has tended since then to drop somewhat in all three lending segments.

Fluctuating funding needs for fixed investment reflect start of crisis and subsequent easing

Much like the determinants of credit standards, the factors affecting demand have also changed over the course of the financial and sovereign debt crisis. When interpreting these findings, however, it should be borne in mind that, while the respondents can report confidently on the determinants of credit standards, because they are themselves involved in the adjustment process, their statements on the drivers of demand are less robust because loan officers can only indirectly second-guess bor-

17 It was not until the revised version of the BLS came out that demand was uniformly defined as nominal gross demand relative to the previous quarter. It relates to firms' and households' request for bank funding, regardless of whether a loan is actually granted. See the box on pp 17-19.
18 For example, simultaneous loan requests addressed to multiple BLS institutions for the sake of caution can massively inflate BLS demand. In addition, the increase in loan demand as reported by the BLS may also mask shifts within the market towards smaller institutions that were less hard hit by the financial crisis, but which show little impact on the aggregate loan demand as captured by the monthly balance sheet statistics.

Changes in demand* and selected explanatory factors**



* Difference between the sum of the percentages of banks responding "increased considerably" and "increased somewhat" and the sum of the percentages of banks responding "decreased somewhat" and "decreased considerably". ** Difference between the sum of the percentages of banks responding "contributed considerably to higher demand" and "contributed somewhat to higher demand" and the sum of the percentages of banks responding "contributed somewhat to lower demand" and "contributed considerably to lower demand". **1** Introduced in 2015 Q1. **2** Renamed "Internal finance of house purchase out of savings/down payment (ie the share funded from the household's own resources)" from 2015 Q1 onwards; savings are now explicitly used for substitution and reduce borrowing needs. **3** Renamed "Internal finance out of savings" from 2015 Q1 onwards. **4** Additional factors introduced or redefined.

Deutsche Bundesbank

rowers' motives. In corporate lending business, the change in firms' funding demand for fixed investment reflects both the onset of the financial crisis and the gradual easing thereafter. Thus demand for fixed investment was rising, in some cases massively, in 2007 and the first half of 2008, but then slumped; this was followed from mid-2010 until the first quarter of 2012 by a renewed phase in which fixed investment impacted positively on funding needs. No clear trend was evident for a long time thereafter, but demand for funding for this purpose has recently picked up again. Funding needs for inventories and working capital responded with a time-lag. They exerted a positive impact on demand – probably due to sagging sales during the crisis – into the third quarter of 2011, before dampening effects subsequently regained the upper hand. In the 2008 to 2012 crisis period, funding needs for mergers/acquisitions and corporate restructuring likewise decreased, whereas demand for debt refinancing/restructuring and renegotiation rose.

Low general interest rate level currently key demand driver

One of the relevant factors behind the recent considerable rise in demand has been the low general level of interest rates, the impact of which has been surveyed by the BLS since early 2015. Another consequence of the interest rate cuts is that, from around mid-2010 to the present, demand for long-term loans has increasingly supplanted that for short-term loans.

Funding needs dampened long term since crisis by substitution

As regards alternative sources of finance, demand for loans from BLS banks was, on the one hand, bolstered in the first crisis years from mid-2008 to the end of 2010 in the view of the BLS respondents by the simultaneous requesting of loans from multiple institutions to forestall possible rejections by some banks. On the other hand, demand for bank lending was dampened long term after the crisis peaked by a substitution effect as firms resorted more to internal financing or issuance of debt securities.[19]

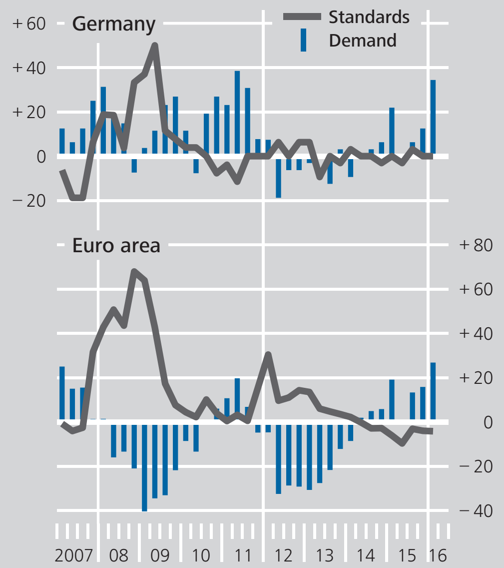
Uncertainty following the financial crisis, reflected in a decline in consumer confidence and a gloomier outlook for the real estate market, dented demand for loans to households for house purchase only from the fourth quarter of 2007 to the end of 2008. According to information provided by some BLS banks, general uncertainty, coupled with a lack of attractive alternative investment options, then combined to drive up demand for loans for house purchase since households have tended mainly for these reasons to shift their wealth into tangible assets. The steep interest rate cuts at the end of 2008, too, help to explain why demand for bank lending in this segment not only recovered quickly but also entered into a lengthy period of unparalleled demand growth which has persisted up to the present. Therefore, the "General level of interest rates" has been identified as the most important factor in the survey since its introduction in 2015. The dampening effects of other factors were limited. These include (partial) financing out of households' savings and loans from other banks. Among the determinants of demand for consumer credit, the picture is similar. Propensity to purchase did not slump during the crisis; according to BLS data, its momentum was supported by the "environmental premium" for buying a new car, which was introduced in 2009. Similarly, consumer confidence dipped only in 2008. Subsequently, up until today, these two factors – alongside the low general level of interest rates – have been the main drivers of rising demand. As with the demand for loans to households for house purchase, household savings and loans from other banks tended to have a dampening effect on demand for consumer credit and other lending at BLS banks.

Continuous rising mortgage demand trend since 2010

19 See Deutsche Bundesbank, Developments in external financing for euro-area non-financial corporations during the global financial and economic crisis, Monthly Report, January 2012, pp 22-24; Deutsche Bundesbank, The structure of corporate financing amid weak loan growth in Germany and the euro area, Monthly Report, August 2013, pp 42-43; and Deutsche Bundesbank, Differences in dynamics of loans to non-financial corporations in Germany and France, Monthly Report, November 2014, pp 36-37.

Change in credit standards* and demand** for loans to enterprises

%



* Difference between the sum of the percentages of banks responding “tightened considerably” and “tightened somewhat” and the sum of the percentages of banks responding “eased somewhat” and “eased considerably”. ** Difference between the sum of the percentages of banks responding “increased considerably” and “increased somewhat” and the sum of the percentages of banks responding “decreased somewhat” and “decreased considerably”.

Deutsche Bundesbank

Credit supply and demand trends in Germany and the euro area

Massive tightening of credit standards in euro area due to crisis

In the wake of the financial and economic crisis, BLS banks in the euro area (including Germany) tightened their lending policy not only to a significantly greater extent overall than the German institutions, but also over a longer period. This is especially true of the periphery countries. From mid-2007 to mid-2009, euro-area banks tightened their credit standards in all business lines, in some cases massively, principally owing to their assessment of the inherent risk of lending, although bank-related factors also played a part in this. At the same time, euro-area banks widened their margins – in some cases dramatically – and concurrently tightened their other terms and conditions. In the period from 2011 to 2013, euro-area banks (largely excepting Germany) made further restrictive adjustments, chiefly for reasons relating to the real economy, although some were bank-related. Conversely, the recent easing of standards and margins since the end of 2014 has been more marked in other euro-area countries than in Germany. The surveyed institutions attributed these adjustments primarily to increasing competition in the banking sector.

Steep crisis-induced slump in demand in euro area, recovery only since 2014

While periods of contracting credit demand since 2007 were relatively short in Germany (in the case of loans to enterprises mainly in 2012-13 and in the case of loans for house purchase in 2007-08) and the declines were relatively moderate, there were marked to dramatic slumps in demand in other euro-area countries, especially in the field of real estate financing. In 2008, for example, nearly all the surveyed banks in Spain and Ireland – countries that were particularly affected by the real estate crisis – reported falls in demand. Demand for loans to enterprises dipped chiefly because of a declining need for funds for fixed investment, mergers, acquisitions and corporate restructuring. Household demand deteriorated mainly in response to a gloomier housing market outlook, including house price developments, coupled with sagging consumer confidence and a falling propensity to purchase consumer durables. These factors only started to support households’ credit demand again when macroeconomic momentum began to pick up in 2014. This was accompanied by strengthening demand for loans to enterprises. This was reflected first in a rising need for inventories and working capital, for corporate restructuring and for refinancing. Since 2015, there has also been increased demand for funding fixed investment. Low interest rates were cited as the main driver of demand in all credit segments, however. This positive growth momentum has persisted up to the present time.

Ad hoc questions on the impact of the financial crisis on funding conditions and lending policy

First ad hoc question in 2007 on impact of financial market turbulence on credit standards

As early as autumn 2007, the BLS responded to the emerging turbulence in the financial markets, triggered by the crisis in US subprime mortgage-related bonds and its spillover into the markets for structured credit products, by introducing new *ad hoc* questions in the survey. In the October 2007 round and in the following quarters, senior bank executives were asked what effect the current situation in the financial markets, taken in isolation, was having on their banks' credit standards. The German respondent banks, on the whole, initially reported only moderately tightening effects on their standards for loans to enterprises, whereas in the rest of the euro area the turbulence was placing a significantly greater strain on lending to large firms, in particular. In 2008, the survey contained an additional question, which was repeated for several quarters, on the extent to which banks' lending and margins had been affected by funding commitments to programmes issued by conduits or structured investment vehicles (SIVs).[20] The answers showed that the negative effects of such commitments at German banks were greater than those in the euro area as a whole, although barely more than one-quarter of the surveyed banks were affected at all.

Ad hoc question on crisis-related impact of the situation in the financial markets asked in every quarter to date

Since the third quarter of 2007, banks have been asked to provide information on the extent to which the situation in the financial market is affecting their access to wholesale funding via their normal financing channels.[21] In the first years of the crisis, it was evident that the turbulence was exerting a considerable negative impact on wholesale funding both in Germany and the euro area as a whole. At the end of 2008, for instance, 60% of the German BLS banks with access to the unsecured interbank money market (over one week) described access as considerably hampered or somewhat hampered. In the euro area as a whole, this was stated by more than three-quarters of banks that customarily obtain funding from this source. The hurdles to refinancing via debt securities were similarly high. In both the German and euro-area-wide sample in the final quarter of 2008, more than 70% of BLS banks obtaining their funding through wholesale debt securities issuance reported that market access was hampered considerably or somewhat hampered. In some cases, the possibility of securitising loans came to a complete standstill, although only a minority of banks were using this as a source of funding. According to the information provided by the surveyed banks reporting difficulties in market access, this sometimes had a considerable impact on lending volumes and margins in the initial crisis years both in Germany and in the euro area as a whole.

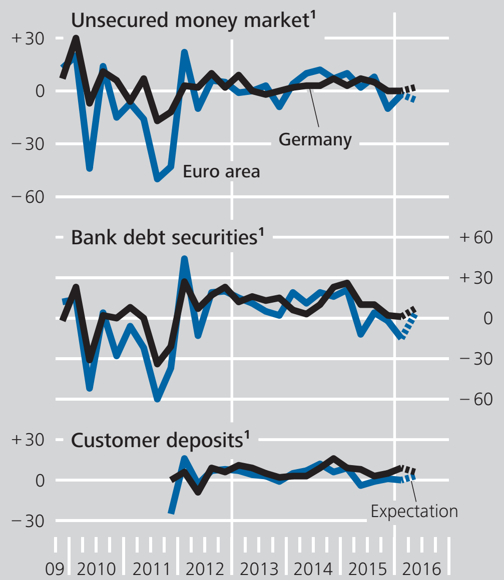
After their funding situation had eased somewhat at the end of 2009 as a result of the Eurosystem's massive easing measures, this *ad hoc* question was reworded to ask respondents whether the situation in the financial markets had led to an improvement or deterioration in market access compared with the previous quarter, rather than the extent to which access had been hampered. Apart from the second quarter of 2010, when the sovereign debt crisis started to escalate, and the second half of 2011, when it spiralled further amid substantial uncertainty in the financial markets, the situation with regard to all sources of funding has

20 Conduits or SIVs are funding structures in which a special-purpose vehicle is used to buy instruments based on underlying claims, such as asset-backed securities (ABSs) or collateralised debt obligations (CDOs), which are refinanced by the issuance of shorter-term commercial paper. The subprime crisis in the United States and the sudden illiquidity of many collateralised securities posed a threat to the existence of some banks, as they were no longer able to refinance their purchased receivables in the money market.

21 Questions were asked about the following credit categories: unsecured interbank money market (very short-term money market up to one week, short-term money market over one week), wholesale debt securities (short-term as well as medium to long-term debt securities), securitisation (of loans to enterprises and loans for house purchase), and the ability to transfer credit risk off the balance sheet.

Access to sources of funding*

%



* Difference between the sum of the percentages of banks responding "improved considerably" and "improved somewhat" and the sum of the percentages of banks responding "deteriorated somewhat" and "deteriorated considerably". **1** Calculated for the following maturities: money market (up to one week and over one week), bank debt securities (short-term as well as medium to long-term), customer deposits from 2011 Q4 onwards (up to one year and over one year as well as other retail funding instruments).

Deutsche Bundesbank

been easing almost constantly in Germany since 2010, especially with regard to medium and long-term debt securities and securitisation. The conditions for funding via deposits[22] also showed an overall improvement, although the significant easing in the case of short-term deposits has been accompanied by a slight deterioration in longer-term deposits. This is likely to be due essentially to the declining interest rate spread between these two categories and thus to the lower opportunity cost of holding money, which has resulted in shifts from longer-term deposit components into short-term ones. The latter development is also true of the euro area as a whole. By contrast, it was only in the second half of 2012 that a sustained slight easing began in the money market and in debt securities against the backdrop of the monetary policy measures adopted from the end of 2011, comprising the launch of a new covered bond purchase programme and the introduction of three-year refinancing operations. Since that time, however, there have also been recurrent perceptible difficulties in some countries with regard to funding via the money market or debt securities, which have also been reflected in cases of intermittently stagnant development throughout the euro area.

Ad hoc question on the specific impact of recapitalisations and state guarantees

The announcement and introduction of government measures to support recapitalisation and provide state guarantees for bank debt securities in the wake of the escalating financial market crisis in the autumn of 2008 were the starting point for an *ad hoc* question on specific positive effects on banks' market access. While fewer than 20% of BLS banks in Germany reported a slightly or considerably positive impact on access to wholesale funding in 2009, the figure for the euro area as a whole was, at times, more than 50%.[23]

Ad hoc question on specific impact of sovereign debt crisis

In the wake of the financial crisis spillover into the European sovereign bond markets, a question on the specific impact of the sovereign debt crisis on banks' funding conditions and lending policies was included between the fourth quarter of 2011 and the third quarter of 2014. The results for Germany showed the sovereign debt crisis had no more than slight and mostly positive effects on banks' funding conditions overall, with standards and margins not being affected at all. This stood in contrast to the rest of the euro area, where banks, especially in the periphery countries, reported at the end of 2011 that their funding situation had been considerably hampered by the sovereign debt crisis. This was making itself felt in terms of both direct exposures and the collateral value of government bonds on the repo mar-

22 This category, divided into short-term and longer-term deposits, was added to the questionnaire from the final quarter of 2011.
23 Although this question was discontinued at the end of 2009, such effects continue to be surveyed indirectly as part of the aforementioned question on the extent to which the situation in the financial markets has hampered banks' access to wholesale funding via their customary sources. To date, this question still asks respondents to take into account any effect of state guarantees for debt securities and recapitalisation support.

ket, as well as through other effects.[24] All three channels were leading *per se* to a considerable tightening of credit standards. The subsequent marked recovery in the European sovereign bond markets in the light of the new purchase programme for government bonds announced by the ECB Governing Council in September 2012 (outright monetary transactions, OMTs) then began to lead, from the fourth quarter, to a gradual easing of the impact on banks' wholesale funding.

Ad hoc questions on regulatory measures in response to the financial market crisis

Capital position considerably strengthened by new regulatory and prudential rules

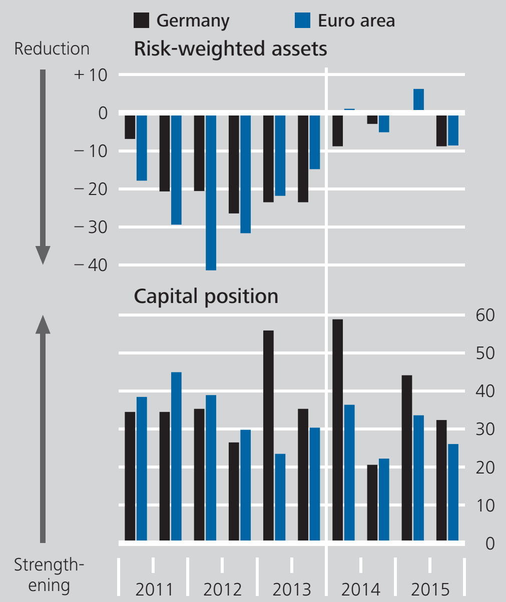
A specific question about the impact of events in the financial markets on the capital position and their potential implications for lending was initially introduced as long as ago as in the October 2007 survey round and was included in the quarterly survey in the following years. Roughly half of the German banks participating in the BLS stated that the initial turbulence and the ensuing crisis had an impact on their capital position, with many of them tightening their credit standards as a result. In the sample for the euro area as a whole, an even higher percentage of banks experienced a negative impact on their capital position and lending, and this situation persisted for the most part up to at least 2010. In 2011, this question was replaced by a series of questions, which appear at a half-yearly frequency in the questionnaire, relating to the impact of ongoing changes in regulatory and supervisory requirements under Basel III[25] on the banks' risk-weighted assets, capital position, funding conditions and lending. In every single half-year since this group of questions was introduced, the German BLS banks have reported that the new regulations have led to a substantial strengthening of their capital position in comparison with each preceding six-month period. Very marked improvements were apparent in the first half of the respective year, as the instrument of profit retention was then available. Especially in the period from the second half of 2011 to the end of 2013, this development was accompanied by a significant reduction in risk-weighted assets, partly by downsizing the stock of riskier loans. In attenuated form, this development has been continuing right up to the present, albeit accompanied of late by an increase in the volume of average loans.

The surveyed banks in the euro area as a whole have likewise been steadily improving their capital position since the group of questions relating to the new regulatory and supervisory requirements was introduced at the beginning of 2011. Compared with the results for Germany, retention of profits was a less significant factor, however, while the issuance of capital instruments played a somewhat more important role. In order to reduce their risk-weighted assets, banks in the euro area cut back their stocks of both riskier and average loans in 2012-13. Funding conditions in Germany and in the euro area as a whole were essentially unaffected by the new regulatory and prudential requirements under Basel III. For the surveyed institutions, these regulations sometimes led to a tightening impact on credit standards for loans to enterprises and loans for house purchase, however, which was stronger in the euro area overall than in Germany, while margins, too, were distinctly widened in this connection in 2012-13.

24 The question related, for example, to any automatic rating downgrade affecting a bank following a sovereign downgrade or changes in the value of the domestic government's implicit guarantee, as well as spillover effects on other assets, including the loan book.
25 The new regulations include, first, the prudential requirements enshrined in CRR/CRD IV. Second, banks need to take account of the capital requirements arising from the comprehensive assessment, which is carried out by the ECB and the competent national authorities of participating member states in accordance with the provisions of the Regulation on the single supervisory mechanism, or from provisions resulting from other specific regulatory or supervisory activities that have recently been adopted or implemented or are likely to be adopted or implemented in the near future.

Impact of regulatory requirements*

%



* Difference between the sum of the percentages of banks responding "increased/improved considerably" and "increased/improved somewhat" and the sum of the percentages of banks responding "decreased/deteriorated somewhat" and "decreased/deteriorated considerably". Requirements include those resulting from the Capital Requirements Regulation (CRR) and the Capital Requirements Directive IV (CRD IV) as well as the comprehensive assessment.

Deutsche Bundesbank

Ad hoc questions on non-standard monetary policy measures

Ad hoc questions on TLTROs, EAPP and negative deposit facility rate

Ad hoc questions relating to some of the non-standard monetary policy measures adopted during the financial crisis were also incorporated into the BLS. Since the introduction of targeted longer-term refinancing operations (TLTROs) in the autumn of 2014, the questionnaire has asked a series of questions at half-yearly frequency on this subject, asking whether banks participated in recent TLTROs or intend to participate in future TLTROs and requesting an explanation of the main reason behind their decisions, as well as a question on the purposes for which the funds obtained are used and the potential impact on the banks' financial situation, credit standards and terms and conditions. Since the first quarter of 2015, alternating with this series of questions, the participating institutions have been asked at half-yearly frequency about the impact of the Eurosystem's expanded asset purchase programme (EAPP) on their financial situation and lending policy as well as the purpose for which the additional liquidity is used. The negative deposit facility rate occasioned the introduction of a further *ad hoc* question in the April 2016 round. This asks the banks about its effects on their net interest income, lending rates and margins.

Targeted longer-term refinancing operations

TLTROs aimed at encouraging additional lending

In June 2014, the Governing Council of the ECB decided to launch a series of eight targeted longer-term refinancing operations (TLTROs) against the backdrop of continued weak bank lending. The partial coupling of such operations to banks' current level of lending to the private sector was designed to incentivise banks to make additional loans to the private sector over and above their existing loan portfolio.[26] This could not, however, preclude institutions from using part of the central bank loans in order to replace maturing market funds or to purchase interest-bearing securities.

Interest in TLTROs greater in other euro-area countries than in Germany

Up to the January 2016 survey round, the German banks participating in the BLS showed only moderate interest on the whole in the TLTROs conducted since September 2014. The institutions took part only in isolated cases and the number of those definitely intending to borrow funds in future TLTROs was very limited. In the euro area as a whole, by contrast, the percentage of institutions participating in the operations – roughly half of the responding BLS banks each time – was initially much higher than in Germany, although, in December 2015, the relevant euro-area figure was only just over one-fifth of the institutions participating in the survey. According to the banks' responses, profitability was the key motive in their decision

26 Details may be found in the ECB press release on TLTROs of 3 July 2014.

to participate, ie their interest in the TLTROs was due primarily to the scheme's attractive conditions. For some institutions, the driving factor was being better able to meet regulatory liquidity requirements or reducing current and/or preventing future funding constraints. The other banks stated that the reason for their non-participation was due almost exclusively to not experiencing any difficulties in funding. The banks that took part in one or more of the six TLTROs up to December 2015 reported that they had used the funds chiefly for lending to firms and households in line with the measure's intended monetary policy purpose, although some of the surveyed banks stated that they also used their funds for substituting other funding sources. Unlike the German banks, which mainly wished to substitute maturing debt, the banks in the rest of the euro area, however, were primarily intending to substitute TLTRO funds for other liquidity-providing Eurosystem instruments. According to information supplied by the surveyed banks, the TLTROs carried out so far have brought about an overall improvement in their financial situation. Banks in the euro area as a whole cited, above all, a strengthening of their liquidity position. In addition, both the participating German institutions and the banks in other euro-area countries reported a positive impact on their profitability, as the preferential conditions of the TLTROs had an easing impact on the cost side. They also reported that their market funding conditions had improved somewhat as a result of the TLTROs.[27] According to the German banks, participation had no impact on their lending policy. The institutions involved in the euro-area-wide sample likewise reported that their participation had not affected their credit standards, although their concrete lending terms, especially for loans to enterprises, had been eased considerably in some cases.

Purposes* for which the funds obtained through targeted longer-term refinancing operations (TLTROs) have been used to date

% of all responding BLS banks; as at the end of 2015 Q4

* Used considerably or somewhat for this purpose.
Deutsche Bundesbank

Eurosystem expanded asset purchase programme

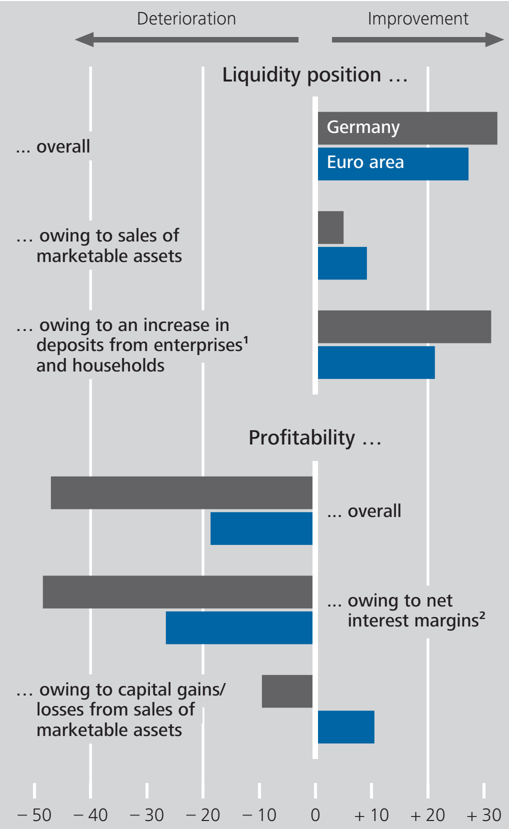
EAPP aimed at securing price stability

On 22 January 2015, the Governing Council of the ECB announced an expanded asset purchase programme (EAPP) encompassing not only a continuation of the existing programmes for purchasing covered bonds and asset-backed securities, but also the intention to buy, under certain conditions, bonds issued by euro-area central governments, agencies and European institutions.[28] Given weaker-than-expected inflation dynamics and heightened risks of a prolonged period of low inflation, the majority of

27 One relevant factor is that, owing to the longer-term nature of the TLTRO refinancing operations, the liquidity risk of the participating banks can be lowered over an extended period of time. Moreover, improved profitability owing to participation in the TLTROs may lead to more favourable conditions when borrowing in the market.
28 For more details, see See Deutsche Bundesbank, Monetary policy and money market developments, Monthly Report, February 2015, pp 23 and 27-28.

Impact of the expanded asset purchase programme (APP)* on banks' liquidity position and profitability**

% of all responding banks; as at the end of 2016 Q1



* Including the corporate sector purchase programme (CSPP). Direct or indirect impact is taken into account. ** Impact over the past six months. Difference between the sum of the percentages of banks responding "improved considerably" and "improved somewhat" and the sum of the percentages of banks responding "deteriorated somewhat" and "deteriorated considerably". **1** Non-financial corporations. **2** Interest income minus interest paid, relative to the amount of interest-bearing assets.

Deutsche Bundesbank

the Governing Council members regarded the expanded asset purchase programme as being necessary to fulfil the Eurosystem's price stability mandate.

Liquidity position improved by EAPP, but considerable strain on profitability

When asked about the direct or indirect impact of the EAPP on their financial situation, the BLS institutions in Germany and the euro area as a whole reported on balance that the programme had led *per se* to a moderate disposal of euro-area government bonds. According to the banks' information, the EAPP had improved both their liquidity position and their funding conditions, especially with regard to covered bonds, leading to the expectation of further improvements also for the six months following the April 2016 survey round. For the German BLS respondents the improvement in the liquidity position was almost exclusively the outcome of customers' portfolio shifts into bank deposits and not due to the banks' own sales of securities. In the euro-area sample, however, banks' own asset sales also played a noticeable role, as it was evidently possible to generate profits with this in some countries. Substituting alternative funding sources as well as lending were cited as the intended use of the additional liquidity in both survey samples. The EAPP had only a minor direct or indirect impact on the banks' capital position. Since the introduction of this *ad hoc* question, most German banks taking part in the survey have also reported that the expanded asset purchase programme has been squeezing their net interest margins and thus denting their profitability. In the euro area as a whole, the surveyed banks reported in the first two survey rounds in spring and autumn 2015 that the EAPP was having a neutral net impact on their profitability owing to capital gains from own asset sales. Since, however, banks in other countries as well have meanwhile discerned a negative impact of the EAPP on their profitability, primarily owing to lower net interest margins, the aggregated survey results for the euro area as a whole, too, have likewise been reflecting this recently. Only banks in periphery countries were still reporting that the EAPP was having a neutral or positive impact on their profitability. For the six months after April 2016, the surveyed banks in the euro area as a whole are anticipating a further negative impact on profitability. Banks stated that the programme was having no significant impact on credit standards and that it was unlikely to have any effect on them in future either. Nevertheless, credit standards in the euro area as a whole, both for loans to enterprises and in business with households, were eased considerably, and further easing is expected in the following six months.

Impact of the negative deposit facility rate

Ad hoc question on the impact of the negative deposit facility rate on profitability, interest rates, margins, lending volumes

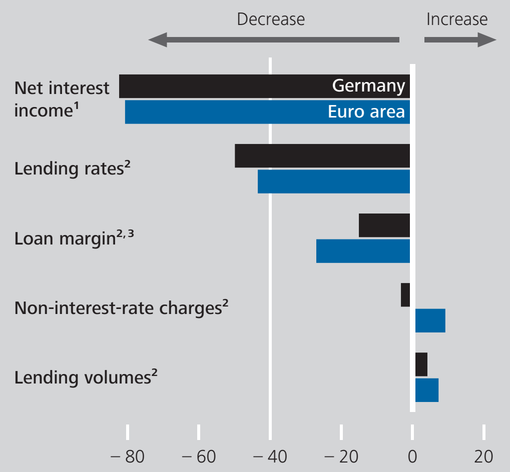
At its meeting on 5 June 2014, the Governing Council of the ECB decided to cut the interest rate on the deposit facility to -0.10%, thus bringing it into negative territory for the first time. From the end of 2014, this measure was followed by three further interest rate cuts to -0.40% at present. The newly introduced *ad hoc* question in the April 2016 survey round asks about the impact of the negative deposit facility rate on banks' net interest income as well as lending rates, loan margins, non-interest rate charges and the lending volume in the three different loan categories. Banks were asked to consider both direct and indirect effects that might occur, even if the bank in question does not possess surplus liquidity.

Decline in net interest income, interest rates and margins due to negative deposit facility rate

According to the information provided by the surveyed banks in Germany as well as in the rest of the euro area and in nearly every member state, the negative deposit facility rate had contributed considerably to a decline in their net interest income over the past six months. More than 80% of the BLS banks in both samples cited slight or considerable negative effects. In line with the usual interest rate pass-through, the negative deposit facility rate played a considerable part in a decline in interest rates in all three surveyed lending categories. There were no reports of lending rate hikes to stabilise margins. The negative rate on the deposit facility, taken in isolation and on balance, made a considerable contribution to the growing pressure on margins during the previous six months. In contrast to the institutions in the euro area as a whole, however, German banks reported that their margins for consumer credit – which they had been able to keep virtually stable overall in the past six months – had not been affected on balance by the negative interest rate. Banks in the German sample also noted positive effects on margins in isolated cases where banks had succeeded in keeping their individual lending rates relatively constant in comparison with lower funding costs. In contrast to Germany, a significant number of the surveyed institutions in the rest of the euro area responded to the negative rate on the deposit facility by raising their non-interest rate charges. Both in Germany and the euro area as a whole, the impact of the negative deposit facility rate on the volume of credit was relatively small overall; as a tendency – in the case of loans to households – there were signs, rather, that the lending volume increased on balance. In April of this year, the German participants in the survey expected the deposit facility rate, on balance, to have an even stronger negative impact on their net interest income over the following six months. With regard to the other surveyed factors, they were anticipating similar effects to those in the six months prior to April.

Impact of the negative deposit facility rate*

%



* Impact over the past six months (direct or indirect). Difference between the sum of the percentages of banks responding "contributed considerably to an increase" and "contributed somewhat to an increase" and the sum of the percentages of banks responding "contributed somewhat to a decrease" and "contributed considerably to a decrease". **1** Difference between the interest earned and interest paid on the outstanding amount of interest-bearing assets and liabilities by the bank. **2** Averages of net percentages for the three surveyed business lines (loans to enterprises, loans to households for house purchase and consumer credit and other lending). **3** Spread of the bank's lending rates on new loans over a relevant market reference rate.

Deutsche Bundesbank

Conclusions

Country-specific BLS data make valuable contribution to monetary policy debate

During the financial and sovereign debt crisis, the Bank Lending Survey, thanks to its flexible design, made a key contribution to a better and near-time assessment of the lending policy of banks in Germany and the euro area as a whole. The *ad hoc* questions also supplied important information for gauging the impact of non-standard monetary policy measures and regulatory initiatives.

Quality of BLS data makes them suitable for a wide range of applications

In Germany, the system of personally interviewing the respondent senior bank executives is especially valuable in ensuring the quality of the surveyed data. The time series which are now available for several *ad hoc* questions, too, are useful not just for preparing monetary policy decisions but also for research analysis and financial stability-related issues. Supply and demand effects on credit growth can be analysed in isolation from each other, for example, as in the case of the highlighted credit supply shocks. Furthermore, analysis of behavioural differences among various categories of banks – for which the current BLS sample is well-suited – can provide relevant and interesting insights, especially in the context of the German banking system.

Analysis of specific questions in the BLS is likely to remain of particular interest in the near future. For Germany, there arises the question of how long the competition-induced narrowing of margins will persist. Rising demand for loans for house purchases in Germany – an ongoing trend since 2010 – will also remain under scrutiny. Not least, interest will also continue to be focused on the – both positive and negative – effects of the non-standard monetary policy measures and the negative deposit facility rate.