Analysis

Bank lending conditions provide early barometer of cyclical shifts in Finnish economy

Monetary policy | 20 February 2023 | Annika Lindblad

AUTHOR



Annika Lindblad
Senior Economist

The lending conditions specified by banks will influence the amount of lending they make and may also reflect the general state of the economy. Bank lending conditions refer to banks' credit standards and terms and conditions for new loans. Data on the demand for and supply of bank loans in Finland is obtained four times a year through the euro area bank lending survey. Changes in bank lending conditions in Finland largely precede changes in the level of investment especially, but also changes in GDP to some extent, while the connection with lending is somewhat looser.



The Finnish version of the arcticle was published in 31 October 2022.

Bank lending is affected by both the demand for loans and the supply situation for loans. The demand for loans is linked especially to the state of the economy and the economic outlook: a brighter outlook encourages businesses to invest and households to consume. The supply of loans, in turn, is affected by banks' credit standards and terms and conditions for new loans, and these are linked to the state of the economy, in addition to, for instance, banks' risk tolerance, their funding costs and competition with other banks and financial institutions.

The euro area bank lending survey (BLS) collects data from banks on changes they have made in their credit standards and terms and conditions, and on changes that banks have detected in the demand for loans. Banks can directly influence the supply of loans, and so changes in credit standards and terms and conditions can influence the level of investment or growth in lending, among other things, in future quarters, too. By contrast, the loan demand reported by banks is instead most likely to reflect the prevailing circumstances in the economy and the credit situation.

The BLS provides information about loan supply that would be difficult to obtain from other variables. Statistics can give us the overall picture for loans but they do not tell us how this has been affected by demand and supply factors. The BLS allows us to separate the different loan demand and supply effects.

This analysis looks at the BLS results for Finland in the context of loan growth and the macro economy. The article presents first the BLS results for Finland, set against the results for the euro area, and then analyses the links between expected and actual credit standards and loan demand as reported in the survey. Finally, an assessment is made, with the aid of correlation analysis, of the relationship between the BLS results and growth in GDP, in investment and in new loans.

When examining the results it is important to remember that the analysis is based on correlations, and these say nothing about the causal relationships between the variables. Tightening credit standards, for instance, could signal a slowing of GDP growth, but without being a cause of it.

ⓘ Kehikko 1. What is the euro area bank lending survey?

The euro area bank lending survey (BLS) is a quarterly survey conducted by the European Central Bank (ECB) and the Eurosystem. It has been carried out since 2003.[1] The survey gathers information from euro area banks on changes in their credit standards[2], terms

and conditions[3] for new loans and loan demand[4] from the previous quarter.[5] The BLS provides important information on the transmission of monetary policy and on changes in bank lending conditions in the euro countries.

The survey covers loans to both enterprises and households, the latter being divided into loans for house purchases, on the one hand, and consumer credit and other lending, on the other[6]. It currently includes 22 standard questions and a variable number of ad hoc questions on specific topics of interest. Eighteen of the standard questions deal with the previous three months, while four deal with the coming three months. Responses are given on a five-point scale (1 = tightened/increased considerably, 2 = tightened/increased somewhat, 3 = basically unchanged, 4 = eased/decreased somewhat, 5 = eased/decreased considerably) and they are reported as net percentages and as diffusion indices.[7] In this article all BLS variables are expressed as net percentages. Responses are scaled such that the maximum figure is 100 and the minimum -100. A negative figure means that more respondents considered credit standards or terms and conditions to be easing than tightening. Similarly, in the demand for loans a negative figure means that more considered loan demand to be decreasing than increasing. Correspondingly, a positive figure means that a majority of respondents considered credit standards or terms and conditions to be tightening rather than easing, or considered loan demand to be increasing rather than decreasing. An index value of zero means that either all banks considered the situation unchanged from the previous quarter, or that the positive and negative responses cancel each other out. The net percentage thus indicates the movement in one direction or the other: the larger the value, the greater the proportion of respondents reporting a particular direction. The net percentage indicates nothing about the magnitude of the change.

BLS responses for Finnish banks have been collected from the very start, but the publication of these did not begin until July 2020. The most recent observations in this analysis are from the second quarter of 2022 (N=79). The BLS results cover the global financial crisis, Finland's recession and the European sovereign debt crisis of the early 2010s, as well as the COVID-19 pandemic at the start of the 2020s.

Changes in bank lending conditions in Finland have been similar to those in the euro area

Overall, the pattern of changes in banks' credit standards and terms and conditions[8] in Finland has been very similar to that in the euro area (Chart 1, Chart 2, Table 1).[9] Bank lending conditions were tightened especially during the global financial crisis and in the early 2010s sovereign debt crisis. Tighter credit standards have typically been prompted by deteriorating cyclical conditions and a worsening outlook, whereas eased credit standards often arise from a more competitive environment. During the global financial crisis, the tightening of terms and conditions was at its most extensive for loans to enterprises.

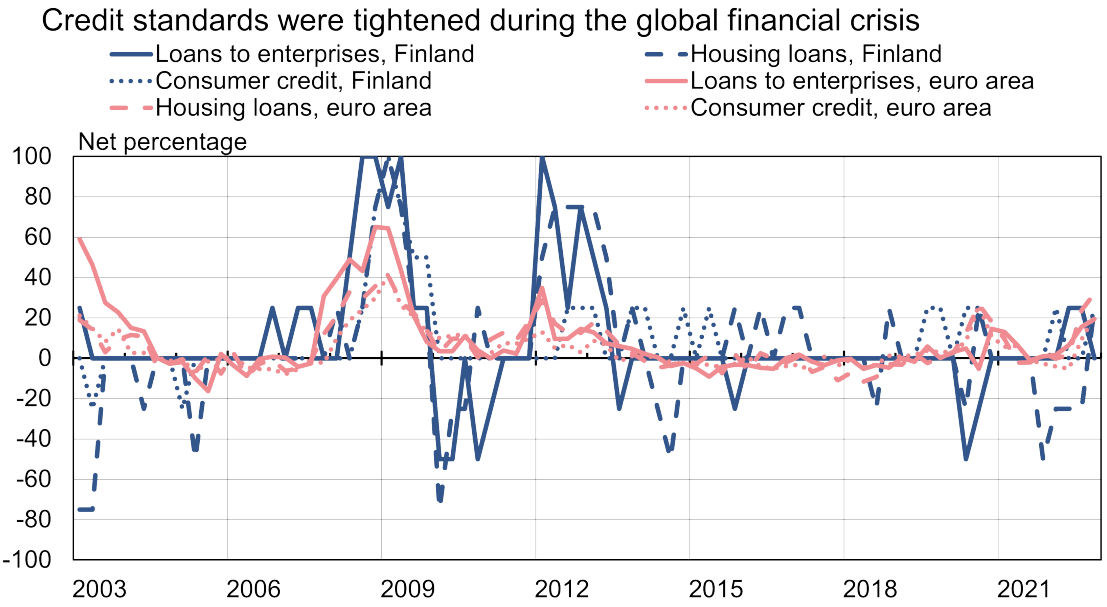
The biggest differences between Finland and the euro area in the changes occurring in credit standards and in terms and conditions were during 2010–2013, in the aftermath of the global financial crisis and during the sovereign debt crisis, when credit standards and terms and conditions were initially eased in Finland but then tightened significantly more widely than in the euro area, especially for loans to enterprises and housing loans. Following this there have been no broad-based or long-term changes in bank lending conditions, except during the COVID-19 pandemic, when credit standards were eased in Finland for housing loans in particular, as a result of heightened competition. The correlation analysis (Table 1) also reveals larger differences in credit standards for housing loans, as the correlation is somewhat weaker for housing loans than other loan categories.

Correlations between the BLS results for Finland and the euro area

	Loans to enterprises	Housing loans	Consumer credit
Credit standards	0.62	0.48	0.64
Terms and conditions	0.67	0.72	0.66
Loan demand	0.04	0.59	0.39

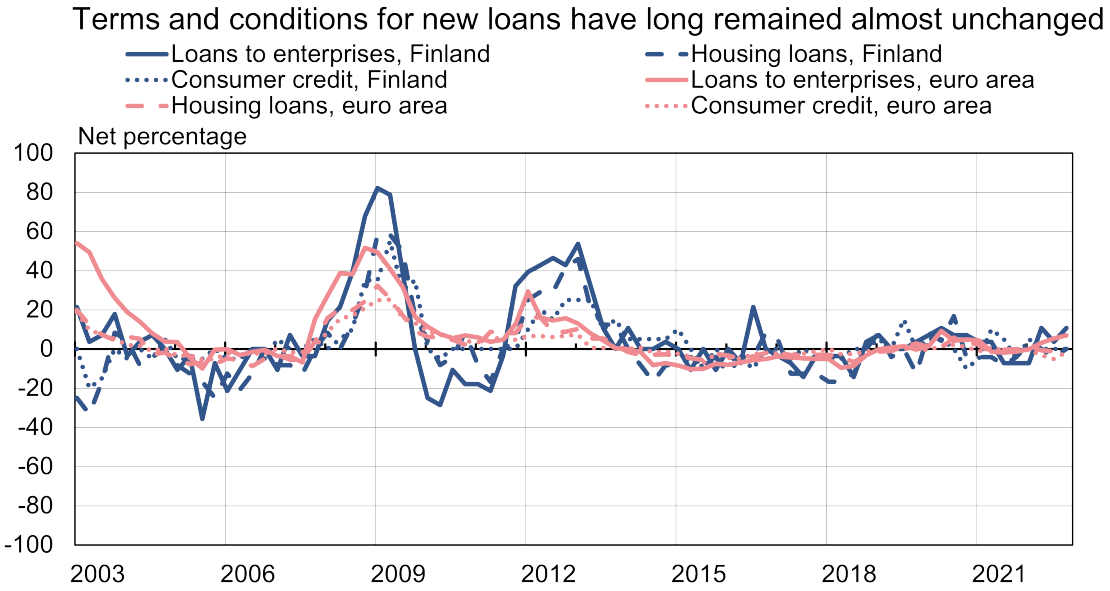
Sources: Bank lending survey (ECB) and calculations by the Bank of Finland.

Chart 1.



Source: Euro area bank lending survey (ECB).
When the net percentages are positive, credit standards are tightening.
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Chart 2.



Sources: Euro area bank lending survey (ECB) and calculations by the Bank of Finland.
The data series are means of the responses to subcomponents of BLS questions 3, 12 and 15. A positive net percentage means that terms and conditions are tightening.
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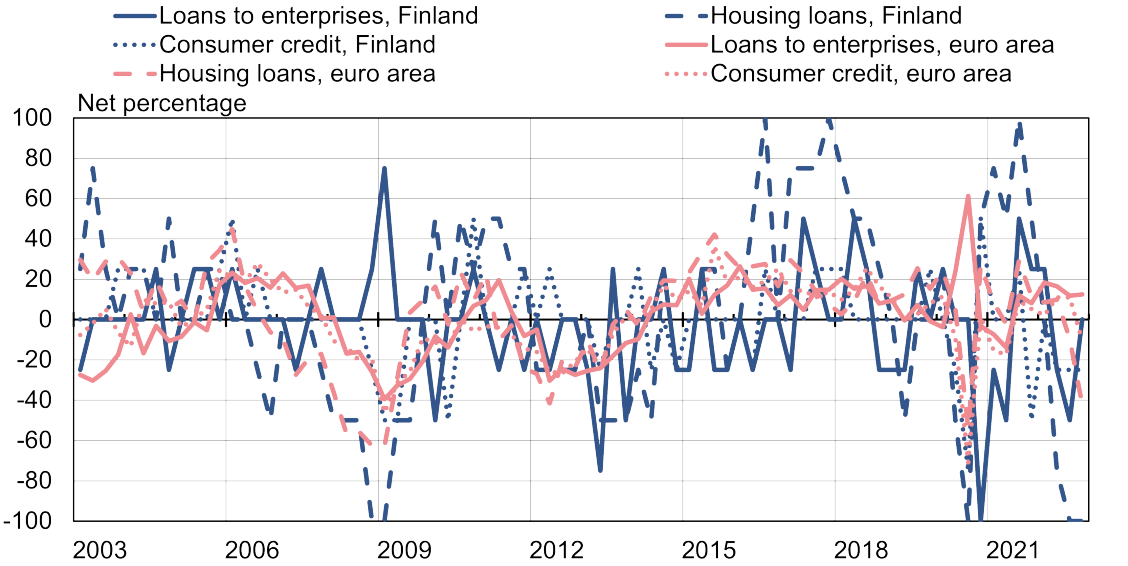
There have been greater fluctuations in loan demand than in credit standards or in terms and

conditions, and the differences between Finland and the euro area have also been larger in respect of loan demand. The pattern of changes has nevertheless been similar, at least for loans to households (Chart 3, Table 1): e.g. loan demand predominantly declined during the global financial crisis and the sovereign debt crisis, and also at the start of the pandemic. On the other hand, in 2016–2018 the demand for housing loans in Finland grew more extensively and durably than in the euro area, aided by strong consumer confidence and the good housing market outlook. Over the past 18 months, the fluctuations in the demand for housing loans in Finland have been more broad-based than in the euro area.

The demand for loans to enterprises in Finland has not followed the euro area path at all (Table 1), e.g. as seen during the global financial crisis, when demand for loans to enterprises increased in Finland while at the same time decreasing in the euro area (Chart 3). During the global financial crisis, the demand for loans to enterprises in Finland increased due to greater short-term borrowing needs and a reduced need for other forms of financing.

Chart 3.

Loan demand has recently weakened more broadly in Finland than in the euro area



Source: Euro area bank lending survey (ECB).
A positive net percentage indicates increasing demand.
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ⓘ Studies show that bank lending conditions, the macro economy and

loan growth are strongly related

The results of bank lending surveys have been analysed extensively from different perspectives in different countries. In addition to the ECB's euro area bank lending survey (BLS) a similar survey is conducted in the United States, the Senior Loan Officer Opinion Survey on Bank Lending Practices (SLOOS). The results of a few of these studies are summarised below.

Köhler-Ulbricht et al. (2016) analyse the results of the BLS for the euro area and in the four largest euro countries, and also the correlations between these results and financial markets and macroeconomic indicators. The article finds that the results of the BLS are closely related to e.g. real economic growth, bank loan growth, confidence indicators and the unemployment rate. Additionally, changes in BLS variables appear to precede changes in macroeconomic variables and loan growth. The analysis relies largely on graphic evidence of connections and includes a comprehensive literature review.

De Bondt et al. (2010) examine the relationship between euro area BLS results and loan growth and GDP growth. The authors find that the BLS is a reliable leading indicator for euro area loan growth and that it offers useful information to forecast GDP growth. The panel regression analysis also includes Finland.

The SLOOS conducted in the United States has been analysed in e.g. Lown et al. (2000) and Lown and Morgan (2006). By applying correlation analysis, regression analysis and VAR models, these papers find that the SLOOS is a predictor of economic growth and bank lending.

Previous studies in different locations thus support the idea that there are connections between the BLS results and the macro economy and loan growth, and that the BLS results can be useful in forecasting these variables and anticipating changes in them. This correlation is usually studied at lags ranging from zero to four quarters.

Expectations have generally provided good predictions of actual outcomes

The questions in the BLS concern both actual and expected changes in credit standards and loan

demand. When examining the results, it is important to know how well the expectations reflect actual outcomes.

An analysis of the actual and expected credit standards and demand shows clearly positive correlations over the whole study period (Table 2). As correlations may change over time, the analysis also examines correlations using 10-year moving windows. These correlations remain mainly positive (Chart 4). Expectations for credit standards concerning loans to enterprises and for housing loans as well as housing loan demand have been particularly good at anticipating actual credit standards and demand, and the positive correlations are statistically significant in all sub-periods, too.[10]

The correlation between expected and actual demand for loans to enterprises is not statistically significant in any of the 10-year windows, although the sign of the correlation is as expected. Regarding consumer credit, expectations for credit standards and demand have not been reliable indicators for actual credit standards or demand since 2018 or 2019, i.e. since the global financial crisis dropped out of the correlation analysis.

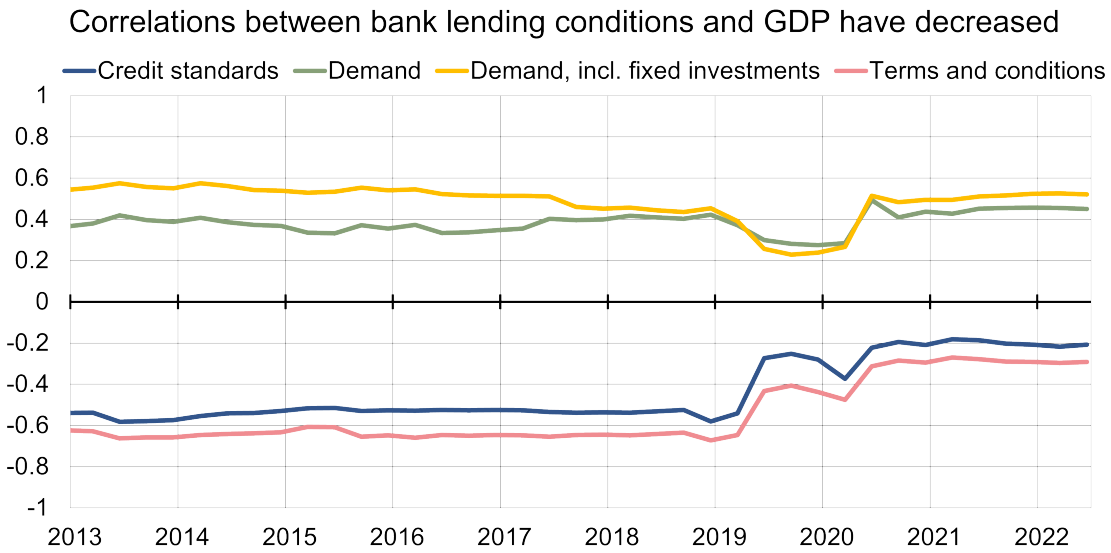
Correlations between actual and expected BLS variables

	Loans to enterprises	Housing loans	Consumer credit
Credit standards	0.76	0.62	0.54
Loan demand	0.19	0.67	0.28

Correlation = corr(BLSexpectation(t|t-1), BLS(t|t)), i.e. the correlation is calculated by comparing the expected outcome for time t predicted at time t-1 against the actual outcome at time t.

Sources: Euro area bank lending survey (ECB) and calculations by the Bank of Finland.

Chart 4.



Sources: Euro area bank lending survey (ECB), Statistics Finland and calculations by the Bank of Finland.
Zero-lag correlation between quarterly GDP growth and BLS variables, calculated with a 10-year moving window. The BLS variables are the mean responses for all the loan categories. Demand incl. fixed investments: demand for loans to enterprises is based on the demand for investment loans.
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BLS and macro economy closely related

Bank lending conditions and loan demand have a multifaceted relationship with the macro economy. On the one hand, the economic situation can affect credit standards, terms and conditions for new loans and loan demand; for example, a deteriorating economic outlook can lead to tighter lending conditions and reduce the demand for loans. On the other hand, changes in credit standards and terms and conditions may also impact the macroeconomic environment (e.g. growth in GDP and investment) through loan growth. The lag at which the correlation between BLS variables and macroeconomic variables is most evident, and how this correlation changes over time, is therefore unclear.

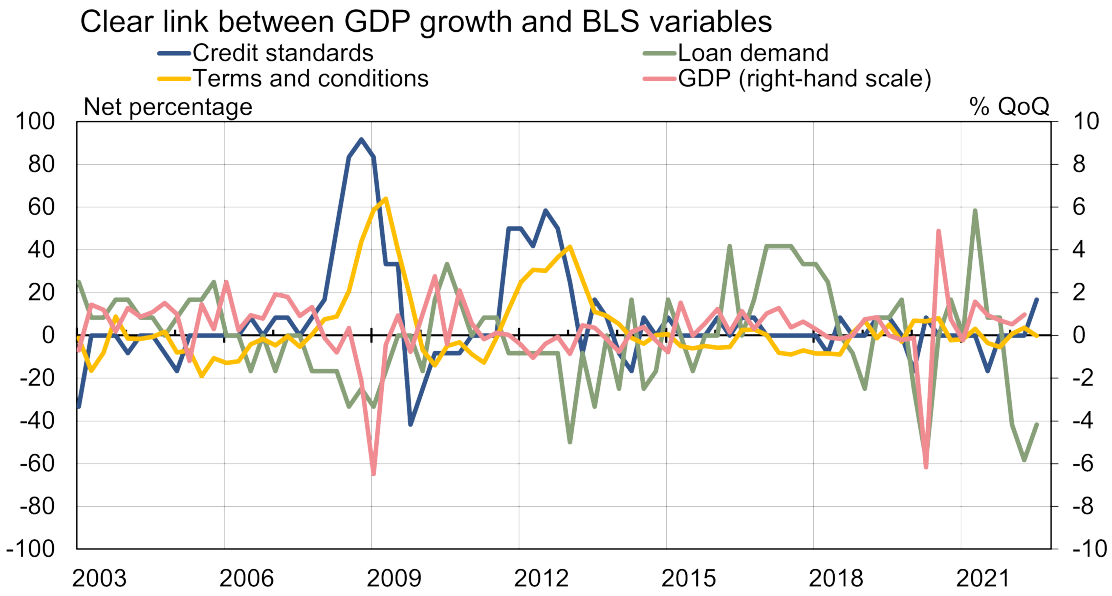
Changes in bank lending conditions are early indicators of GDP growth

Credit standards and terms and conditions for new loans are tightened when the economy is weak, such as during the global financial crisis and the recession of the early 2010s (Chart 5). In such situations, the correlation coefficients are negative and fairly large (Table 3). According to the BLS, the economic outlook has a strong influence on credit standards, especially in a downturn.

There is a clear positive correlation between GDP growth and demand for loans, with the

exception of loans to enterprises. However, cyclical fluctuations have a stronger correlation with the demand for loans to enterprises for fixed investments than with the aggregate demand for loans, since the latter is also significantly affected by the growing short-term financing needs common in weak economic conditions. Based on the BLS results, the recent deterioration in the economic outlook has led to a broad decline in loan demand.

Chart 5.



Sources: Euro area bank lending survey (ECB), Statistics Finland and calculations by the Bank of Finland.

The BLS variables are the mean responses concerning loans to enterprises, housing loans and consumer credit. A positive net percentage indicates tightening credit standards / terms and conditions / increased demand.

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Correlations between BLS results and quarterly GDP growth

	Loans to enterprises	Housing loans	Consumer credit	Average
Credit standards	-0.25	-0.34	-0.47	-0.40
Terms and conditions	-0.41	-0.49	-0.47	-0.49
Loan demand	-0.16 (0.33*)	0.37	0.45	0.39

*Loan demand for fixed investments.

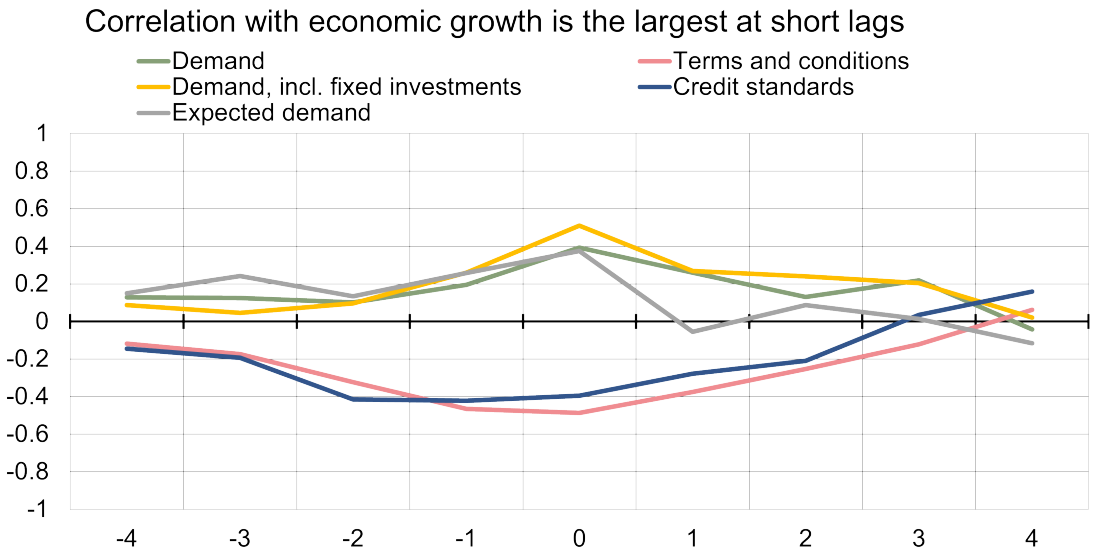
Sources: Euro area bank lending survey (ECB) and calculations by the Bank of Finland.

In addition to zero-lag correlations, it is relevant to look at correlations with different lags.[11] Correlations with a negative lag indicate situations in which changes in BLS variables precede macroeconomic changes, while correlations with a positive lag indicate situations where the macroeconomic variable has changed before the BLS variable. Correlation does not, however, imply a causal relationship between the variables. For example, a correlation with a negative lag is not evidence that changes in the supply of or demand for loans would cause GDP growth to slow or increase.

The largest correlation between credit standards and GDP growth is negative and visible at one negative lag (a negative lag of one quarter), but the correlation is almost as large with a zero lag and with two negative lags (Chart 6). For terms and conditions, the strongest correlation is found at lag zero or at one negative lag. This indicates that bank lending conditions tighten (ease) either slightly before GDP growth declines (strengthens) or at the same time. The correlation coefficients for lags of more than two quarters are close to zero. The correlation coefficients are statistically significant between two negative and two (for credit standards) or one (for terms and conditions) positive lags.

The demand for loans, in turn, increases (declines) as economic growth increases (slows) (Chart 6). The first positive lag is also statistically significant. The correlation between expected loan demand and quarterly GDP growth is similar to that for actual loan demand, with the exception of the smaller correlation at positive lags. The zero lag and first negative lag are statistically significant, meaning that expected loan demand appears to precede GDP growth more clearly than actual loan demand. The results support the view that loan demand reflects the current economic cycles more clearly than credit standards and terms and conditions.

Chart 6.



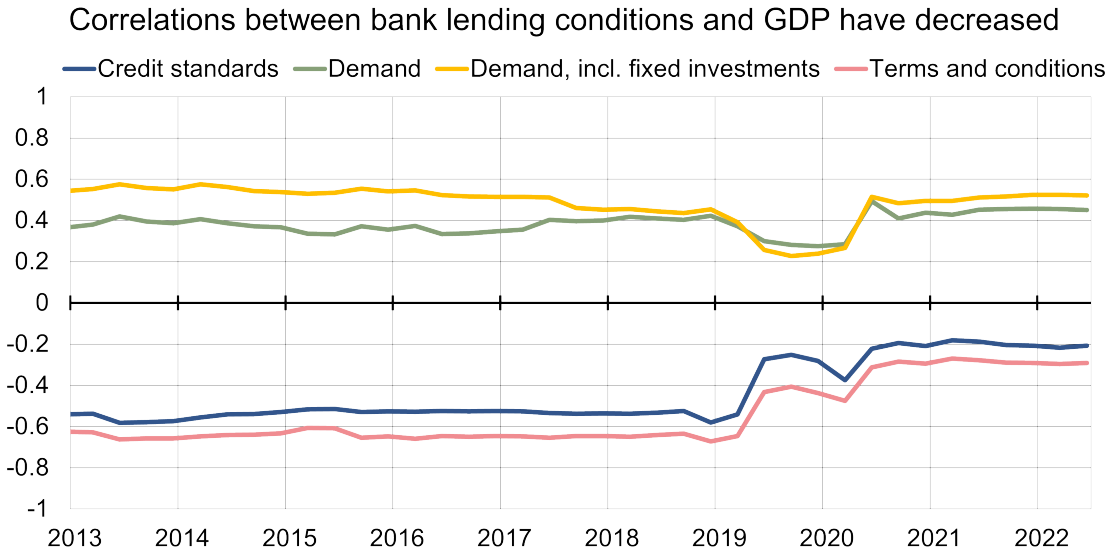
Sources: Euro area bank lending survey (ECB), Statistics Finland and calculations by the Bank of Finland.

Negative lag i: corr(BLS(t-i), GDP(t)). Positive lag i: corr(BLS(t), GDP(t-i)). The BLS variables are the mean responses for all the loan categories. Demand incl. fixed investments: demand for loans to enterprises is based on the demand for investment loans. The GDP variable is quarterly growth.

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Examining the correlations using a 10-year moving window reveals that the correlations between credit standards and GDP and between terms and conditions and GDP are negative over the whole sample period, but also show a clear decrease as the global financial crisis exits the window (Chart 7).[12] The correlation coefficients have not been statistically significant since the beginning of 2019 and the beginning of 2020. Under normal economic conditions, when bank lending conditions and the macro economy remain relatively unchanged, the correlations also decrease. In terms of loan demand, correlations have remained fairly stable over the study period and the correlation coefficients have been statistically significant for the majority of the period.

Chart 7.

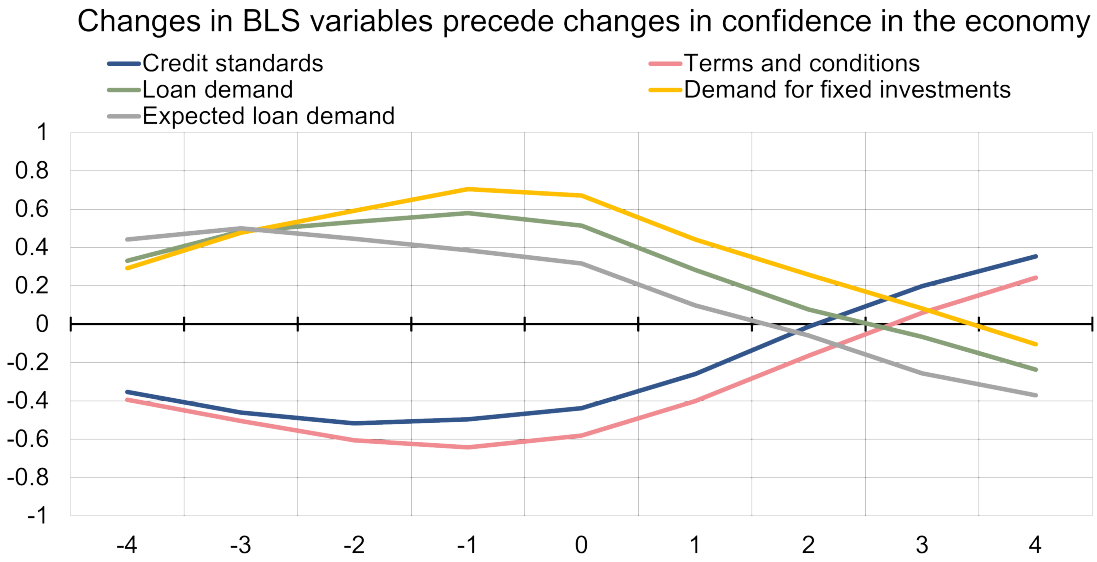


Sources: Euro area BLS (ECB), Statistics Finland and calculations by the Bank of Finland.
Zero-lag correlation between quarterly GDP growth and BLS variables, calculated with a 10-year moving window. The BLS variables are the mean responses for all the loan categories. Demand incl. fixed investments: demand for loans to enterprises is based on the demand for investment loans.
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Changes in bank lending conditions and loan demand are closely related to confidence in the economy. The BLS results indicate that the economic outlook has a key impact on credit standards and loan demand – particularly during weak cyclical conditions. Credit standards and particularly terms and conditions for new loans are statistically significantly and negatively correlated with confidence in the economy, in such a way that changes in bank lending conditions largely precede changes in confidence figures (Chart 8). The zero-lag correlation is also clearly negative.[13] Loan demand has a positive correlation with confidence in the economy that is also statistically significant and is at its largest at one negative lag. The correlation of confidence and expected loan demand is generally not larger than that with actual demand.

Changes in confidence do not strongly signal changes in bank lending conditions or loan demand, even though the first positive lag and in some cases also the later positive lags are statistically significant. The correlations are also larger than with GDP growth. Overall, the BLS seems to provide an early indication of cyclical movements in the economy.

Chart 8.



Sources: euro area bank lending survey (ECB), European Commission and calculations by the Bank of Finland.

Negative lag i: corr(BLS(t-i), ESI(t)). Positive lag i: corr(BLS(t), ESI(t-i)). The BLS variables are the mean responses for all the loan categories. Demand for fixed investments: for loans to enterprises, the variable is demand for investment loans. ESI: economic sentiment indicator. ©Bank of Finland 31.10.2022 41283@ET_Corr_ALL_Conf (EN)

Changes in credit standards precede changes in investment growth

Developments in bank lending conditions are important for investment. For example, tighter credit standards or tighter terms and conditions for new loans may weaken investment growth by decreasing borrowing. If the BLS is an early indicator of general cyclical conditions, it may also signal investment growth at an early stage.

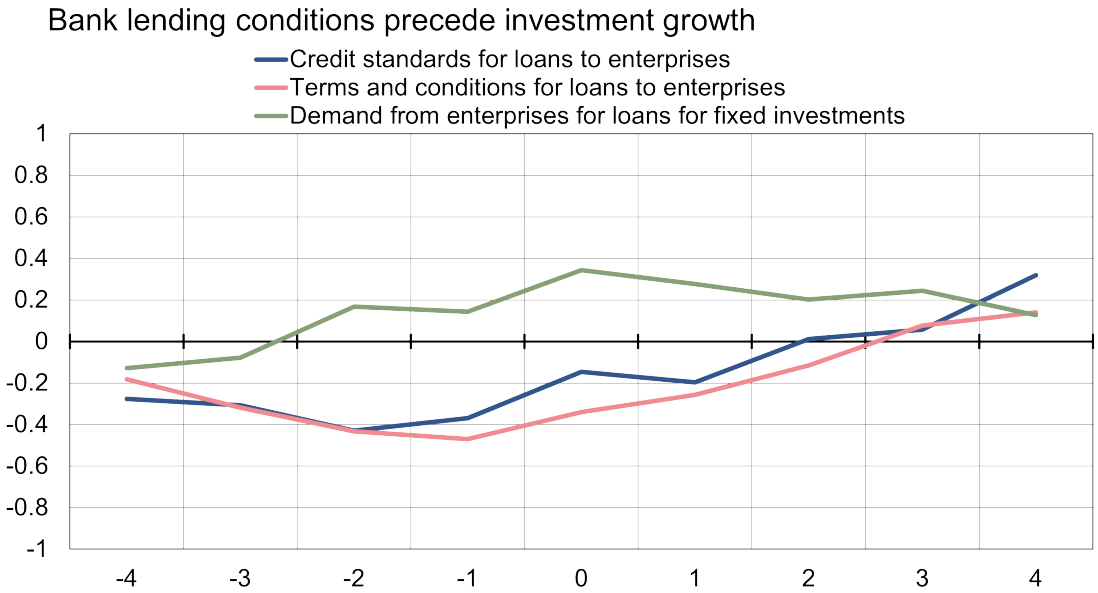
The zero-lag correlation of credit standards for loans to enterprises and investment is not particularly large, but its correlation with terms and conditions is moderate (Table 4). Both credit standards and terms and conditions are most strongly correlated with a lag of one or two quarters (Chart 9): a tightening (easing) of credit standards and terms and conditions is followed by a slowdown (pick-up) in quarterly investment growth, with a lag of one or two quarters. This correlation was visible particularly during the global financial crisis and the sovereign debt crisis (Chart 10). The correlation coefficient for credit standards and investment is statistically significant at all negative lags. Changes in credit standards thus precede changes in investment. In the case of terms and conditions, the first three negative lags and the first positive lag are statistically significant.

Correlation of quarterly investment growth and the BLS variables for loans to enterprises			
	Credit standards	**Terms and conditions**	**Demand for investment loans**
Loans to enterprises	-0.15	-0.34	0.34

Sources: Euro area bank lending survey (ECB), Statistics Finland and calculations by the Bank of Finland.

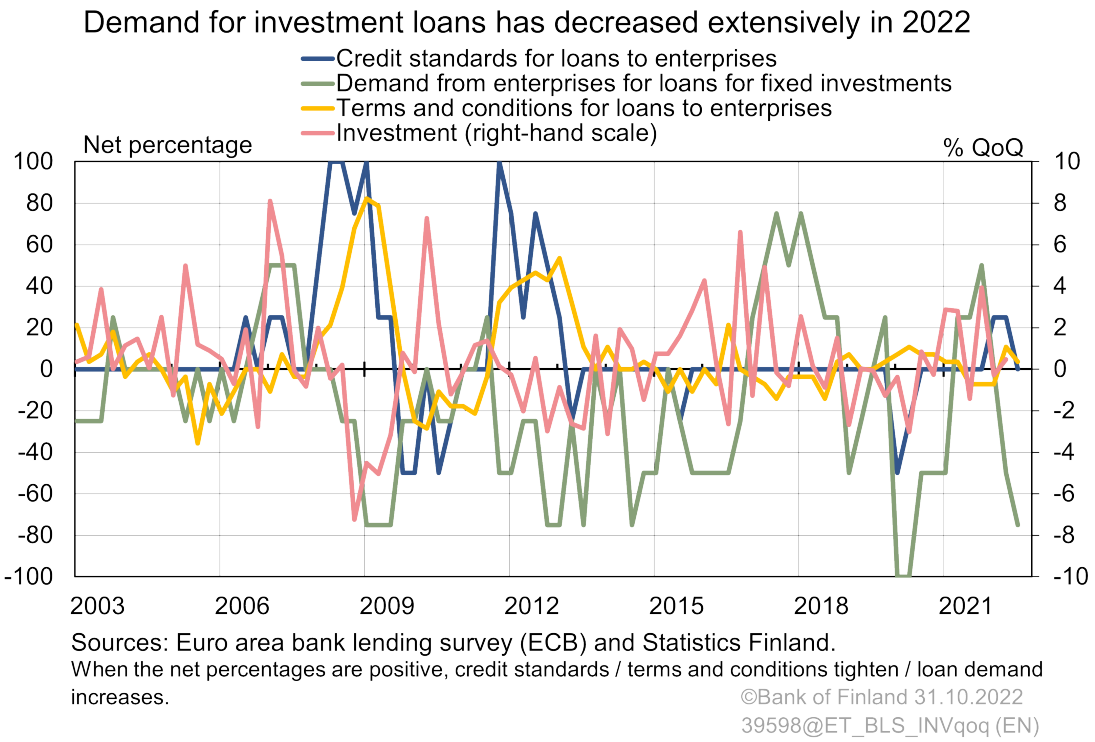
As the demand for loans to enterprises includes a variety of loan needs, it hardly correlates at all with investment. In contrast, there seems to be a clear connection between investment and the demand for loans for fixed investments (Table 4), which was evident during the global financial crisis, the sovereign debt crisis and the COVID-19 pandemic (Chart 10). The correlation between loan demand and investment is largest at lag zero, and the correlations are larger when investment growth precedes growth in loan demand (Chart 9).

Chart 9.



Sources: Euro area bank lending survey (ECB), European Commission and calculations by the Bank of Finland.
Negative lag i: corr(BLS(t-i), Inv(t)). Positive lag i: corr(BLS(t), Inv(t-i)). Quarterly growth in investment.
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Chart 10.



Sources: Euro area bank lending survey (ECB) and Statistics Finland.
When the net percentages are positive, credit standards / terms and conditions tighten / loan demand increases.

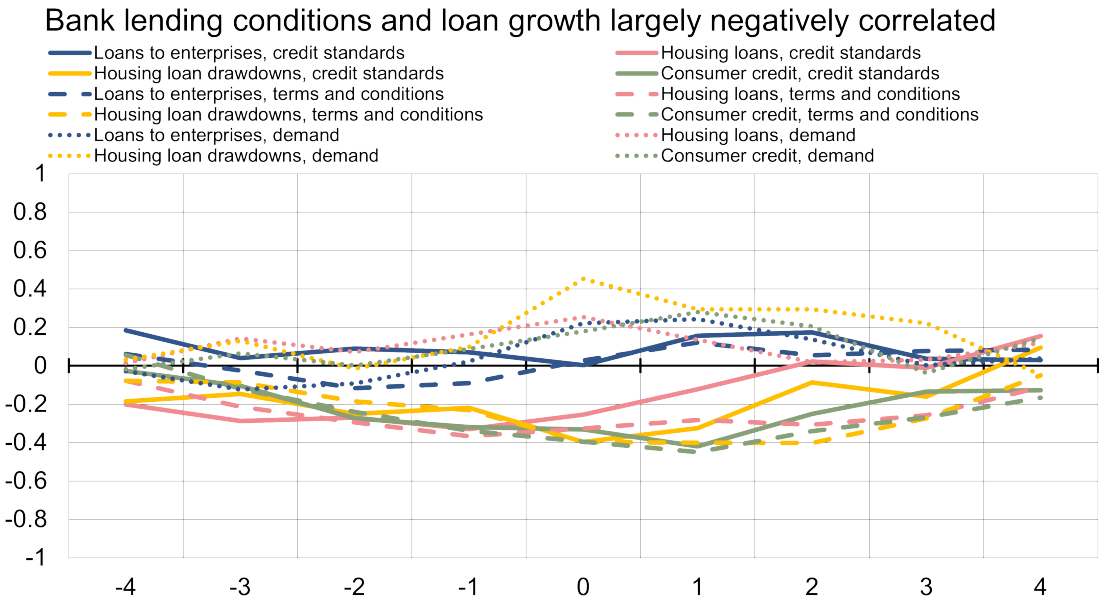
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Connection between loan growth and BLS varies

Loan growth[14] is affected by both the demand for and supply of loans. Loan demand is affected by, for example, the general economic environment, level of interest rates, and expectations regarding the economy. The supply-side factors are banks' credit standards and terms and conditions for new loans, which also change with the economic outlook.

The correlations between growth in loans to enterprises and credit standards and between growth in loans to enterprises and terms and conditions are small at all lags (Chart 11). No strong correlation is observed between bank lending conditions and growth in loans to enterprises. The correlations between loan growth and credit standards for loans to enterprises and between loan growth and terms and conditions are mainly very close to zero in all periods (Chart 12).

Chart 11.



Sources: Euro area bank lending survey (ECB) and Bank of Finland.
Negative lag i: corr(BLS(t-i), loan growth(t)). Positive lag i: corr(BLS(t), loan growth(t-i)). Quarterly growth in new loans and drawdowns of housing loans.
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In household loans, the correlations between loan growth and credit standards and between loan growth and terms and conditions are stronger and largely negative (Chart 11). In other words, there is a relationship between the slowdown (pick-up) in loan growth and the tightening (easing) of credit standards and terms and conditions.

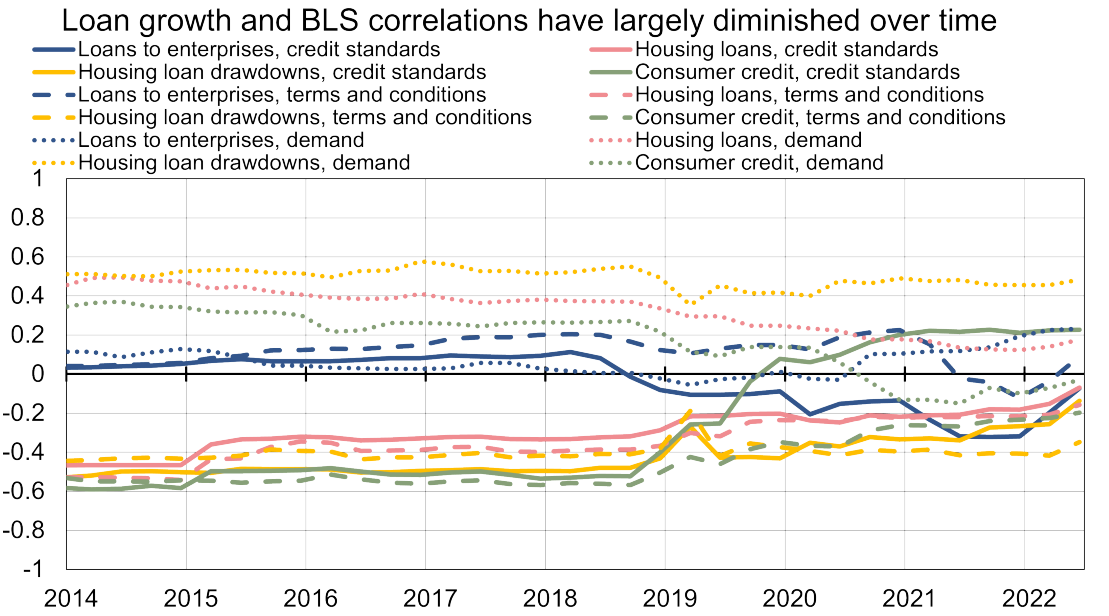
The correlation between new housing loans and credit standards is largest at the first negative lag. At the second and third negative lag, the correlation is also statistically significant (Chart 11). A tightening (easing) in credit standards thus precedes a slowdown (pick-up) in loan growth. The correlation of drawdowns of new housing loans with credit standards is largest at lag zero, and the first positive lag is statistically significant, too.

The correlations of housing loan terms and conditions are statistically significant at both negative and positive lags (Chart 11). In other words, a tightening (easing) of terms and conditions is followed by a slowdown (pick-up) in loan growth, but a slowdown (pick-up) in loan growth is also followed by a tightening (easing) of terms and conditions.

The correlations between growth in housing loans and credit standards and between growth in housing loans and terms and conditions have remained negative throughout the review period (Chart 12). The correlations have, however, diminished over time, as, for example, the global financial crisis and the sovereign debt crisis exited the 10-year window, and in recent years the

correlations have no longer been statistically significant. As to new drawdowns of housing loans, its correlation coefficients with terms and conditions and with credit standards have been statistically significant in nearly all the periods.

Chart 12.



Sources: Euro area bank lending survey (ECB) and Bank of Finland.
Zero-lag correlation between quarterly loan growth and BLS variables calculated over a 10-year rolling window.
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Consumer credit sees the strongest correlation with credit standards and terms and conditions for new loans at the first positive lag, indicating that slower (faster) loan growth is followed by tightening (easing) of credit standards and terms and conditions (Chart 11). On the other hand, as the first two negative and positive lags are statistically significant, the opposite also seems to hold true, i.e. tightening (easing) of credit standards and terms and conditions is followed by slower (faster) loan growth.

Tightening credit standards are connected with slowing consumer credit growth in all time periods (Chart 12). The correlation between consumer credit standards and loan growth has turned positive in recent years. Since the global financial crisis, changes in consumer credit standards have been uncommon and short-lived.

With all loan categories, demand sees the strongest correlation either at lag zero or at the first positive lag, and these are also primarily the lags at which the correlation coefficients are statistically significant (Chart 11). This indicates that changes in loan demand do not seem to precede changes in loan growth. As expected, the correlations are predominantly positive,

implying that stronger loan growth is associated with higher loan demand. The correlations for expected demand are generally weaker than those for actual demand.

The demand for housing loans and housing loan growth have both moved in the same direction, although the correlations have decreased especially in respect of new housing loans (Chart 12). The correlation between consumer credit and loan demand has been close to zero in recent years. The correlation between the demand for loans to enterprises and growth in such loans has been around zero in all time periods.

ⓘ BLS useful in predicting macroeconomic variables

The Granger causality test is a statistical hypothesis test for determining whether one time series is useful in forecasting another. Granger causality does not, however, capture true causal relationships between variables. Granger causality relationships can be unidirectional or bidirectional. A bivariate VAR(4) model forms the basis of the hypothesis test.

Granger causality between actual and expected credit standards and between actual and expected demand is predominantly unidirectional in the sense that actual credit standards or demand are useful in predicting expectations. In the case of credit standards for housing loans, Granger causality is bidirectional.

Granger causality between GDP and credit standards and between GDP and terms and conditions is unidirectional in the sense that the BLS variables are useful in predicting quarterly GDP growth. In the case of loan demand and GDP (or investment), there is no Granger causality in either direction. In respect of expectations, the Granger causality relationships vary more across different loan categories. There is bidirectional Granger causality between investment and credit standards, whereas terms and conditions and expected credit standards are useful in predicting investment, but not vice versa.

From the perspective of Granger causality, the relationship between loan growth and the BLS variables is weaker than that between the BLS and macroeconomic variables. In respect of credit standards for loans to enterprises and growth in such loans, there is Granger causality from the BLS to loan growth, while for terms and conditions Granger

causality runs in the opposite direction. No Granger causality is detected between the demand for loans to enterprises and growth in such loans, or between housing loans and the BLS variables. Data on consumer credit is useful in predicting the demand for consumer credit.

Bank lending surveys help in economic monitoring

Credit standards, terms and conditions for new loans and loan demand have fluctuated in Finland over time in line with the business cycle, among other things. For example, bank lending conditions were tightened significantly during the global financial crisis and the sovereign debt crisis. In times of crisis, there is a strong relationship between the results of the BLS and economic conditions, while in calmer times the changes are more moderate and short-lived, and the correlations smaller. Hence, in many cases the relationships have become weaker. Expectations obtained in the BLS predict actual developments fairly well, especially in the case of housing loans and loans to enterprises. When examining the results, it is important to remember that the analysis presented here is predominantly based on correlations, and these say nothing about the causal relationships between variables.

Credit standards and terms and conditions display a strong connection with the macro economy, consistent with the results for other countries (see 'Studies show that bank lending conditions, the macro economy and loan growth are strongly related'). Changes in credit standards and terms and conditions largely precede changes in the level of investment especially, but also changes in GDP growth to some extent, and may be useful in predicting these. Therefore, bank lending conditions do not just react to cyclical shifts in the economy with a lag but actually provide an early indication of shifts in the business cycle.

The relationship between bank lending conditions and loan growth, in turn, is somewhat looser in Finland. In the case of loans to enterprises, there is no clear relationship between bank lending conditions and loan growth, although credit standards may have some predictive power. As for housing loans, changes in bank lending conditions predominantly precede changes in loan growth but were found to have no predictive power in the analysis presented here. In respect of consumer credit, changes in loan growth and in bank lending conditions are fairly simultaneous. Changes in the demand for loans generally occur simultaneously with changes in both the macro economy and loan growth.

In conclusion, information gained from the BLS may play a particularly important role in the analysis of cyclical conditions and investment. However, further research on the relationship

between credit growth and the BSL would also be welcome. Although the analysis presented here did not find a strong connection between loan growth and bank lending conditions as reported in the BLS, it would be interesting to explore the topic further in a more comprehensive empirical analysis using a time series model.

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Notes

1. More information on the euro area banking lending survey (BLS) is available at: https://www.ecb.europa.eu/stats/ecb_surveys/bank_lending_survey/html/index.en.html. ↑
2. 'Credit standards' refers to a bank's internal guidelines on loan approval which are established prior to the actual negotiation of loan terms and conditions. A more detailed definition is given on the ECB website. ↑
3. 'Loan terms and conditions' refers to the conditions under which a bank is ready to grant a loan (new or refinanced). Generally the reference rate is agreed along with the margin, collateral and the loan maturity. The loan terms and conditions may change in parallel with credit standards or independently of them. A more detailed definition is given on the ECB website. ↑
4. 'Loan demand' means the gross demand for loans to enterprises and to households, including loan rollovers and loans that were applied for but not given approval. A more detailed definition is given on the ECB website. ↑
5. The BLS data for every euro country is available in the ECB's Statistical Data Warehouse: https://sdw.ecb.europa.eu/browse.do?node=9691151. ↑
6. For the sake of brevity, the category 'consumer credit and other lending to households' is referred to from this point onwards in the article as 'consumer credit'. ↑
7. Net percentage = 'quantity of responses 1 and 2' – 'quantity of responses 4 and 5'. Response 3 is given a weighting of 0. The diffusion index is formed in the same way, except that the more extreme responses 1 and 5 are given double the weighting of responses 2 and 4. ↑

8. The terms and conditions series used here is an average of the subcomponents under the question on terms and conditions for new loans: margins on average and riskier loans, maturities, non-interest rate charges, collateral requirements and loan sizes. The average also takes into account covenants in the case of loans to enterprises, and in the case of housing loans the loan-to-value ratio. ↑
9. The survey's sample size in Finland is, of course, significantly smaller than in the euro area, and this means there is greater fluctuation in all the Finnish results. ↑
10. In this analysis, statistical significance refers to whether or not a correlation coefficient differs from zero in a statistically significant manner. The threshold used for statistical significance is a p-value of less than 0.05. ↑
11. The BLS is published before the first national accounts for the corresponding quarter. Therefore, a strong zero-lag correlation also demonstrates the ability of BLS variables to reflect the economic situation at a relatively early stage. ↑
12. For the sake of simplicity, the analysis only focuses on rolling correlations with zero lag, since in many cases the zero-lag correlation is among the largest correlations. However, if positive and negative lags are also analysed, the results may differ from those presented here. ↑
13. Confidence in the economy is compiled on a monthly basis, and so zero-lag correlation could be assumed to be high. When the BLS is compiled, the respondents have at their disposal confidence figures for two or three months of the quarter in question. ↑
14. Quarterly growth in new loan agreements. The loan agreements are divided into loans to enterprises, housing loans and consumer credit (the term used in this article to cover consumer credit and other household loans). Households' new drawdowns of housing loans are also examined. Data source: New business on loans and new drawdowns of household loans (suomenpankki.fi). The series are seasonally adjusted and aggregated from monthly data to quarterly data. The results obtained may vary according to the particular modifications and loan series used. ↑

The opinions expressed in this article are those of the authors and do not necessarily represent the views of the Bank of Finland.

Keywords

banks, BLS, Finland, lending, macroeconomics, survey