

How should the countercyclical capital buffer requirement be applied?

25 April 2014

The countercyclical capital buffer requirement is one of the new macroprudential instruments that will come into use in Finland. It enables the strengthening of the banking sector's resilience to systemic risks resulting from excessive credit growth. In setting the requirement, strong emphasis should be placed on a small range of indicators to be selected, defined and published in advance. In contrast, reducing or releasing the buffer should primarily be based on judgment by the relevant authorities.

Lending grows rapidly in economic upswings and slows or even contracts in downturns. Hence, lending is typically procyclical and may therefore amplify the economy's cyclical fluctuations and financial crises. A new regulatory instrument – the countercyclical capital buffer requirement – is aimed at strengthening the banking system's lending capacity in times of crisis and possibly also at curbing lending growth when it is fastest.

The countercyclical capital buffer requirement is normally set by a designated national macroprudential authority to supplement, whenever necessary, minimum capital requirements imposed on banks. It is recommended that the requirement be set in a situation where authorities assess credit to the private sector to be growing at a perilously rapid pace and consequently to be threatening the stability of the financial system. The buffer requirement may be removed in an economic downturn, which will free up banks' own funds for coverage of potential losses and maintenance of lending.

The countercyclical capital buffer requirement is included in the reform package of the banking regulation (Basel III), published by the Basel Committee on Banking Supervision in December 2010. In Finland, the Board of the Financial Supervisory Authority (FIN-FSA) will, according to a Government bill, decide on setting this variable additional capital requirement and its respective size, as required. FIN-FSA will make such a decision for the first time in the first quarter of 2015, and thereafter at least on a quarterly basis.

Objectives and transmission mechanisms of countercyclical capital buffers

The use of countercyclical capital buffer requirements and other macroprudential instruments has two key objectives: improving the crisis resilience of the financial system and reducing the sharpest fluctuations in lending. These objectives can be achieved through many transmission channels (Chart 1).

Banks' loss absorbency would be best strengthened if the banks responded to the imposition or tightening of the countercyclical capital buffer requirement either by raising more capital from their owners or the financial markets, or by accumulating retained earnings. However, especially banks with poor profitability performance may also cut their high-risk lending, in particular, in order to meet more stringent requirements. Tightening regulation may also encourage lenders to reduce their excess capital buffers held voluntarily



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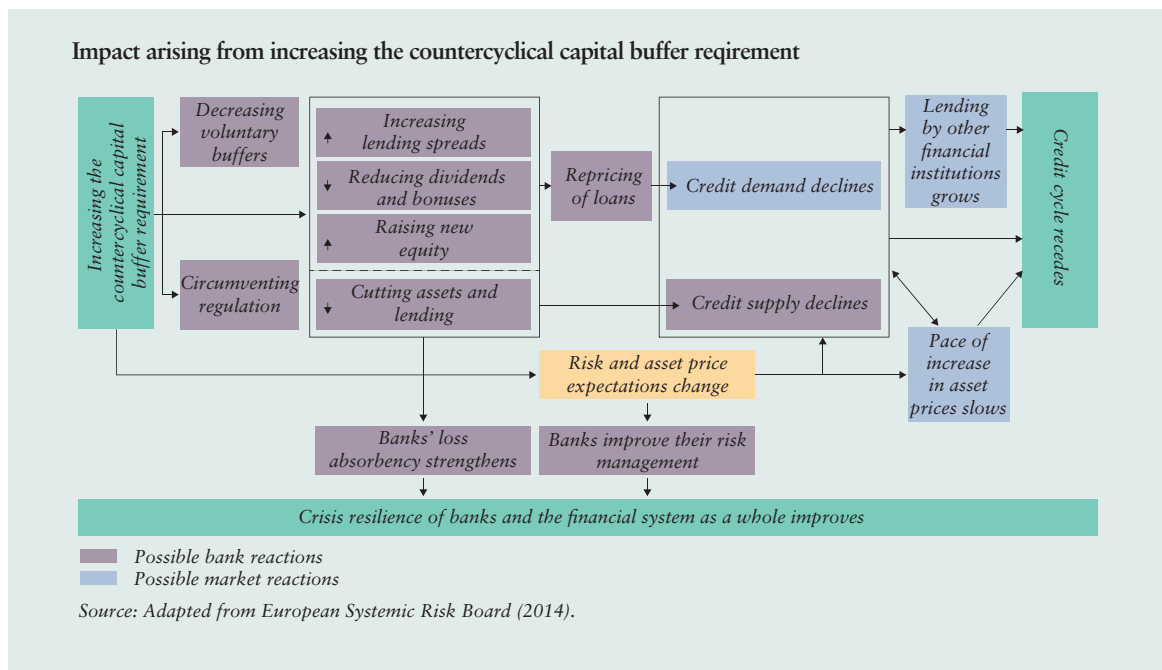


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Chart 1.



or to circumvent regulation in various ways.

Empirical evidence suggests that higher capital requirements increase, at least moderately, the overall cost of bank funding as share capital for banks is more costly for a number of reasons than debt funding.¹ As a consequence of higher funding costs, banks may be tempted to widen margins on their customer loans, which will reduce credit demand, thus smoothing the credit cycle.²

The use of the countercyclical capital buffer requirement can also

¹ The views of many economists and representatives of the banking industry on the high cost of bank share capital differ a lot. A good overview on this discussion is provided by the publication Admati – Hellwig (2013), notably chapter 7.

² The frequency, timing and amplitude of credit cycles and business fluctuations may differ considerably (see Borio 2012). Credit cycles are, on average, clearly longer than business cycles.

smooth credit cycles and improve risk resilience indirectly by impacting on the expectations and behaviour of various market participants. For example, the growth rate of housing loans may decelerate if households think that setting the buffer requirement slows the pace of increase in housing prices. Activation of the buffer requirement could also increase lenders' risk awareness. Theoretical studies have found that countercyclical capital buffers can hold back ineffective investment activity in the real economy during cyclical upswings, but additional capital requirements should not be put in place during downturns, as the requirement could suppress even good investments.³

³ Jokivuolle et al. (2014).

As only a few countries have put in place the countercyclical capital buffer requirement, no empirical evidence of the relative importance of different transmission channels (Chart 1) is yet available. Even so, analyses relating to Basel III can be made use of in the impact assessments.

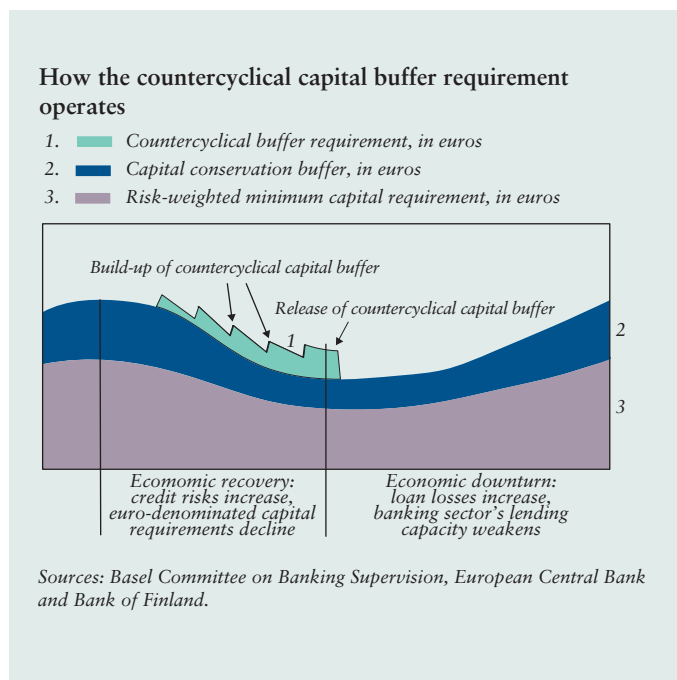
The world's largest banks have mainly responded to the ongoing tightening of capital requirements in the manner hoped for: they were able to considerably bolster their capital positions within a short period of time (in 2009–2012) without much pulling back from their lending or significantly widening their margins on customer credit.⁴ Moreover, the banks did this in a challenging operating environment following the global financial crisis.

The introduction of the countercyclical capital buffer is recommended in a cyclical phase propitious for banking, marked by brisk credit demand, sound bank profitability and advantageous funding conditions (Chart 2). In such a situation, it is easier than normal for banks to boost their capital levels. Consequently, the countercyclical capital buffer requirement – in those cyclical situations where the tool is recommended – is likely to prove an effective means of improving the risk resilience and lending capacity of the banking system.

In contrast, there is a possibility that the countercyclical capital buffer requirement will only reduce fluctuations in the credit supply to a limited extent. Most theoretical and empirical

⁴ Cohen – Scatigna (2014).

Chart 2.



analyses suggest that an overall tightening of capital requirements also has only a small impact on credit growth and bank loan margins.⁵ In a strong cyclical upswing, the effects may be even smaller than normal due, among other things, to the abundance of alternative sources of finance other than banks. Some other macroprudential instruments could therefore be more effective tools for reining in lending fluctuations than the countercyclical capital buffer requirement.

Implementation of the countercyclical capital buffer in the EU and Finland

In the European Union, the Capital Requirements Directive, adopted in

⁵ A one percentage point increase in banks' capital ratios is estimated to raise lending spreads on bank credit by about 0.05–0.20 of a percentage point (Cohen and Scatigna 2014, Table 1).

2013, lays down provisions on the countercyclical capital buffer. The laws of each EU Member State are to specify the national details of the buffer requirement and to designate the authority in charge of imposing the countercyclical buffer requirement for credit exposures to the Member State in question.

As a rule, the countercyclical buffer rate can be set between 0% and 2.5%, but the Directive also allows a higher buffer rate if it is necessary for the prevention of systemic risks. The capital buffer requirement for an individual bank is constructed as a weighted average of the buffer rates set in different countries, with the bank's exposures to each country serving as weights.

In April 2014, the Finnish Government submitted a bill to Parliament on reforming the Credit Institutions Act.⁶ The bill includes provisions on setting the countercyclical capital buffer requirement for banks operating in Finland. According to the Government bill, the countercyclical buffer rate (referred to in the bill as the variable additional capital requirement) in Finland may not exceed 2.5% of the total amount of banks' risk-weighted balance sheet items and off-balance sheet items.

The Government bill designates the FIN-FSA Board as the decision-making authority with respect to the capital buffer. Acting in concert with the Ministry of Finance and the Bank of Finland, FIN-FSA is to review quarterly the need to change the existing capital requirement or to keep it unchanged. In

addition, FIN-FSA must deal with the matter whenever the Ministry of Finance or the Bank of Finland so require, or if the European Systemic Risk Board (ESRB) issues a recommendation on the matter. FIN-FSA is required to consult the Ministry of Finance, the Ministry of Social Affairs and Health and the Bank of Finland in advance of decision-making (Chart 3).

FIN-FSA must publish its decision on the countercyclical capital buffer. A justification for the decision needs to be provided, and the entry into force of the decision must be announced. The requirement will become effective 12 months after the decision, unless there are specific reasons for faster implementation.

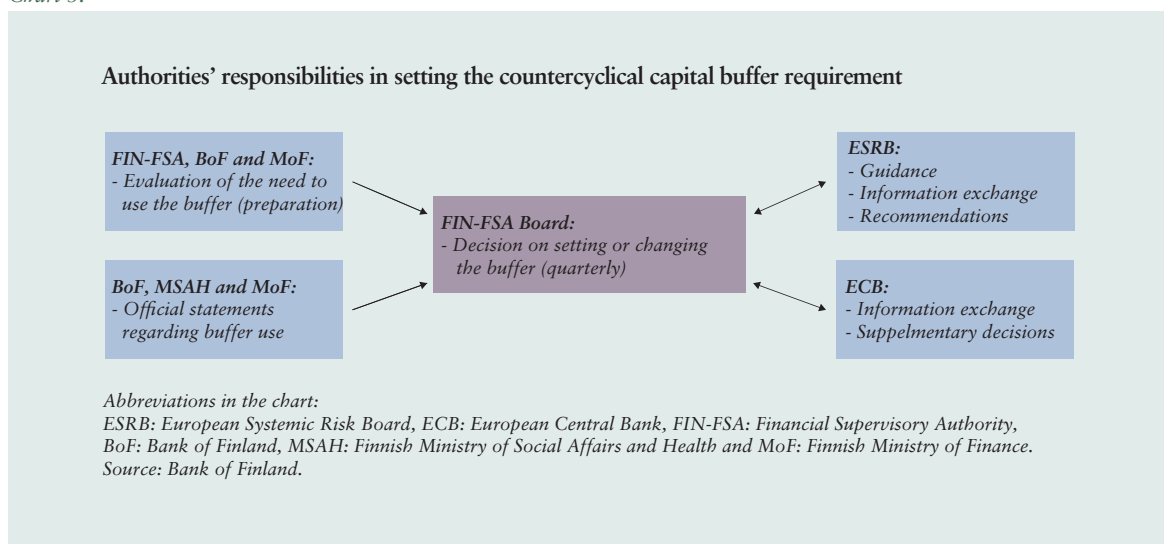
According to the Government bill, decisions on the countercyclical capital buffer must primarily be based upon the taking into account of the deviation of the credit-to-GDP ratio from its long-term trend. However, in addition to this ratio, or for a particular reason instead of this ratio, other factors may also be considered as a basis for decision-making. The grounds for decisions on the buffer requirement will be specified in a Ministry of Finance Decree in due course.

In making its decision, FIN-FSA must also take into account the recommendations and warnings issued by the European Systemic Risk Board. According to the EU Capital Requirements Directive, the European Systemic Risk Board may give guidance for setting the countercyclical capital buffer requirement. The Board is currently finalising its first set of guidance.

The Government bill foresees FIN-FSA assessing the size of the capital requirement quarterly, in cooperation with the Ministry of Finance and the Bank of Finland.

⁶ Government bill to Parliament for an Act on credit institutions and certain related Acts (HE 39/2014vp).

Chart 3.



In connection with establishing a banking union, some macroprudential tasks have been conferred on the European Central Bank (ECB). These include the power to influence the size of the countercyclical capital buffer requirement in countries participating in the banking union. Prior to its quarterly decision on the size of the buffer requirement, FIN-FSA must notify the ECB of its intention and take the ECB's viewpoints into account in its final decision.

In accordance with the Regulation⁷ concerning the Single Supervisory Mechanism, the ECB may impose a higher countercyclical capital buffer requirement in Finland, instead of FIN-FSA.⁸ In such a case, the ECB must

cooperate closely with FIN-FSA, notify FIN-FSA in advance of its intention to apply a higher requirement and take FIN-FSA's viewpoints into consideration.

In setting the countercyclical capital buffer requirement, a primary role should be assigned to key indicators

Given that systemic risks can manifest themselves and develop in a number of multifaceted ways, the size of the buffer requirement should not be mechanically based on single indicators pre-selected by the authorities, but a more broad-based judgment is also required. However, the indicators should provide strong guidance for the decision-making process, as the authorities may be inclined to apply the countercyclical capital buffer requirement and other macroprudential tools too infrequently, too late and too timidly.⁹

⁷ Council Regulation (EU) No 1024/2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions.

⁸ The ECB has the same power also with respect to other countries participating in banking union.

⁹ European Systemic Risk Board (2014).

The reason for the authorities' inaction may be that the measures taken rapidly lead to obvious or presumed costs for the financial sector and its customers, while the benefits only materialise over the long term and are harder to perceive as being associated with the measures, than with the drawbacks.¹⁰ Consequent application of the indicators in the use of the buffer requirement would help the authorities avoid those same – often cyclical – false conclusions that occasionally fuel excessive optimism or pessimism in the private sector.¹¹

The buffer requirement should be set early enough, which would allow time for gradually increasing the requirement to a sufficiently high level, prior to the materialisation of systemic risks from excessive credit growth. This also enables the reduction of

adjustment costs caused by the implementation of prompt measures. Banks' existing strong capital positions could help to reduce such costs. However, the banking sector's strong capital adequacy should not be a barrier to putting the buffer requirement in place.

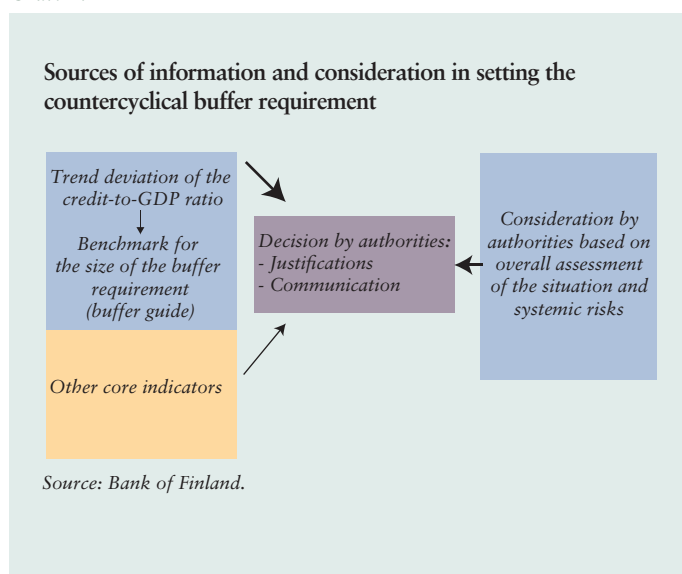
In setting and changing the countercyclical capital buffer requirement, Finland could opt for a procedure under which the decision-making authority, the FIN-FSA Board, exercising its judgment, would decide on the buffer requirement but the decisions would be guided by two layers of rules and indicators (Chart 4).

According to the EU Capital Requirements Directive, the first rule of decision-making consists of taking into account the deviation of the credit-to-GDP ratio from its trend and a buffer guide, calculated on the basis of this ratio, as a benchmark for the size of the buffer requirement. The ratio and the buffer guide should be calculated in line with the guidance to be provided by the Basel Committee on Banking Supervision and the European Systemic Risk Board.¹² Other key indicators compliant with the guidance provided by the European Systemic Risk Board and other calculations of credit-to-GDP ratios would be used as secondary justifications for the decisions.¹³

¹⁰ European Systemic Risk Board (2014).

¹¹ See eg Shiller (2005).

Chart 4.



¹² To calculate the ratio, the stock of credit is first divided by nominal GDP. Statistical methods are then used to identify and measure, on the basis of this ratio, an equilibrium level or trend, which is assumed to be slowly changing. Finally, the difference between the actual ratio and the trend is calculated. If credit growth has been exceptionally fast, credit volumes are clearly above the trend and the value of the ratio is thus high.

¹³ Useful core indicators are examined in the following subsection.

The designated authority would calculate and publish the ratios and the buffer guide based on the deviation of the credit-to-GDP ratio from its trend. The buffer guide would not bind the authority in its decision-making, but the authority could exercise its judgment and set a buffer requirement that differs from the buffer guide. However, the authority should present justifications for such divergence. If selected core indicators other than the trend deviation of the credit-to-GDP ratio also pointed to a marked increase in cyclical systemic risks, the authority should have specific reasons for not setting the buffer requirement.

The designated authority should conduct an overall assessment of the use of macroprudential tools and choose a combination of measures deemed best suited for a particular situation. Hence, in imposing the countercyclical capital buffer requirement, it would be advisable to give consideration to the calibration of other macroprudential instruments, on top of systemic risk indicators and other analyses.

Exercise of judgment by the authorities could play a greater role in reducing the countercyclical capital buffer requirement than in increasing it. Disruptions to the financial system often come to a head abruptly. In such a situation, it might be justified to promptly release accumulated countercyclical capital buffers for use by banks. Releasing the buffers could improve banks' ability to grant credit, maintain interbank competition and

curb the widening of lending margins during the declining phase of the credit cycle.

If the financial cycle were to deteriorate suddenly, the trend deviation of the credit-to-GDP ratio and many other indicators that accurately predict systemic risk growth would not necessarily be very quick to respond to the situation. Therefore, in releasing the buffer, the authorities should primarily rely on their overall judgment and consider, as a secondary option, on indicators that are based on market information and that respond rapidly to financial market disruptions, for instance.

Which indicators should be relied upon when tightening the countercyclical capital buffer requirement?

Also in Finland, the countercyclical capital buffer requirement should primarily be based on the credit-to-GDP ratio and its deviation from the long-term trend, as defined by the Basel Committee. Modified versions of this ratio that are not fully compliant with the Basel Committee's original proposal can also be employed. Use can be made of other indicators, too, on which the European Systemic Risk Board is expected to issue a recommendation.

The European Systemic Risk Board has provided preliminary views on potential indicators in its Handbook on Operationalising Macro-prudential Policy in the Banking Sector, published in March 2014. Below, we look at the practices applied by different countries for imposing buffer requirements and at scientific research on the indicators.

The setting of countercyclical capital buffer requirements aims to ensure banks' lending capacity even in conditions where banks operate at a loss or their capital adequacy is weakening substantially.

Countercyclical capital buffer requirements have already been put in place in Norway and Switzerland. Norway has decided to use the credit-to-GDP ratio, the ratio of house prices to household disposable income, commercial property prices and the wholesale funding ratio of Norwegian credit institutions as indicators guiding the process of setting the buffer.¹⁴

In Switzerland, it has been possible to set countercyclical capital buffer requirements by market segment since 2012, based on the property market situation, in particular. The buffer requirement will be put in place automatically if all selected indicators point to an overheating of the property market. Judgment will be exercised if only some of the indicators signal an overheating.¹⁵

The aim of setting countercyclical capital buffer requirements is to ensure banks' lending capacity even in conditions where banks operate at a loss or their capital adequacy is weakening substantially. An example of such an extreme case is a banking crisis. Therefore, the buffer requirement needs to be set at least in the event of a significantly increased threat of a banking crisis.

Plenty of academic research has been published on the identification of leading indicators of banking crises since the 1990s. In the light of the research findings, the most common macroeconomic phenomena preceding banking crises are excessive credit

growth, current account deficits and property price bubbles.^{16, 17}

The bulk of econometric research on leading indicators of banking crises is not directly based on precise theories regarding the birth of banking crises. The studies most often start from the premise that banks' problems originate from the overheating of lending and the build-up of asset price bubbles. With unsustainable levels of credit growth and asset price increases, even a minor factor can trigger a crisis. Credit institutions can then incur sizeable losses because of customer bankruptcies, falling market prices for collateral and banks' own unprofitable investments, among others.

In their illustrative analysis, Reinhart and Reinhart have explored this type of development, which they call 'capital flow bonanzas'.¹⁸ Foreign investors become interested in a country and begin to invest there, which reinforces credit growth and the rise in asset prices. Capital inflows are also reflected in expanding current account deficits. These trends at worst lead to the build-up and bursting of credit and asset price bubbles. Economic developments in some of the current European crisis-hit countries prior to 2008 are reminiscent of this description.

¹⁶ Kauko (2014).

¹⁷ The conclusions of the Handbook on Operationalising Macro-prudential Policy in the Banking Sector, published by the European Systemic Risk Board (2014, p. 40), are broadly similar. According to these conclusions, warning indicators that best guide the application of the countercyclical capital buffer could measure overvaluation of commercial and residential real estate markets, the current account-to-GDP ratio and the burden for borrowers from debt service involving interest and amortisation, in addition to the trend deviation of the credit-to-GDP ratio.

¹⁸ Reinhart and Reinhart (2008).

¹⁴ Norges Bank (2013).

¹⁵ SNB (2014).

The capital flow bonanza description could lead us to expect that a typical banking crisis is preceded by strong credit growth, sharp increases in share and property prices and current account deficits. This conclusion, according to many studies, does hold true fairly well, but the power of share prices to predict banking crises is perhaps weaker than could be expected.

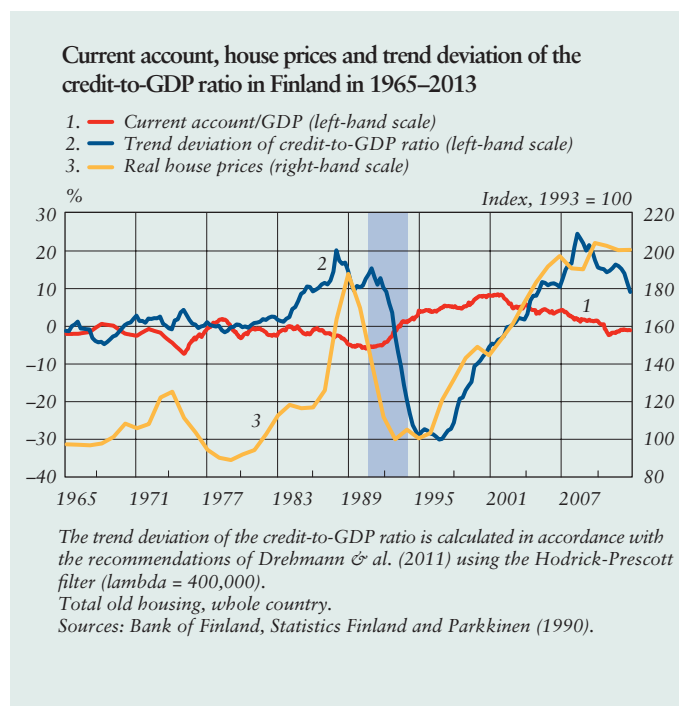
If a large number of households or non-financial corporations become over-indebted, credit stock growth will be unusually fast. Exceptionally strong growth in the credit-to-GDP ratio is, in fact, an obvious sign of dangerous overheating within the financial system. Research findings suggest that the trend deviation of the ratio appears to be a good leading indicator of banking crises.¹⁹ Comparisons between potential leading indicators of banking crises have demonstrated that this ratio appears to perform better than any other of the indicators tested.²⁰ The trend deviation is normally widest about three years before the outbreak of a crisis.²¹ Large trend deviations of the credit-to-GDP ratio would also have predicted the banking crisis in Finland at the beginning of the 1990s fairly well (Chart 5).

¹⁹ Hagen – Ho (2007) and Davis et al. (2011) have shown that, in contrast, the credit-to-GDP ratio alone would not appear to be a very robust determinant of banking crises.

²⁰ Borio – Lowe (2002) and Drehmann et al. (2011).

²¹ However, Repullo and Saurina (2011) have criticised the use of this ratio and indicated that a mechanical application of the trend deviation would often lead to setting additional capital requirements in economic downturns, when bank lending should be fostered rather than restricted.

Chart 5.



Excessive credit growth can also be gauged by other means. For example, the rate of credit growth as a percentage is a fairly good independent variable, as the growth rate is unusually fast a few years prior to the onset of a typical banking crisis.²²

It may also be of relevance whether credit growth is due, mainly, to growth in lending to the corporate or to the household sector. Research findings suggest that strong growth in household credit has been a better predictor of future banking crises than growth in corporate credit.²³

Purchases of real estate are normally financed by taking out bank loans, and housing property is often

²² See eg Jordà et al. (2011), Demirgüç-Kunt – Detragiache (2000), Bordo – Meissner (2012), Schularick – Taylor (2012).

²³ Büyükkarabacak and Valev (2010).

used as collateral. Housing market bubbles thus appear to be much more dangerous than stock market bubbles. A brisk increase in housing prices is a typical phenomenon about two to three years ahead of the eruption of a banking crisis.²⁴ A large housing price bubble also developed in Finland prior to the 1990s crisis (Chart 5).

A current account deficit describes the economy's external indebtedness. It serves as a good basis for predicting crises because the deficit may be a problem or a potential symptom of other problems. A growing current account deficit may be linked to rapid expansion in banks' external funding. If banks' domestic lending grows particularly rapidly, there is almost no alternative other than to seek funding on international markets. Growth in external, often short-term, funding may expose banks to liquidity crises in difficult times.

Financial crises have been common when international capital flows have been large as, for example, before the First World War and again since the 1980s.²⁵ Research has found statistical evidence of the predictive power of the deficit with regard to banking crises.²⁶ The Finnish banking crisis of the 1990s was preceded by a strong weakening of the current account (Chart 5).

There is also evidence of high real interest rates being typically present at

the approach of a banking crisis.²⁷ The role of real interest rates is likely to stem from the fact that high real interest rates increase the debt-servicing burden for borrowers.

In contrast, some indicators that appear reasonable have turned out to be poor warning indicators. Share prices, for instance, are capable of predicting banking crises to some extent, while not showing particularly good signalling properties. The 'techno bubble' at the end of the 1990s, among others, was not followed by any kind of banking crisis. On the other hand, the crisis that began in 2008 has been particularly severe in those countries where share prices rose sharply in the pre-crisis years.²⁸ However, exceptionally fast price increases on the stock market and high share prices relative to dividend yields (high P/E ratios) may reflect increasing willingness of households and other investors to take on risks, which could be a sign of a general overheating within the financial system.²⁹ A prompt contraction of margins on new bank loans, in turn, may point to banks' increased risk appetite.

The GDP growth rate has not proved to be a particularly robust predictor of crises occurring a few years ahead, either.³⁰ The supply of money circulating in the economy is also an indicator with a fairly poor predictive power.³¹ As for the link between bank

²⁴ See eg Barrell et al. (2011), Bunda – Ca'Zorzi (2010) and Drehmann et al. (2011).

²⁵ Reinhart – Rogoff (2008).

²⁶ Eg Lo Duca – Peltonen (2013), Rose – Spiegel (2012) and Roy – Kemme (2011).

²⁷ Roy – Kemme (2011), Barrell et al. (2011), Jordá et al. (2011) and von Hagen – Ho (2007).

²⁸ Rose – Spiegel (2012).

²⁹ Shiller (2005).

³⁰ Joyce (2011), Domaç – Martínez Peria (2003).

³¹ Roy – Kemme (2012), Drehmann et al. (2011).

profitability and the financial sector's vulnerability to crises, empirical research findings are fairly limited.

Yet, the identification of phenomena warning of the threat of a banking crisis is not sufficient to serve as a basis for decision-making on the size of the countercyclical capital buffer requirement; rather, the authorities also need to choose the best indicators to measure these phenomena. A good indicator should tend to return to an equilibrium level that does not change over time. If no such equilibrium level exists, it is hard to assess when the value of the indicator is exceptionally low or high.

If the indicator values grow from one decade to another or, in terms of statistical properties, are 'random walks', the indicators should be converted into new indicators that vary only within certain limits. Otherwise, the indicator has only limited use in detecting imbalances. For example, the credit-to-GDP ratio has grown in most countries from one decade to another, but the trend deviation of this ratio can never differ greatly from zero. The indicator with the best forecasting power should be used when measuring the same economic phenomenon.

Key words: countercyclical capital buffer requirement, macroprudential policy, macroprudential instrument