



 **NORGES BANK**

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Norge Bank

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Criteria for an appropriate countercyclical capital buffer

The objective of the countercyclical capital buffer is to strengthen the resilience of the banking sector to an economic downturn and counter excessive fluctuations in the credit supply that may amplify the economic cycle. The buffer should be increased when financial imbalances build up. Banks should be allowed to draw on the buffer in the event of an economic downturn and large bank losses, with a view to mitigating the procyclical effects of tighter bank lending. Norges Bank's advice on the buffer will primarily be based on four key indicators: Total credit to households and non-financial enterprises as a percentage of mainland GDP, the ratio of house prices to household disposable income, commercial property prices and the wholesale funding ratio of Norwegian credit institutions. There will not be a mechanical relationship between developments in the indicators and advice on the buffer. The advice will build on the Bank's professional judgement and take into account other requirements applying to banks. The indicators are not well suited to signalling when the buffer should be reduced. Other information, such as market turbulence and loss prospects for the banking sector, is more relevant.

1. Why are countercyclical capital buffer requirements for banks being introduced?

As from 2013, Norges Bank will issue advice on an additional capital requirement for banks, i.e. the countercyclical capital buffer. Maintaining adequate capital is crucial for financial stability as it bolsters banking sector resilience to economic downturns and reduces the probability that other agents will have to absorb potential bank losses.

The countercyclical buffer is a new element of banking regulation. In 2010, the Basel Committee on Banking Supervision recommended a new regulatory framework for capital and liquidity in the banking sector (Basel III). In 2011, the European Commission followed up with a proposal for a new regulatory framework for EEA countries.¹ It is expected that the EU will finalise the regulations in the course of spring 2013. They will also apply to Norway under the EEA Agreement.

The new regulatory regime imposes stricter capital requirements on banks, both in terms of quality and

quantity. In addition to an increase in the minimum Common Equity Tier I (CET1) capital requirements, a new permanent capital conservation buffer and an additional time-varying buffer will be required. The objective of the countercyclical capital buffer is to strengthen banks' resilience to an impending downturn and counter excessive fluctuations in the credit supply that may amplify the economic cycle.² The countercyclical capital buffer should be increased when financial imbalances build up. Banks would be allowed to draw on the buffer in the event of an economic downturn and large bank losses, with a view to mitigating the procyclical effects of tighter bank lending.

² The Basel Committee (2010b) stated the following: "The aim is to ensure that the banking sector in aggregate has the capital on hand to help maintain the flow of credit in the economy without its solvency being questioned, when the broader financial system experiences stress after a period of excess credit growth. This should help to reduce the risk of the supply of credit being constrained by regulatory capital requirements that could undermine the performance of the real economy and result in additional credit losses in the banking system."

The European Commission (2011a) stated the following: "The purpose of the countercyclical capital buffer is to achieve the broader macro-prudential goal of protecting the banking sector and the real economy from the system-wide risks stemming from the boom-bust evolution in aggregate credit growth and more generally from any other structural variables and from the exposure of the banking sector to any other risk factors related to risks to financial stability."

In the National Budget for 2013 the Ministry of Finance wrote that the objective is "primarily to increase the resilience of banks to future downturns, but a countercyclical buffer will also to some extent dampen high credit growth (...) With the introduction of a countercyclical buffer, the aggregate capital requirement will be increased in good times and can be lowered in bad times."

¹ http://ec.europa.eu/internal_market/bank/regcapital/new_proposals_en.htm

2. The regulatory framework for a countercyclical capital buffer

In the *Financial Market Report* for 2011, the Government, with the backing of the Storting (Norwegian parliament), proposed that Norges Bank be given the primary responsibility for elaborating the basis for decisions on the countercyclical capital buffer. In the National Budget for 2013, the Government announced that new statutory provisions on capital adequacy, including a countercyclical capital buffer, would be put forth in spring 2013.

The countercyclical capital buffer is based on the European Commission's proposed Capital Requirements Directive (CRD IV) and the Capital Requirements Regulation (CRR). The framework is comprehensive and sets out detailed capital and liquidity requirements for all banking activities.

Banks must at all times satisfy the "hard" CET1 requirements, which will amount to 4.5 percent of banks' risk-weighted assets. The regulation will also empower the designated authorities to impose a separate core capital requirement for systemic risk, which will be permanent and considered a "hard" requirement.

In addition, the new regulation will include the buffer requirements, which will comprise both the permanent conservation buffer (2.5 percent of risk-weighted assets) and the countercyclical buffer. Both buffer requirements are subject to the same compliance mechanisms and are referred to as "soft" capital requirements. This means that a bank that fails to meet in full the buffer requirements will be subject to restrictions on the distribution of profits, payments of variable remuneration, and the banks must also present a strategy to restore levels of own funds. It follows that banks may not pay out a dividend if that would result in a fall in capital adequacy below the full buffer requirements.

The buffer can normally be set between 0 and 2.5 percent and will apply to all activities of banks in Norway, including foreign subsidiaries and branches. The buffer can also be set above 2.5 percent, but will not in that case automatically apply to branches of foreign banks in Norway before it is approved by their home country authorities.

The proposed framework defines a methodology for setting the countercyclical buffer. Once the directive and the regulation are adopted, the European Systemic Risk

Board (ESRB) will specify further guidelines for setting the buffer, including qualitative criteria. To date, the EU has specified that there should not be an automatic setting of the buffer.³

All EEA Member States shall designate a national authority charged with setting the countercyclical buffer. Norges Bank has been assigned the primary responsibility for drawing up the basis for buffer decisions in Norway, but the Ministry of Finance will set the buffer until further notice. In drawing up the basis, Norges Bank will collaborate and exchange information with Finanstilsynet (Financial Supervisory Authority of Norway).⁴ The Bank will issue advice to the Ministry of Finance in connection with Norges Bank's *Monetary Policy Report with financial stability assessment* in March, June, September and December.

Any increase in the buffer requirement must be preannounced with a lead time of at least 12 months before taking effect, to give banks time to adapt. A reduction in the requirement will be implemented promptly, however. To create predictability for banks in connection with a reduction in the buffer rate, the authorities are also required to estimate for how long the buffer rate is highly unlikely to be increased.

To date, Switzerland is the only country that has introduced a regulatory regime for a countercyclical capital buffer, but Switzerland is not subject to the EU regulation. The Swiss regulation was introduced early because the risk of a build-up of imbalances in the Swiss property market was assessed to be high (see Swiss National Bank (2012)). In the UK, an interim committee, the Financial Policy Committee (FPC), has been established at the Bank of England. The FPC will be vested with the authority to introduce a broad set of macroprudential measures or issue advice on such measures (see Financial Policy Committee (2013)).

³ CRD-IV (EU Parliament/ECON 30 May 2012), recital 58 in the preamble.

⁴ <http://www.regjeringen.no/nb/dep/fin/aktuelt/nyheter/2012/presisering-om-makroovervaking.html?id=682266>

3. Norges Bank's framework for drawing up the basis for advice

3.1 Criteria for an appropriate countercyclical capital buffer

The EU proposal is based on an approach where the financial system is assessed using credit growth and changes in the ratio of total credit to GDP. In addition, the designated authority in each country will also use other indicators and assessments they consider relevant for assessing risks to the financial system. The setting of the buffer shall be explained and announced four times a year.

Norges Bank's advice on the countercyclical capital buffer should satisfy the following criteria:

1. *Banks should become more resilient during an upturn*
The buffer should be increased when financial imbalances build up.
2. *The size of the buffer must also be viewed in the light of other requirements applying to banks*
3. *Stress in the financial system should be alleviated*
Banks would be allowed to draw on the buffer in the event of an economic downturn or large bank losses, with a view to mitigating the procyclical effects of tighter bank lending.

It is demanding to identify financial imbalances. Economic theory and lessons from earlier financial crises can, however, be useful in finding indicators that can signal a build-up of financial imbalances. Norges Bank's advice on the countercyclical capital buffer will primarily be based on four key indicators:

- (i) The ratio of total credit (C2 households and C3 enterprises mainland Norway) to mainland GDP
- (ii) The ratio of house prices to household disposable income
- (iii) Commercial property prices
- (iv) The wholesale funding ratio of Norwegian credit institutions

There are sound economic arguments to support that indicators (i)-(iv) capture imbalances. Financial crises generally occur following a period of a mutually reinforcing

increase in credit, property prices and demand for goods and services, culminating in a bursting bubble.⁵ Real estate is both an asset and collateral, and hence influences economic agents' borrowing preferences and access to credit. The interaction between credit and asset prices may thus lead to a build-up of imbalances, and may amplify an economic downturn. An abrupt fall in property prices can lead to an increase in banks' loan losses, either directly as a result of losses on property loans, or indirectly as a result of a fall in total demand, rising unemployment and lower economic activity. In Norway, commercial property is the largest industry in terms of bank lending. Commercial property is also among the industries in Norway that have historically exposed banks to the largest losses.⁶

Banks' access to wholesale funding has an impact on lending growth. A substantial share of lending is financed by deposits from households and firms, but deposits are limited by households' financial savings and firms' accumulation of liquid assets. In periods where banks' lending growth exceeds deposit growth, banks must raise a larger share of their funding directly in the financial market. A high and rising share of wholesale funding may reinforce an increase in debt and asset prices.⁷ Banks' access to wholesale funding often dries up or their funding costs increase substantially in turbulent times. This may lead to a sharp tightening of banks' lending policies. The indicator can also capture that interbank lending is on the rise. More closely interwoven financial institutions heighten the risk of financial contagion.

On the whole, the four indicators (i)-(iv) provide early warning signals of vulnerabilities and financial imbalances. Historically, they have risen ahead of periods of financial instability in both Norway⁸ and other countries⁹. This was clear in the run-up to the banking crisis in Norway around 1990 (see further discussion below). Household and corporate debt has shown a particularly sharp rise ahead of financial crises, which is why indicator (i) is of key importance in the new regulation.

Other indicators may also serve as useful assessment indicators, such as household credit growth on the one

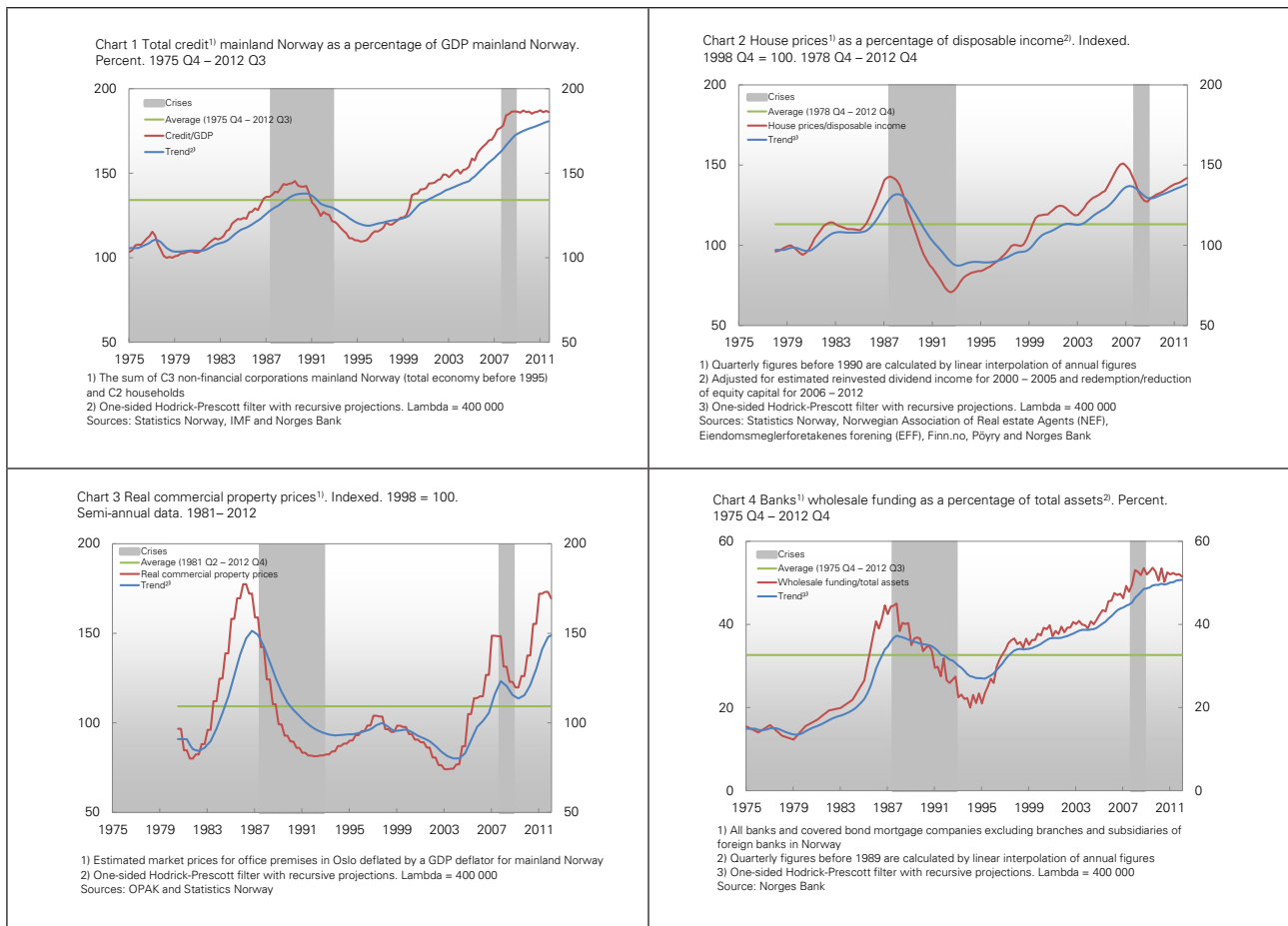
5 See, e.g., Bernanke, Gertler and Gilchrist (1999), Iacoviello (1999), Mendoza (2010) and Aoki, Proudman and Vlieghe (2002).

6 Storting Report on the Banking Crisis (1998) shows figures relating to the banking crisis in Norway at the beginning of the 1990s.

7 See Shin and Shin (2011) and Hahm et al. (2012).

8 See, e.g., Anh (2011).

9 See, e.g., Borio and Drehmann (2009), Borio and Lowe (2002), Drehmann et al. (2011) and Reinhart and Rogoff (2009).



hand and corporate credit growth on the other, the debt-servicing capacity of households and firms, and a measure of real house prices. As experience and insights are gained with regard to the countercyclical buffer, the set of indicators can be developed further.

As a basis for its advice on the capital buffer, Norges Bank will analyse developments in the key indicators and compare the current situation with historical trends and averages. A technical calculation of trends can be useful in analysing economic variables that rise over time, but must be used with caution. The indicators in Charts 1-4 may have shown some trend growth over the past 30 years, but can be assumed to be more stationary in the long run. Hence, it is also useful to compare today's values with historical averages.¹⁰ A further description of trend estimation is provided in the Appendix.

There will not be a mechanical relationship between changes in the indicators and Norges Bank's advice on the countercyclical capital buffer. The advice will be based on the Bank's professional judgement, which will also take into account other factors. The size of the buffer will be viewed in the light of other requirements applying to banks, particularly when new requirements are introduced.

To maintain resilience, the buffer should not be reduced automatically even if there are signs that financial imbalances are receding. After a period of high risk and an increased buffer, maintaining such a buffer is likely to entail relatively small costs to banks.

The key indicators are not well suited to signalling whether the buffer should be reduced. Other information, such as market turbulence and loss prospects for the banking sector, is more relevant. If Norges Bank's assessment suggests an abrupt tightening of bank lending owing

¹⁰ The challenge of trend estimation is discussed in Hagelund and Sturød (2012) with regard to trend GDP estimates.

to the capital requirements, the Bank would issue advice that banks should be allowed to draw on the buffer. If the buffer functions as intended, banks will tighten lending to a lesser extent in a downturn than would otherwise be the case. The buffer will not be released to alleviate isolated problems in some banks.

The basis for Norges Bank's advice on the countercyclical capital buffer will be presented quarterly in Norges Bank's *Monetary Policy with financial stability assessment*. The *Report* also contains a description of developments in financial markets, banks, households and firms, which form part of the background for both the buffer analysis and monetary policy.

3.2 Have key indicators provided early warning signals of turbulence and crises in Norway?

The choice of key indicators (i)-(iv) in Section 3.1 is based on both empirical and theoretical properties of the indicators, including studies of periods of financial instability in Norway back to the end of the 1800s¹¹, and international studies. It is also useful to assess developments in the indicators in Norway over the past 30 years. Particular weight has been given to the fact that the key indicators increased prior the banking crisis in 1988-1993 and the financial crisis in 2008-2009.

Chart 1 shows that credit growth was higher than mainland GDP growth in Norway for a long period prior to the banking crisis. In Norway, the ratio of total credit to mainland GDP also remained high in the beginning of the banking crisis owing to weak GDP growth, but thereafter fell sharply. The other three indicators also rose markedly in the run-up to the banking crisis. On the whole, the indicators can be said to have provided accurate early warning signals of a build-up of financial imbalances in the Norwegian economy.

From the mid-1990s, Norway experienced a long period of high and rising credit and house prices. Commercial property prices rose sharply in the years leading up to the financial crisis. Ample access to market funding paved the way for rapid growth in the banking sector, allowing the sector to satisfy high demand for business and household credit. On the whole, the indicators seem to have provided early warning signals of a build-up of financial imbalances ahead of the crisis. Even though that crisis was not triggered by domestic conditions, banks

were still vulnerable prior to the crisis, and the Norwegian authorities had to implement measures to improve access to funding and strengthen banks' solvency.

4. What will be the impact of the new regulatory framework?

4.1 How will the changes affect bank behaviour?

The direct impact of increased capital buffers is that Common Equity Tier 1 (CET1) capital will increase for banks that do not yet satisfy the new requirements. It is also conceivable that banks that already satisfy the new requirements will raise CET1 further if they aim to have a certain buffer in relation to the capital requirements. High levels of CET1 are likely to boost market confidence and lower the cost of debt financing.

Common Equity Tier 1 (CET1):

$$CET1 \text{ ratio} = \frac{CET1 \text{ capital}}{RWA}$$

RWA is equal to the sum of risk-weighted assets:

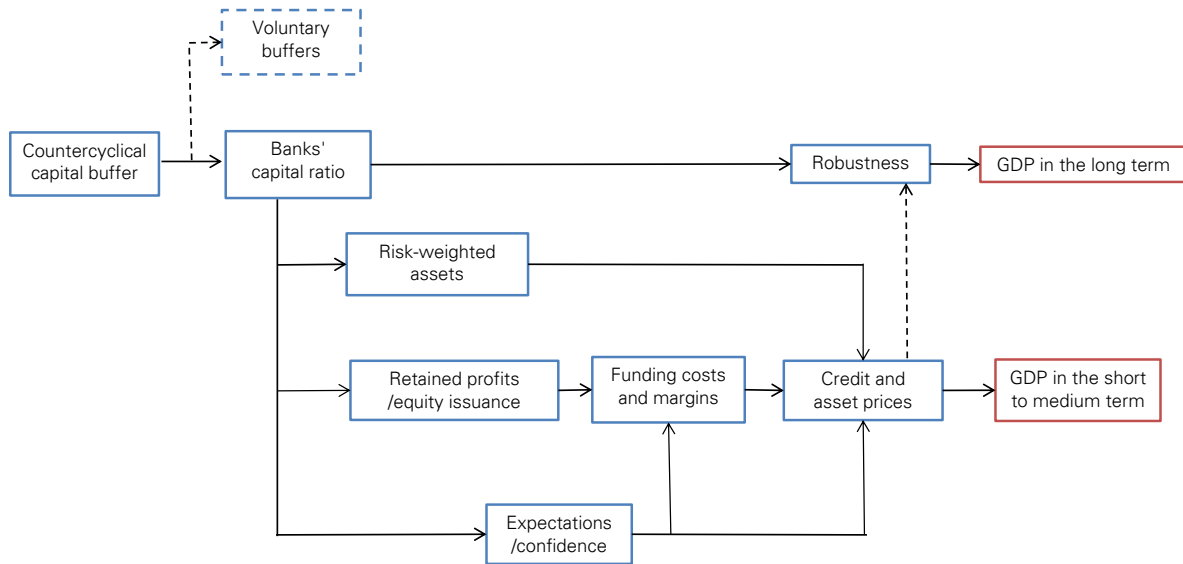
$$RWA = \sum_{i=1}^n \text{asset}_i * \text{risk weight}_i$$

There are roughly two ways for banks to increase the CET1 ratio. First, banks can choose to increase the numerator (the level of regulatory capital) by increasing their equity capital, either by issuing new equity or by increasing retained earnings (see Chart 5). To the extent it is more expensive to fund lending with equity than from other funding sources, banks' funding costs will rise. Since banks will often attempt to pass higher funding costs through to loan rates, an increase in the buffer may also curb credit demand.

Second, banks can increase the CET1 ratio by reducing the denominator, i.e. risk-weighted assets (RWA), which they can do by reducing lending or by changing the composition of their assets. By increasing the share of assets with low risk weights at the expense of assets with

¹¹ See Gerdrup (2003) and Riiser (2005).

Chart 5 Effects of countercyclical capital buffer. Stylised overview



high risk weights, a bank can achieve a lower RWA. This may affect the supply of credit to some sectors.

If banks still have a margin over the capital requirements following an increase in the buffer, banks may opt not to change capital levels. In that case, the result is a reduction in the voluntary buffer already in place relative to the regulatory requirements.

In the event of stress in the financial system, a release of the buffer requirement will allow banks to draw on the buffer rather than reduce lending. However, if banks' investors, creditors or rating agencies demand that banks' capital levels be maintained, a release may have little effect on credit provision and developments in overall activity.

In addition to adapting to the new regulatory regime, banks may also adjust their behaviour based on expectations of a future regime. A number of banks have already announced that they expect higher capital requirements. Banks' annual financial statements for 2012 show that banks raised their capital levels via reduced dividend payments, a change in asset composition, and equity issuance. Banks have also increased their interest margins on loans to non-financial enterprises and households.

It would thus appear that the effects of stronger capital requirements have materialised well ahead of the new regulatory regime.

4.2 Possible macroeconomic implications of a higher capital buffer

An increase in the buffer will primarily serve to enhance banking sector resilience and may in that respect help curb excessive fluctuations in the economy over time. There is reason to believe that stronger capital requirements will not give rise to considerable, permanent economic costs in the long term, see also Basel Committee (2010c).

On the other hand, in a transitional phase, higher buffers may have a dampening impact on growth in total credit and GDP. The most comprehensive study of the macroeconomic costs of higher capital requirements for banks was conducted in 2010 by a group established by the Financial Stability Board and the Basel Committee on Banking Supervision (see Macroeconomic Assessment Group (2010)).¹² The various countries in the study used different methods to estimate the effects. The study found two main results. First, the capital requirements resulted

¹² See also Committee on the Global Financial System (2012) for a summary of results.

in higher lending margins because equity financing is perceived as more costly than debt financing. Second, credit provision and total GDP growth declined somewhat in the short run. Akram (2012) has analysed the impacts of stricter capital requirements using an estimated macro-economic model for Norway and finds somewhat weaker effects than the results of the Macroeconomic Assessment Group would indicate.¹³

The results of both Norwegian and international studies are highly uncertain and vary according to the method chosen and period under analysis. What many have in common is that the impact of a transition to stronger capital requirements depends on how the central bank's reaction function is quantified. A reduction in GDP growth and inflation owing to higher capital requirements may be counteracted by lower policy rates. Furthermore, the results depend on assumptions regarding the length of the phasing-in period for the new requirements. A longer implementation horizon will result in lower costs. The adverse long-term impacts of a transition to higher capital requirements are also minimal in most studies. Moreover, the effects on different countries will depend on whether other countries have increased their capital requirements.

The studies do not take into account that enhanced banking sector resilience may reduce the likelihood of financial crises and that a countercyclical capital buffer can be used to alleviate stress in the financial system.

13 Another study for Norway by Jacobsen et al. (2011) finds that increased capital requirements do not have a significant impact on GDP and credit after period, but that the requirements may have a tightening impact in transitional period. Vale (2011) finds that a doubling of equity ratios in the long run may reduce overall credit volume by 0.3-1.2 percent.

Appendix

1. Trend estimates

Trend estimates have been derived using a Hodrick-Prescott (H-P) filter. Trends are recursively estimated in order to express what the trend would be at any point in time during the observation period (a “one-sided” filter). Other techniques could also have been used to estimate trends, such as the linear trend method or moving average filtering. However, the advantage of H-P filtering is that more recent observations are given higher weights, which can be an effective means of capturing structural breaks (see also Basel Committee, 2010b).

H-P filtering may be viewed as a technique for converting a high-frequency series, y_t to a low-frequency series, μ_t (see also King and Rebelo, 1993). The filter includes a parameter (λ), which determines the smoothness of the output series. This is done mathematically by finding the trend series (μ_t) which minimises the following sum for certain values of λ :

$$\min_{\{\mu_t\}_{t=0}^T} \sum_{t=0}^T (y_t - \mu_t)^2 + \lambda \sum_{t=1}^{T-1} ((\mu_{t+1} - \mu_t) - (\mu_t - \mu_{t-1}))^2$$

A higher lambda value implies a higher degree of smoothing. In business cycle analyses, a lambda value of 1600 is often applied to quarterly data. Ravn and Uhlig (2002) have developed a method where they set lambda equal to 1600 multiplied by the fourth power of the frequency rate (the ratio of the desired frequency to the frequency in the business cycle analysis). In the trend estimate, a lambda of 400,000 was used, which is also in line with the recommendations of the Basel Committee. The underlying assumption for this is that the length of financial cycles is approximately four times that of business cycles, i.e. $1600 * 4^4 \cong 400\ 000$.

However, a “naïve” H-P filter is less useful as the trend being estimated will be subject to revision. With a lambda of 400 000, there will be revisions of the trend up to 20 years back in time for each time a new quarter is added to the observation period. A well-known technique for making the trend estimation more stable is to extend the

observation period with a forecast over a certain horizon. Thus, the trend will be affected in part by the historical series up to the time of calculation and in part by the forecast. The weight of the forecast will, among other things, depend on the forecast horizon.

The forecast must be mechanical in nature, since there is no structural model available that is recursively estimated over this time period. We assume that the indicator remains at the same level in the forecast period as at the end of the observation period. To avoid excessive weighting of variations in single observations, an average for the preceding four quarters is used. The forecast horizon used is 20 quarters. Owing to the method, the trend is less sensitive to strong growth or a fall in the indicators towards the end of the observation period.

2. Data series

C3 mainland Norway as a percentage of mainland GDP

C3 mainland Norway is defined as the sum of domestic debt (C2), mainland households, and total debt (C3), mainland non-financial enterprises (see Tables 1 and 2 for sources and methods).

Both series are break-adjusted for government lending institutions’ loans to housing cooperatives between 1994 Q1 and Q2 and between 1989 Q3 and Q4, and break-adjusted for the new institutional sector classification between 2011 Q4 and 2012 Q1.

Total credit is calculated as percentage of quarterly mainland GDP at current prices (total past four quarters). GDP is chained as shown in Table 3.

House prices as a percentage of disposable income

House prices are calculated as the average square metre price for the past four quarters. Prices are based on several sources and chained as shown in Table 4.

House prices are break-adjusted for the changeover from quarterly to monthly data in the house price statistics

from the real estate industry between 1996 Q4 and 1997 Q1. Quarterly figures are calculated as the average square metre price over the months in the quarter.

Average house prices are calculated in relation to the sum of household disposable income (see Table 5) for the past four quarters. The index is 100 in 1998 Q4 when estimating house prices in this way.

Real commercial property prices

Commercial property prices are calculated by OPAK using net rental prices for high-standard office premises in central Oslo, in addition to an assessment of net yield.

For rental prices, Dagens Næringsliv's (Norwegian financial daily) commercial property price index is used. Real prices for commercial property are calculated as the average price of commercial property (Table 6) the past four quarters in relation to the average mainland GDP deflator (Table 7) the past four quarters. The real price index is 100 in 1998.

Banks' wholesale funding ratio

Wholesale funding is defined as total liabilities less customer deposits and equity. The wholesale funding ratio is wholesale funding as a percentage of total liabilities (see Table 8).

Table 1. Total debt (C3), mainland non-financial enterprises

Period	Description	Source
1995 Q4– 2012 Q3	C3 mainland non-financial enterprises. Stocks at the end of the quarter.	Statistics Norway
1987 Q4 – 1995 Q3	Chained back in time using growth in total C3 non-financial enterprises.	Statistics Norway
1975 Q1 – 1987 Q3	Chained back in time using growth in enterprises' total loan debt (bank loans, bonds and notes).	Norges Bank

Table 2. Domestic debt (C2), households

Period	Description	Source
1995 Q4– 2012 Q3	C2 households (mainland). Stocks at the end of the quarter.	Statistics Norway
1987 Q4 – 1995 Q3	Chained back in time using total C2 households.	Statistics Norway
1975 Q1 – 1987 Q3	Chained back in time using growth in households' total loan debt.	Norges Bank

Table 3. Mainland GDP

Period	Description	Source
1978 Q1 – 2012 Q3	Mainland GDP, market value, current prices.	Statistics Norway
1975 Q1 – 1977 Q4	Chained back in time using total GDP growth.	International Monetary Fund

Table 4. House prices

Period	Description	Source
1990 Q4 – 2012 Q4	House price statistics from the real estate industry. Price per m ² of an average dwelling of approx. 100 m ² . NOK 1000.	Norwegian Association of Real Estate Agents (NEF), Association of Real Estate Agency Firms (EFF), Finn.no and Pöyry
1975 Q1 – 1990 Q3	Chained back in time using Historical Monetary Statistics for house price inflation (“Total”). Converted to quarterly data using linear interpolation.	Norges Bank (Historical Monetary Statistics)

Table 5. Disposable income

Period	Description	Source
2002 Q1 – 2012 Q4	Quarterly disposable income adjusted for reinvested dividend income in 2000-2005 and redemption/reduction of equity capital from 2006.	Statistics Norway
1978 Q1 – 2001 Q4	Annual disposable income adjusted for reinvested dividend income in 2000 and 2001. Converted to quarterly data using quarterly wage income as weights.	Statistics Norway

Table 6. Commercial property prices

Period	Description	Source
1980 Q4 – 2012 Q4	Estimated market value of high-standard office premises in central Oslo. NOK/m ² . Semi-annual data converted to quarterly data by setting Q2 = Q3 and Q4 = Q1 the following year.	OPAK and Dagens Næringsliv

Table 7. Mainland GDP deflator

Period	Description	Source
1980 Q3 – 2012 Q4	Mainland GDP deflator.	Statistics Norway

Table 8. Banks’ wholesale funding ratio

Period	Description	Source
1975 Q4 – 2012 Q4. Annual data prior to 1987. Quarterly data from 1987 Q1	Wholesale funding is defined as total liabilities less customer deposits and equity. The wholesale funding ratio is wholesale funding as a percentage of total liabilities. The sample comprises all Norwegian banks and covered bond mortgage companies. Data are adjusted for intercompany receivables and payables.	Banking statistics (ORBOF) compiled by Norges Bank, Finans-tilsynet (Financial Supervisory Authority of Norway) and Statistics Norway

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