

The macroprudential approach to financial stability*

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Introduction

Financial stability has become an increasingly important objective in economic policymaking during recent decades.

In the 1980s, direct regulation of credit markets and capital flows was dismantled in many countries. This prepared the ground for an expansion of the financial system at a faster pace than other parts of the economy. In this process, the financial system has undergone important structural changes and become more complex. The instruments have become more intricate, the activities more diversified and the risks more mobile. As a result of increasing cross-industry and cross-border integration, financial systems have also become more interwoven, both nationally and internationally¹.

In parallel with the strong growth of the financial system, we have seen more frequent instances of widespread financial distress. The resulting macroeconomic costs have often been sizeable. Financial crises have typically been associated with boom and bust cycles in asset prices and credit. Due to sharp growth in house prices and household debt in several countries in recent years, the question of whether monetary policy should be used to mitigate such developments has received increased attention.

In the light of these developments, I would like to address four main questions. What do we mean by financial stability, how do we analyse it, how do authorities cooperate in order to support it, and finally, what instruments are available to secure financial stability?

What do we mean by financial stability?

Despite increasing focus in recent decades, there is still uncertainty as to how best to define the concept 'financial stability'.²

In order for households and enterprises to obtain optimal consumption and investment over time there has to be a well-functioning financial system that can intermediate between savers and borrowers, carry out payments and redistribute risk in a satisfactory manner. This promotes an efficient allocation of real economic resources across different activities and over time. From this point of view, financial stability can be defined as a situation where the financial system is able to meet these requirements, and thereby enhance economic performance and wealth accumulation

A more narrow approach is to define financial stability in terms of what it is not, i.e. a situation in which financial instability impairs the real economy. This definition is more passive in terms of implying how one should act under normal circumstances, but has the advantage of focusing on the situations we attempt to avoid.

The latter definition is related to the high costs of financial instability in the last few decades. Costs in terms of loss of GDP can be substantial. As illustrated in Chart 1, a study of the economic costs of banking crises concluded that even though such crises have been less frequent in high-income countries than in low-income countries, they have persisted over a longer period and average total output losses have thus been higher.³

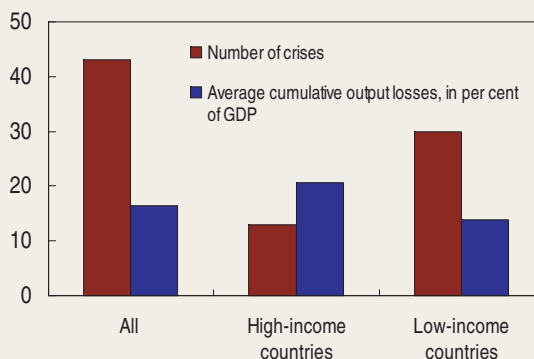
The preferred definition of financial stability varies from country to country. Recognising the need for a relevant operational definition regardless of the current situation in the financial system, Norges Bank has chosen to adopt the broad definition of financial stability.

How do the authorities analyse financial stability?

Given an understanding of what financial stability should imply, the authorities can analyse potential threats to financial stability. There are two complementary approaches:

In the first approach, we need to focus on risk factors originating within the financial system. Institutions, markets and infrastructures are continuously faced with

Chart 1 Economic costs of banking crises. 1977-1998



Source: Hoggarth et al 2001

* The article is based on a keynote address with the same title that was given at the conference entitled "Monetary Policy and Financial Stability", hosted by the Oesterreichische Nationalbank in Vienna on 12 May 2005.

¹ For further discussion, see Houben, Kakes and Schinasi (2004)

² See for example Schinasi (2004)

³ Hoggarth, Reis and Saporta (2001)

risk factors such as credit, liquidity and market risks. Analyses have become even more challenging in recent years as the financial system has become more complex and interwoven across both industries and borders.

The increased complexity of the financial system is illustrated by the rapidly expanding market of credit derivatives. This is a relatively new financial instrument that comes in many and complex forms. While contributing positively to greater flexibility in risk management, there is also the possibility that risk is more easily concentrated, and that economic agents can take on risks without being fully aware of their ramifications.

When analysing risk originating inside the financial system, it may be useful to divide the approach into two areas.⁴ The microprudential analysis focuses on developments within individual institutions, and is concerned with limiting the distress of individual institutions, thereby protecting depositors. The macroprudential analysis focuses on the financial system as a whole, and aims at limiting system-wide distress and avoiding output costs. An important concept here is systemic risk: the risk that liquidity or solvency problems in a bank may cause liquidity problems or insolvency in other institutions. Thus, correlation and common exposures across institutions are important in the macroprudential approach.

The second approach deals with risks originating from outside the financial system. This field has increasingly been recognised by researchers and policymakers in recent years. Strong growth in debt and asset prices, as well as macroeconomic disturbances like a surge in commodity prices or the unwinding of large imbalances in the world economy, can ultimately affect financial stability in a negative way.

To identify potential sources of instability, we need indicators that contain useful information. With an estimate of the equilibrium values of debt ratios or asset prices, for example, we can study the gap between their current value and their equilibrium value⁵. If the gap is wide, the danger of a significant consolidation is present. However, the results must be interpreted carefully. Equilibrium values are inherently difficult to determine, and it is not obvious that there is a stable and significant relationship between gaps and future economic activity. In addition, decisive factors in the judgement of the financial situation, like agents' confidence in the financial system, are also difficult to incorporate in the analysis.

A related approach is to analyse the potential impact of adverse macroeconomic shocks on financial stability. Stress tests are commonly used for this purpose. Such tests investigate banks' ability to withstand different types of shocks under various economic conditions and with different monetary policy responses. Macroeconomic models have proven to be valuable for conducting stress tests. However, considerable work

⁴ See for example Borio (2003)

⁵ See for example Borio and Lowe (2004)

Chart 2 International stock market indices. Index.
1 Jan 2004 = 100



Source: EcoWin

remains to be done in order to capture the behaviour of economic agents in the case of extreme macroeconomic events.

Financial markets and institutions have become more interdependent, thereby increasing the possibility of contagion across borders.

Cross-border capital flows have increased considerably in recent decades. Equity markets have moved more in tandem, particularly since the mid-1990s (see Chart 2). This also applies to bond markets. Investors are increasingly spreading their investments across countries. They are both diversifying risk and seeking high returns. In parallel, governments, banks and companies are issuing more debt externally.

The corresponding development in financial institutions, towards an increasing share of large cross-border banks, makes it essential to go beyond a purely national analytical focus. However, this can be a difficult task, as cross-border banks are complex and often part of an even more complex financial conglomerate.

Examples:

- The Iceland-based Kaupthing Group is present in 10 countries and the group's total asset holdings at the end of 2004 were almost twice the size of Iceland's GDP.
- The Sweden-based Nordea Group has substantial market shares in all four Nordic countries. While Nordea's home country is Sweden, its largest market share is in Finland.
- The HSBC Group has 110 million customers worldwide.
- Citigroup is present in about 100 countries and territories.

The central bank has a special responsibility for analysing and monitoring the financial system. The examples of cross-border integration show how important it is to have a strong international focus in finan-

cial stability analysis. Generally, the increasing range of analytical challenges has forced central banks to be more innovative. This is reflected in the increasing number of financial stability reports published worldwide.

How do authorities cooperate in order to promote financial stability?

Closely connected to the question of analytical focus is that of the division of responsibility for maintaining financial stability, on both a domestic level and among the authorities in different countries. The task of ensuring financial stability within a country is in most cases divided between the ministry of finance, the central bank and a financial supervisory authority, with the ministry of finance having the overall responsibility. To promote efficient cooperation, the regular exchange of information between these authorities is crucial and some formal framework for cooperation should be established.

The evolution towards larger cross-border banks makes the issue of responsibilities more complicated. In the event of a crisis, central banks, supervisory authorities, political authorities as well as deposit guarantee funds in several countries will be involved.

In contrast to the national banking crises in Norway, Finland and Sweden in the early 1990s, a similar crisis today would most likely involve authorities from all four Nordic countries. Therefore, it is important to establish guidelines in advance to ensure effective crisis management. A special challenge will be to establish leadership. With four ministries of finance involved, the choice of leadership will not be straightforward.

The traditional view is that the host-country authorities are responsible for subsidiary banks, while home-country authorities are responsible for branches⁶. This view is closely linked to the legal difference between subsidiaries and branches. Subsidiaries are independent legal entities, while branches are not legally independent of their parent bank.

However, host country authorities have little influence over foreign banks' crisis management. One of the key issues is whether the home country authorities should be obliged, in a crisis situation, to take into account the effects of the crisis on other countries where a bank has branches with extensive activities.

There are arguments to suggest that home-country authorities should have more responsibility for host banks also in a subsidiary bank structure. This would reduce the number of authorities that banks have to relate to. It is also in line with developments in banking, where an increasing number of cross-border banks are organised as global firms with subsidiary structures under central management.

The question of coordination is far from being solved. One possible way forward is to transfer some responsi-

bility to supranational institutions. As transfer of responsibility implies transfer of control, this solution is not a simple one in political terms. In the EU, the idea of a European supervisory authority has so far met resistance. A fundamental problem – especially in the case of a financial crisis – is the lack of a corresponding supranational fiscal institution. Today, any financial support must be granted by national authorities. Without formal supranational solutions in place, it is all the more important to ensure cooperation between the central banks and supervisory authorities involved. The fact that a large share of the financial institutions in the new EU member countries are foreign-owned makes this issue even more relevant.

In June 2003, the governors of the Nordic central banks signed an agreement on the management of a potential financial crisis in a Nordic bank with activities in two or more Nordic countries. The agreement contains procedures for the coordination of crisis management among the central banks. The Nordic supervisory authorities have drawn up a similar cooperation agreement.

One particular problem in the Nordic region is the differences in the countries' deposit guarantee schemes. The different schemes vary both with respect to amount guaranteed and type of deposit covered. However, these differences are also widespread across Europe and some convergence of rules and operating procedures is certainly long overdue.

What instruments are available to secure financial stability?

Monitoring and analysis of the financial system result in an assessment of the current situation regarding financial stability. This leads to the question: what instruments are available to enforce and secure financial stability? We can distinguish between preventive measures and measures for crisis resolution. Of relevance to the latter is the role of the central bank as the lender of last resort. In some countries this role was the main reason for establishing the central bank in the first place. Today it remains an important task of central banks, but is reserved for very special situations where financial stability may be threatened. In this address, I will focus on preventive measures.

As a general measure, the authorities use surveillance and regulation to enforce financial stability. Surveillance of markets, institutions and infrastructure may in itself contribute to sound financial risk management.

Effective and appropriate prudential regulation will reduce risks and promote sound financial institutions. For instance, an important aim of the Basel II agreement is to increase the efficiency of financial institutions by revising existing standards for capital requirements for banks. Prudential regulation can also be used by the authorities as a special measure to curb undesirable

⁶ Borchgrevink and Grung Moe (2004)

developments. Countercyclical variations in capital requirements (or collateral requirements) can respond to potential imbalances. However, there are several arguments against using this instrument.

First, it is very difficult to decide the appropriate timing and size of a policy response. Also, while authorities may regulate financial institutions, market outcomes are difficult to control. Risks may be transferred through the market, away from the regulated institutions, only to show up somewhere else.

Financial agents need to operate on a level playing field. In many countries, branches and subsidiaries of foreign banks have large market shares (see Chart 3). If one country decides to increase the domestic capital requirements for banks, this creates competitive distortion in the national markets between domestic banks and branches of foreign banks, the latter complying with the regulations of their home country authorities.

Clear and concise communication, verbally or in writing, from the authorities to the public on the risk factors they consider to be the most pressing could also be used as an instrument in the event of rising financial imbalances. For central banks, a suitable arena could be financial stability reports, an increasingly common publication. These reports can be described as a signalling device. However, there are limits to how effective signalling and information can be in curbing financial imbalances.

Fiscal policy also contributes to financial stability, for example through a stable tax system built on well-founded economic principles. Some have argued in favour of counter-cyclical changes in the tax system, for example adjustments in tax deduction on interest rate expenses or property tax. However, such changes can prove to be difficult to adopt and implement for institutional and political reasons.

Financial stability and monetary policy

In recent years, the relationship between monetary policy and financial stability has received increased attention. Monetary and financial stability are two intermediate goals for public policy. In my view, these goals are often mutually reinforcing.

Financial stability has a positive influence on price stability. First, it promotes a stable credit supply and capital flow, which is crucial to balanced economic development. Second, financial stability supports the transmission mechanisms of monetary policy. A stable financial system ensures that changes in the monetary policy instrument have the intended effects on market rates. Hence changes in monetary policy will affect the behaviour of consumers and enterprises and, eventually, inflation and economic activity.

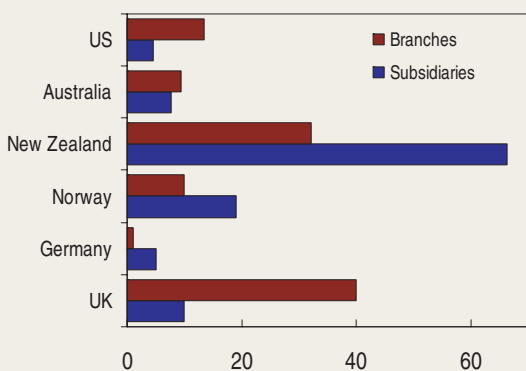
Moreover, price stability has a positive influence on financial stability. A successful monetary policy will promote financial stability by removing distorted price signals associated with high and volatile inflation. Low and stable inflation provides households and enterprises with a clear indication of changes in relative prices. Allocation of resources will then be more effective.

It is easy to identify situations where the objectives of price stability and financial stability imply the same medicine. For instance, expansionary periods are often accompanied by stronger inflationary pressures and asset price increases, both implying a need for tighter monetary policy. There are, however, examples of situations where the considerations are more complex.

As Chart 4 illustrates, surges in asset prices and a low and stable general price level of goods and services can appear simultaneously. There may be several reasons for this.

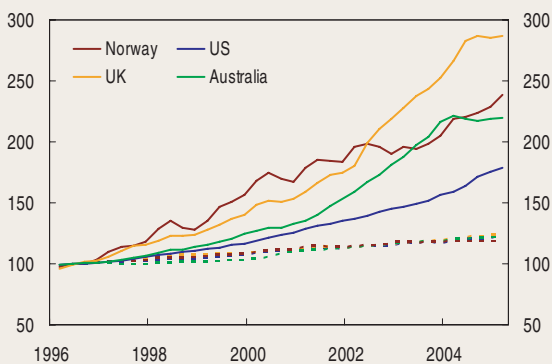
First, a highly credible monetary policy results in low inflation expectations among economic agents. Explicit

Chart 3 Foreign banks' assets in per cent of total assets. 2003/2004



Sources: ECB, Reserve Bank of New Zealand, Australian Prudential Regulation Authority, Federal Reserve, Norges Bank

Chart 4 Consumer prices (broken lines) and house prices (solid lines). Index. 1996 Q1 = 100



Sources: EcoWin, Australian Bureau of Statistics, Norwegian Association of Real Estate Agents, Association of Real Estate Agency Firms, Finn.no, ECON

or implicit long-term price and wage contracts may be more common. It may then take more time for higher demand to translate into higher inflation. Asset prices, on the other hand, will not be constrained by expectations such as those relating to consumer prices and may well react strongly to changing economic activity.

Second, periods of higher productivity growth may lay the basis for high corporate earnings, heightened optimism and reduced risk awareness. At the same time, with strong productivity growth, inflation remains low. Banks that record low losses and solid results can increase lending without eroding their capital. Debt-financed investments may then lead to a faster rise in property prices.

Third, strong international competition may contribute to curbing inflation during a period of strong economic expansion.

Given that a conflict between the two goals may arise; how are financial stability considerations incorporated into monetary policy decisions?

There seems to be widespread agreement among central banks that extreme events which could threaten financial stability should be met by resolute use of monetary policy. For example, leading central banks made an effort to ensure continued liquidity in the markets in the aftermath of the terrorist attack on the World Trade Centre on 11 September 2001. As a consequence, the risks confronting the financial system were limited.

However, risks to financial stability due to evolving financial imbalances are likely to develop over a long period of time. From this perspective, the question of whether financial stability considerations should be explicitly included in monetary policy is heavily debated, both in academia and in central banks. The answers diverge and international consensus has not yet been reached.

One view is that an explicit and proactive monetary policy response to financial imbalances is neither desirable nor feasible. A number of concerns have been raised to explain this view.

First, it is well documented that asset price bubbles and financial imbalances are very difficult to identify ex ante. Second, the appropriate timing of a proactive monetary response is likely to be difficult to determine, given the lags in the impact of monetary policy. Third, even in the case where the central bank knew that financial imbalances were building up, the size of the interest rate rise needed to reduce the imbalances might be so large that it could lead to a severe economic downturn.

A more general concern is the potential moral hazard of a systematic, proactive monetary policy response to financial imbalances. For example, investors may “undervalue” the risk they take on if they expect that the central bank will act to offset future financial instability concerns.

In recent years, the idea of using monetary policy to

prevent a build-up of financial imbalances has received increased attention.

Several central banks can be seen as supporters of taking into account the impact of financial imbalances on future output and inflation. Three quotes can serve as examples of the attention paid to financial imbalances in conducting monetary policy, based on slightly different justifications:

- “For example, to the extent that a stock-market boom causes, or simply forecasts, sharply higher spending on consumer goods and new capital, it may indicate incipient inflationary pressures. Policy tightening might therefore be called for – but to contain the incipient inflation, not to arrest the stock-market boom *per se*.” (Ben S. Bernanke, Governor, US Federal Reserve Board, October 2002) ⁷
- “Truly optimal monetary policy cannot avoid that, at times, strains in the financial system might be such that deviations from the desired inflation rate during shorter periods of time have to be accepted, in order to preserve price stability over the medium to long run.” (Otmar Issing, Member of the ECB Executive Board, March 2003) ⁸
- “...the developments in credit and house prices are one argument against looser monetary policy. A rate cut followed by a faster hike could bring about problems through their effects on household indebtedness and consumption.” (Lars Heikensten, Governor, Central Bank of Sweden, March 2005) ⁹

Mr Bernanke’s quote recognises the channel between the stock-market boom and incipient inflationary pressures. Mr Issing focuses attention on financial imbalances on the grounds that strains in the financial system may conflict with price stability in the long run. Mr Heikensten calls attention to the possible repercussions of financial imbalances on the real economy in a situation where the household debt burden is high and interest rates are increasing rapidly.

Seen from an institutional perspective, flexible inflation targeting is becoming an increasingly common monetary policy regime. With a target horizon that is forward-looking and sufficiently flexible, it is possible to take into account the impact of potential financial imbalances on future inflation and output. However, it is important to keep in mind that the unwinding of financial imbalances may lie many years ahead, well outside the horizon for the inflation target. Some situations may require a careful weighting of the probabilities and costs of not reaching the inflation target within a medium-term horizon against possible economic turbulence further ahead. In the worst case, this turbulence may trigger a financial crisis.

⁷ Bernanke (2002)

⁸ Issing (2003)

⁹ Heikensten (2005)

Another interpretation of the role of monetary policy is that it demands that financial instability is taken into account beyond its impact on inflation and output. For instance, structural costs may arise as a result of incorrect decisions by economic agents, based on incorrect information in the period characterised by financial imbalances. The Reserve Bank Act in New Zealand explicitly states that the Bank, in formulating and implementing monetary policy, should “have regard to the efficiency and soundness of the financial system”.

In Norway, a flexible inflation-targeting country, we have chosen to incorporate financial stability considerations into the monetary policy decision process. This is partly because financial balances are important for inflation and output and partly because this will ensure sufficient attention is paid to the potential risks to financial stability. In addition, departments dealing with financial stability gather structural and empirical information about the financial system and the financial position of households and enterprises. In my view, these are important inputs to the monetary policy process.

Challenges ahead

There has been substantial development in the way we think about financial stability. From viewing it as a state merely distinguished by the absence of a financial crisis, we now see it as a state where the financial system's favourable qualities are allowed to function in an efficient and proper manner.

At the same time, the financial system in itself has changed. Its instruments have become more numerous and more sophisticated. Positive welfare effects are gained because of greater efficiency and more opportunities in the market. The flip side of the coin is that increased complexity makes the system less transparent and harder to follow.

This development is bound to influence the way authorities pay attention to financial stability issues. New challenges have been brought to our attention, new questions have to be raised and new scenarios have to be analysed. As a consequence, new solutions may be required.

We should use the opportunity to plan ahead now, while the outlook for financial stability internationally is benign.

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