A MACRO-PRUDENTIAL POLICY
OBJECTIVES AND TOOLS

The need for a framework for macro-prudential policy has been widely recognised in the aftermath of the financial crisis. This special feature discusses, in a tentative way, core elements of this framework: namely its objectives and the policy tools that could be used to achieve them.

The bulk of the policy tools, for which concrete proposals have been put forward at the global level, tend to aim at enhancing the resilience of the financial system. A different set of tools, aimed at addressing financial imbalances directly, could also be of importance in mitigating system-wide risks. Central banks’ involvement in macro-prudential policy advice could relate to this latter set of tools more prominently, supported by their systemic risk surveillance and assessment tasks.

INTRODUCTION

The financial crisis has illustrated a considerable gap between financial stability monitoring and assessment tasks (as are conducted by e.g. central banks with financial stability responsibilities) and their translation into effective macro-prudential policy action. In particular, as imbalances were building up in the financial system in the years prior to the summer of 2007, communications of financial stability assessments in both dedicated reports and speeches, for example, illustrate that a number of risks that have subsequently materialised had been identified and remained on central banks and other institutions’ radar screens. While assessments might not have been formulated in a sufficiently sharp and eloquent way, the fact that market participants did not expect concrete policy action to derive from the publication of these assessments might also justify their lack of impact on contemporaneous market data, or the ability to affect the behaviour of market participants at longer time horizons.

The costs of financial instability in the event of systemic risks materialising, however, proved to be too high in terms of both losses to the financial sector and losses to the real economy (as measured by a drop in GDP, for instance, or an increase in public debt) to leave the financial stability oversight process unchanged. In particular, it was recognised that raising awareness of growing vulnerabilities and potential material risks to financial systems’ stability was not enough to influence market participants’ behaviour and contain overall systemic risk.

In addition, the recent crisis has emphasised the importance of sources of systemic risk\(^1\) such as those emerging from financial interlinkages between large financial institutions and their collective behaviour. These vulnerabilities concurred with those stemming from the build-up of imbalances over time that could, for example, be gauged from trends in aggregated macro-financial variables, possibly related to structural developments (and therefore tending to be more adequately monitored by central banks in charge of safeguarding financial stability). In particular, recognition that the supervisory and regulatory framework generally did not address system-wide risks directly has triggered an intense debate at the global level, and a comprehensive on-going reform.

At the same time, efforts to enhance the capacity of timely and effective risk detection and assessment, as well as effective macro-prudential oversight, are taking place along three fronts: (i) efforts to improve the quality and appropriateness of data and information sources on which assessments are based (e.g. recommendations endorsed by the Group of 20);\(^2\) (ii) efforts to improve the technical tools supporting systemic risk analysis, notably risk

---

\(^1\) A commonly accepted definition of systemic risk does not exist at present. It can be broadly characterised as the risk that financial instability becomes so widespread that it impairs the functioning of a financial system to the point where economic growth and welfare suffer materially (see ECB, “The concept of systemic risk”, Financial Stability Review, December 2009).

detection and risk assessment; and (iii) efforts to close the gap between systemic risk assessments and recommendations or decisions on policy action to mitigate the risks identified as material. The focus of this special feature is on the latter strand of efforts, discussing objectives and instruments that can be used by authorities in charge of macro-prudential oversight.

MACRO-PRUDENTIAL POLICY AND OTHER POLICY AREAS

Financial stability is by definition a multifaceted concept, given that it entails the stability of the whole financial system – comprising financial institutions, financial markets and financial infrastructure. As such, financial stability depends on interactions and externalities within and between financial institutions, markets and infrastructures, on the one hand, and the broad economic environment, on the other.4 This creates difficulties in defining the objectives of financial stability policy or, as it is more usually dubbed, of macro-prudential policy. It also implies that macro-prudential policy is likely to interact with a number of other macroeconomic policy fields, such as monetary or fiscal policy (see Chart A.1).

However, and irrespective of the scope for overlaps, it should be clear that macro-prudential policy relates exclusively to crisis prevention (as is indicated by the word “prudential”) and that is the concept within which the efforts to set up a framework for macro-prudential analysis and oversight are being undertaken. A clear distinction between crisis prevention, as opposed to crisis management (in which central banks may also have an important role to play), and crisis resolution helps in organising views with respect to the scope for interaction between macro-prudential and, for example, monetary policy, even if there might be some grey areas.

Turning to other policy areas such as fiscal and economic policy on specific sectors, it should be clear that, while there might be scope for interaction in addressing growing financial imbalances, macro-prudential policy may not be the right approach to address them.

Take, for example, a boom in property markets. The root causes for this imbalance may relate to (tight) regulations on building permits and specific features of the tax regime (e.g. tax deductibility of debt service). Reform in the property development industry (sectoral policy) and fiscal policy – and not macro-prudential policy – could address the problem at its source. The situation would be different if the boom in property markets was fuelled by financial leverage.

Another example relates to the use of a monetary policy instrument, such as the minimum reserve requirements, to address financial vulnerabilities (e.g. reserve requirements on foreign currency loans extended by banks in central and eastern European countries).5 As illustrated by countries’

---

3 See Special Feature B, entitled “Analytical models and tools for the identification and assessment of systemic risk”, in this FSR for an overview of analytical investments being made at the ECB.
4 See, for example, the definition of financial stability used in the preface of each issue of the ECB’s FSR.
5 See Special Feature D, entitled “Addressing risks associated with foreign currency lending in the EU Member States”, in this FSR.
experiences, such a measure has generally not proven to be very effective in enhancing liquidity positions of financial institutions.

**OBJECTIVE OF MACRO-PRUDENTIAL POLICY**

Specifying the objective of macro-prudential policy is not straightforward, even if only formulated in broad and qualitative terms. The multifaceted nature of a stable financial system poses serious challenges to the development of a quantitative, more operational, characterisation of stability.

In broad terms, policy-makers tend to agree that the objective of macro-prudential policy is to limit systemic risk, so as to minimise the costs that financial instability can impose on the overall economy.6

Limiting systemic risk entails enhancing the resilience of the financial system by addressing both risks stemming from contagion and other forms of interaction between financial institutions (cross-sectional dimension of systemic risk) and the building-up of financial imbalances over time (time dimension of systemic risk).7

Improving the resilience and the capacity of the financial system to withstand shocks can be seen as an intermediate step to achieve the objective of ensuring a stable provision of financial intermediation services to the economy8 (in the sense that the former is a necessary condition for the latter).

Among the characteristics of a stable financial system, that of efficiently and smoothly reallocating financial resources from savers to investors figures prominently.9 The formulation of the objective of macro-prudential policy in these terms would call for policy action in a symmetric way, i.e. both in periods where systemic risk is assessed to be increasing and in periods where systemic risk might be perceived as low, but there are impediments to the efficient allocation of financial resources among players in the system.

Finally, in limiting systemic risk, macro-prudential policy could go beyond enhancing the resilience of the system and ensuring the stable provision of credit and financial services by trying to address detected sources of systemic risk directly (see Chart A.2). Putting it in metaphoric terms, it would mean complementing efforts to build a robust shelter for the financial system with attempts to attack sources of imbalances directly or to intercept them before they “hit” the financial system.

**MACRO-PRUDENTIAL POLICY INSTRUMENTS**

The financial crisis has set in motion an intense debate on macro-prudential policy at the global level, coupled with efforts to enhance the information base on which systemic risk assessments and suitable policy responses will be formed.

---

6 Phrased in these terms, the specification of the objective implicitly suggests that there should be an underlying “unavoidable” or “optimal” level of systemic risk in the system. In developing a comprehensive framework for macro-prudential oversight, further thinking needs to go in this direction, also considering the possibility that this “appropriate” level of systemic risk could vary over time, (e.g. on account of structural changes in the financial sector).


8 As proposed in, for example, Bank of England, “The role of macroprudential policy”, Discussion Papers, November 2009.

The range of macro-prudential policy instruments is potentially vast, not least on account of its need to encompass measures targeting all three components of the financial system. As such, macro-prudential policy instruments include measures addressing vulnerabilities stemming from financial markets – e.g. measures relating to securities markets or funding instruments such as margins and haircuts on unsecured lending – as well as measures addressing vulnerabilities related to market infrastructures – e.g. encouraging a wider use of central counterparty (CCP) clearing houses for over-the-counter (OTC) derivatives trading and making CCPs comply with sound standards. The bulk of macro-prudential policy measures under discussion, however, relates to the remaining component of the financial system, namely financial institutions. Instruments under discussion in this domain are, for the most part, supervisory or regulatory tools adjusted to address macro-prudential policy objectives, in broad terms, to limit systemic risk. In particular, a number of macro-prudential policy proposals for the banking sector have been put forward by the Basel Committee on Banking Supervision (BCBS).

While the debate is centred primarily on measures enhancing the resilience of the banking sector – given its weight on the whole financial system – other financial sectors such as insurance, securities firms and, to the extent that this is possible, unregulated financial entities should also be subject to macro-prudential policy.

**Policy tools to enhance system-wide resilience**

Proposals put forward by the BCBS relate to policy tools directly affecting banks’ balance sheets. These comprise measures both of a micro-prudential nature, i.e. measures aimed at enhancing the resilience of institutions individually, and supervisory or regulatory measures adapted to achieve macro-prudential objectives. Among the policy tools to address the cross-sectional dimension of systemic risk are, for example, revisions to the prudential treatment of counterparty risk exposures (e.g. risks arising from derivatives and securities financing activities). Possibly more widely debated, due to their novelty, have been BCBS proposals on policy tools to address the time-dimension aspects of systemic risk. Examples of these measures are the establishment of a variable capital buffer to be adjusted through the credit cycle, as well as forward-looking provisioning (Table A.1 provides a summary of the BCBS measures included in the latest consultative package).

Other bodies such as the Financial Stability Board (FSB) are analysing additional measures to enhance the resilience of the system. In dealing with the cross-sectional dimension of systemic risk, a measure under discussion is the possibility of introducing a capital surcharge on systemically relevant institutions (or systemically important financial institutions, SIFIs). These capital surcharges would attempt to account for these institutions’ individual contributions to the overall level of risk in the financial system (implying a higher capital buffer for SIFIs). The difficulties in making this proposal operational are considerable, on account of the challenges of identifying the set of systemically relevant institutions and the appropriate calibration of the surcharge. In the same vein, the possibility of imposing a systemic tax on SIFIs is being examined. Consideration is also being given to the possibility of introducing additional liquidity surcharges for these institutions.

---

13 See also Special Feature C, entitled “Recent regulatory initiatives to address the role of systemically important financial institutions”, in this FSR.
Another proposal under discussion relates to contingent capital instruments. Under this proposal, financial institutions could issue debt instruments that would automatically be converted into equity under specified conditions of financial distress, thereby increasing their robustness to withstand unexpected shocks.14

Measures that are related mainly to crisis resolution, but which would also affect financial institutions’ behaviour towards risk by mitigating moral hazard, include, for example, risk-based deposit insurance schemes (affecting the banking sector as a whole) or measures to enhance the resolution of failures of large and complex financial institutions. Risk-based deposit insurance premia have already been in place in a number of deposit guarantee schemes in some countries in the EU, and around the world, for a number of years. Their wider adoption, or refinements of the financial parameters (measures of risk) on which they are based, could be recommended under the macro-prudential policy toolkit. Among the measures addressing systemic entities (as are being considered by the FSB), recovery and resolution plans – in particular the so-called living wills – as well as resolution funds, are under debate with a view to enhancing resolvability.

Overall, the measures mentioned so far, in particular the tools acting directly on capital and provisioning, as well as measures relating to the liquidity risk framework, act primarily on banking institutions’ balance sheets, on their capital and liquidity positions, and thereby tend to impact on the supply of credit.

Besides policy tools targeting the banking sector with a view to enhancing its resilience, measures on non-bank financial institutions may also address macro-prudential goals. While less discussed, enhanced monitoring tools

14 Ibid.
and stricter prudential requirements are being considered in the regulatory reform underway for other regulated sectors such as insurance and securities firms. For the insurance sector in particular, the financial crisis has been interpreted as a sign of the imperative need to move fast towards the implementation of the Solvency II regulation, also ensuring that effective efforts are being made regarding the harmonisation of reporting frameworks.

**Policy tools to address imbalances**

Turning back to the banking sector, another set of macro-prudential tools can be aimed not at affecting the credit supply (by acting directly on banks’ balance sheets), but rather at affecting credit demand (acting on the borrowing side) by directly addressing the sources of financial imbalances. Bringing back the discussion on policy objectives, these measures would complement those aimed at increasing the robustness of the system and its ability to withstand shocks. They would protect the system in a different way, namely by acting directly on the root causes of the identified imbalances. As such, authorities in charge of macro-prudential oversight (e.g. central banks, irrespective of possible responsibilities in the field of the supervision and regulation of the financial sector) could be better positioned to make proposals on potential measures affecting credit demand. Macro-prudential oversight tasks, which entail the continuous monitoring of endogenous15 and exogenous sources of risk to the system’s stability, aim at the early identification of vulnerabilities and risks. These can relate to the building-up of leverage in specific sectors of the economy, in particular if they arise in combination with other latent financial fragilities. They could also relate to signs of overheating in particular financial or property markets.

Measures affecting imbalances could include attempts to act directly on mortgage demand or credit demand from specific sectors in the economy. Examples are measures on lending contracts with a likely impact on demand for credit, such as imposing limits on loan-to-value (LTV) ratios to reflect greater risk in the underlying collateral. Other measures restricting borrowers’ ability to contract a loan relate to limits on loan-to-income (LTI) ratios or other micro-based indicators of mortgage debt servicing capacity at the micro-level transposed into generalised rules or recommendations applicable to the sector as a whole.16

Like the time-varying policy instruments on capital or liquidity requirements, LTV ratios could be applied, in the macro-prudential context, in a dynamic way, responding to the detection of emerging imbalances. This would mean, for example, that LTV ratios and other measures restricting mortgage demand would be tightened in phases where growth is perceived to be excessive, and relaxed (i.e. increased) in housing market downturns.

The use of limits on LTV ratios in a time-varying way, as a macro-prudential policy tool, would be equally applicable to the commercial property sector, should imbalances be detected there. LTV ratio caps to curb excessive lending in property markets could be imposed uniformly, or according to property price buckets in the event of imbalances being detected, for example, primarily in high-priced or luxury property.

While these types of measures can certainly not eliminate the potential for the build up of bubbles in real estate markets (for example, related to fundamentals such as a limited supply of housing), and the scope for evasion might be higher in some constituencies, their use in a macro-prudential context may help to reduce the scope for overheating in property markets fuelled by bank debt.

Similar measures can be developed to target borrowing conditions for specific sectors in the economy for which growth in leverage levels might pose systemic concerns. This could be

15 As they stem from within the financial system.
16 A main drawback of this type of measure could be the scope for circumvention or evasion if it is not applied in a consistent and coordinated way.
done in the form of tighter collateral rules, e.g. by increasing collateral haircuts on secured lending in boom phases that would then be removed or relaxed in downturns. The recommendations on time-varying margins or haircuts on secured financial transactions proposed by the CGFS can also be seen as possibly having an impact on credit demand by affecting funding conditions of non-financial institutions active in securities markets.

Besides their potential effect in directly influencing demand for credit by households and the non-financial corporate sectors, another benefit of these types of measures might be found in their additional effect of clearly communicating, to investors and the public at large, where the main financial stability concerns lie, from the point of view of public authorities. This could have the advantage of affecting borrowers’ preferences, thereby reducing incentives for circumvention.

Imbalances can also be addressed by acting indirectly via banks’ balance sheets, not in the form of broad risk-based measures, but rather in the form of specific and discretionary measures addressing detected sources of risk. Building on the case of overheated housing markets, examples of such instruments could be LTV-based capital surcharges on mortgage lending by imposing higher risk weights on loans granted with higher LTV ratios.

Similar surcharges could be applied to the lending and other financial services provided to specific sectors of the economy, should these be perceived as posing material risks to financial system stability at a given point in time. Measures to achieve this goal could entail changing the capital-ratio risk weights on exposures to the identified borrowing sectors or specific classes of borrowers. Measures would then be removed as signs of excessive (or under-priced) lending subside. Some of the measures taken to address excessive foreign currency lending could fall in this category.17 See Table A.2 for tentative examples of possible measures to address imbalances directly. Most of these hypothetical measures could be activated in phases in which financial imbalances are being built up (in the spirit of “taking away the punch bowl”), in the context of a dynamic approach to macro-prudential policy. They are therefore not contemplated as measures that are part of the regulatory reform under way at the present juncture, where efforts

17 See Special Feature D, entitled “Addressing risks associated with foreign currency lending in the EU Member States”, in this FSR.

| Table A.2 Tentative measures to address financial imbalances directly |
|-----------------------------|---------------------------------------------------------------|
| **Aiming at affecting credit demand** | **Aiming at affecting the credit supply** |
| **Property markets** | **Credit to corporates** | **Corporates (active in securities markets)** | **Credit to corporates** |
| | Time-varying LTV (and LTI) ratios | Collateral rules on secured lending | Specific and discretionary capital surcharges |
| | Collateral rules on secured lending | Time-varying margins or haircuts on secured financial transactions | Specific and discretionary capital surcharges |
| | LTVs (LTIs) lowered in periods of overheated property markets, relaxed in downturns, possibly coupled with other borrower eligibility criteria | Increased margins or haircuts on secured financial transactions in booms and relaxed in downturns | Capital surcharges focused on main exogenous sources of risk such as adjusted risk weights on exposures to specific borrowing sectors or borrower classes |
| | Tighter collateral rules in credit extended to sectors showing excessive credit growth, or in which system-wide vulnerabilities were detected | | |
| | | | |
| **Securities markets** | Time-varying margins or haircuts on secured financial transactions | | |
| | Increased margins or haircuts on secured financial transactions in overheated periods, relaxed in downturns | | |
to enhance resilience of the system are being given priority.

**CHALLENGES**

Progress needs to be made on a number of fronts before the implementation of macro-prudential policy can take place in earnest, at the national or the supra-national level.

While the rationale behind policy instruments might be straightforward, their appropriate calibration is of the essence to obtain the expected impact on financial institutions’ or borrowers’ behaviour. The fact that a large number of tools could be applied cumulatively adds an additional layer of complexity to their design and calibration (e.g. countercyclical capital buffers proposed by the BCBS). The right balance between enhancing the resilience of the system and its effectiveness needs to be taken into account in the selection of the tools for actual implementation and in determining their adequate calibration.

The appropriate calibration of measures – for the sector as a whole or for institutions considered of systemic relevance – will need to take into account the existence of both negative and positive externalities. For example, sound institutions at key nodes of the financial system’s network (e.g. the interbank market) may have an important role to play, also in times of stress, as distributors of liquidity to smaller banks. Systemic levies or surcharges in the context of liquidity measures should take these aspects into account.

Furthermore, macro-prudential policy instruments of a time-varying nature require additional analytical efforts in the appropriate determination of the triggers for policy regime shifts. In the case of capital buffers, for instance, these triggers would determine the switch from the accumulation to the release of these buffers, based on macro-financial indicators of the financial cycle. In terms of the measures aimed at influencing credit demand, triggers could relate to property price valuations, or be based on specific components of household credit or corporate sector credit growth rates. In defining the timing of shifts in the policy regime, distinguishing structural developments (e.g. those related to countries’ catching-up processes) from the actual build-up of imbalances may prove to be a difficult and controversial task.

Closely linked to the financial system’s reaction to the introduction of new policy tools and their cumulative interaction (as is being assessed, for example, by the quantitative impact studies in the context of the BCBS proposals) is its ultimate impact on economic growth, i.e. whether or not the tools broadly raise borrowing costs or affect the borrowing behaviour of households and corporates (at specific points in the financial cycle). This relates to the need to improve the understanding of macro-prudential policy transmission channels on which very little analytical and empirical work has been conducted as yet.

The task of understanding transmission channels and assessing the potential impact of measures poses a number of challenges such as that of accounting for substitutability and competition between institution and market-based credit. As such, the choice of the appropriate policy instruments may depend on country-specific factors such as the structure and features of the financial system.

Furthermore, a better understanding of the transmission channels of macro-prudential policy would be critical on account of the latter’s interaction with other policy areas, in particular with monetary policy. As it tends to affect the quantity or price of bank credit, strengthening the role of macro-prudential policy requires an improved understanding of the expected impact of the policy measures that should inform monetary policy decisions.

---

At the early stage of development at which the framework for macro-prudential analysis and policy stands, the need for reflection on the risks of unintended consequences is key, as formulating policies aimed at stability may lead to vulnerabilities further down the road. For example, introducing CCPs and mandating clearing, but excluding large non-financial corporations from margining or clearing requirements, may lead to the shifting of risk from the financial to the non-financial corporate sector.

The pursuit of macro-prudential policy objectives is likely to require a great degree of international coordination, in order to keep the scope for cross-border and cross-sector arbitrage contained. Avoidance of macro-prudential policies could be manifest in the form of a migration of lending or trading activity to the unregulated domestic financial sector, the domestic non-financial sector, or across the border. These considerations need to be taken into account in the design of the appropriate policy tools and their implementation, notably at the EU level.

CONCLUDING REMARKS

Among the lessons learnt from the recent financial crisis was the need to develop a framework for macro-prudential oversight so as to ensure that systemic risk assessments are accompanied by timely and appropriate policy responses, should these be deemed necessary. In this regard, the European Systemic Risk Board (ESRB), which is to start operating in 2011, will be in charge of macro-prudential oversight and policy recommendations at the EU level.

The regulatory and supervisory reform for the banking sector that is currently under way under the aegis of the BCBS constitutes an important part of the macro-prudential policy response to the crisis. Initiatives to address systemic risk concerns in the non-banking sectors (e.g. insurers and pension funds), securities markets and financial market infrastructures are also being considered. These measures aim primarily at enhancing the resilience of the financial system.

Efforts to better align system-wide risk assessments with policy actions may justify a more prominent role for macro-prudential measures that address financial imbalances directly. This could be achieved by complementing measures that act primarily on financial institutions balance sheets with policy instruments that try to influence the demand for credit in case there are signs of overheated markets or of the build-up of financial imbalances. In the EU, the ESRB is favourably positioned to provide advice on this latter set of measures, relying on its systemic risk surveillance and assessment. At the same time, the ESRB could have an important coordinating role in the implementation of macro-prudential policy in the EU, e.g. to ensure consistency and a level playing field in the banking sector in the period ahead. Close cooperation between the ESRB and the new European Supervisory Authorities will be crucial to ensure the link between macro and micro-prudential supervision, in particular with respect to the implementation of time-varying prudential measures adjusted to the financial cycle. The need for macro-prudential supervision is now unquestionable, and European authorities are committed to ensuring its effectiveness and success.