De Nederlandsche Bank

On the special role of macroprudential policy in the euro area

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1. INTRODUCTION

I would like to thank Klaas Knot and De Nederlandsche Bank (DNB) for inviting me to this seminar. It is a pleasure to be here, and to carry on our discussions of the challenges associated with the implementation of macroprudential policy (**MAP**).

Policy-makers around the world have been engaged in recent years in a wide-ranging debate on the potential role of the new, as yet broadly untested, MAP regime and its connection with two other regimes that share similar features but have a much longer history, namely microprudential policy (**MIP**) and monetary policy (**MP**). The fact that MAP is or will soon be operational in many advanced economies does not diminish the importance of continuing this debate, especially in the euro area, which is in many ways a natural laboratory to study the challenges posed by MAP.

First, euro-area economies rely heavily on bank credit to finance the real economy. Second, their banking markets have become increasingly concentrated in recent years, and might become more so in the future as a consequence of market pressures and banking union. Third, the euro area is subject to a single MP regime, but its stance cannot take into account the heterogeneity among member states and its transmission mechanism has been weakened by financial fragmentation. Finally, major changes are taking place on the institutional side for both MIP and MAP, with an increased centralisation of functions within the ECB, but also a notable retention of responsibilities at the national level.

I will argue that this state of affairs has two main implications. The first is that MAP is likely to be more important and powerful in the euro area than elsewhere. The second is that its interaction with MIP and MP may raise issues – opportunities as well as difficulties – that are specific to the euro area and in many ways more delicate than those faced by policy-makers elsewhere.

In the following paragraphs I will first recall three key factors that make the euro area's case special: high reliance on banks (Section 2); heterogeneity and fragmentation (Section 3); and concentration of the banking system (Section 4). I will then comment on 'what to do next' (Section 5). The thread running through the arguments, to which I will come back in my concluding remarks, is that MAP will certainly play a prominent role in the euro area, both structurally and in today's situation, and that special care must be taken in operationalizing it to exploit the synergies with MIP and MP.

2. HIGH RELIANCE ON BANKS

One key common denominator of the euro-area economies is that they rely heavily on bank finance. Financial markets and non-bank intermediaries are less developed than in the US or the UK, and typically do not fully compensate for shifts in the supply of bank credit.

The MAP toolbox is generally thought to operate mainly through the banking sector; this is certainly the case for most of the instruments that we are beginning to explore following the introduction of the Basel III and CRD-IV-CRR regulation.[1] Hence, the regime could be both more powerful and more important here than in market-based economies. If a variation in MAP capital buffers had a broadly similar impact on the supply of bank credit in the US and in the EA, I would expect its impact on total credit to be stronger in the EA, where non-bank credit is both smaller and relatively less elastic. The linkage between capital buffers and aggregate credit gaps is also likely to be stronger in bank-centric economies. Other things being equal, this will tend to make the risks and potential gains from using countercyclical capital (or liquidity) buffers greater in the EA than elsewhere.

The structure of the financial system is endogenous (it reacts to changing regulation), so MAP policies focusing on banks may ultimately affect markets or the shadow banking sector.[2] In the medium term, however, the structure of financial markets in the EA can arguably be taken as given, so that high reliance on banks implies a more powerful transmission of MAP.

3. HETEROGENEITY AND FRAGMENTATION

The second distinctive feature of the euro area has to do with the heterogeneity among member states. The business cycles of national economies are not synchronous; real and financial markets are not completely integrated, despite significant progress since 1999. The fragmentation of European financial markets has a structural dimension: many European banks operate mostly in retail markets, which are by nature local markets. Furthermore, cross-border bank penetration has always been relatively low in Europe.[3] This has placed severe strains on the MP transmission mechanism. With macroeconomic outlooks that (in general) differ widely among member countries,

[1] Countercyclical capital buffers and risk weights are obvious examples of bank-focused MAP instruments. On the market side, one could think instead of restrictions on specific transactions (e.g. short selling).
[2] Panetta (2013b).
[3] From 2007 on, foreign banks accounted for 9% on average of the total number of active banks in France, Germany, Italy, Spain and held only 6.5% of total bank assets. By contrast, in the United Kingdom foreign banks accounted for 57% of the total headcount and held 14% of total bank assets. For the US, the figures are 28% and 23% (Claessens and Van Horen, 2013). Banks' foreign credit claims in euro-area countries declined significantly as a consequence of the financial crisis (see Bologna and Caccavaio, 2014).

and a monetary transmission mechanism that (as of today) works in a strongly asymmetric fashion – and is least effective precisely where it is most needed, namely in the periphery – the value of introducing policy tools with a national focus is considerable. In this environment, country-specific MAP regimes can be used not only to enhance financial stability but also to prevent financial and possibly real imbalances stemming from the 'one size doesn't fit any' problem that may at times be associated with MP. This point is intuitive, but it can also be formalised, showing that MAP rules can reduce macroeconomic volatility and improve aggregate welfare.[4]

We have plenty of evidence, both before and after the crisis, of discrepancies in real and financial cycles among euro-area countries. As an example, let us consider bank lending to firms and households during the last decade (Figure 1). Germany, France, Italy and Spain all started off in 2000 with ratios of corporate loans to GDP in a relatively narrow range between 35 and 45 per cent (panel A). Over the following ten years, however, the ratio declined in Germany, remained constant in France, increased in Italy, and literally ballooned in Spain. This diversity also appeared in household credit (panel B) and house prices (panel C).

Evidence suggests that a set of country- and/or sector-specific MAP measures could have been used in the run-up to the crisis to limit the emergence of imbalances. In fact, the crisis emphasised that policy-makers should be concerned with the whole distribution of future economic outcomes.[5] Some argue that MP could take an active stance in cases where inflation is on target but financial imbalances generate large upside or downside risks around its expected path.[6] In any case it is clear that, in dealing with situations of the kind just illustrated, targeted MAP tools are a powerful complement – possibly an alternative – to a 'lean against the wind' MP stance.

To the extent that credit booms, or excessive concentration of exposures within specific sectors in specific countries, stem from externalities among banks, MAP clearly has the potential to usefully complement a pure MIP regime.[7] Many commentators have indeed pointed to strategic complementarities – a specific form of externality by which the pay-offs associated with a bank's decision are positively affected by the number of banks that behave in the same way – as one of the key drivers behind the financial exuberance of the early 2000s.[8] Given its focus on the solvency of

[4] Angelini, Neri and Panetta (2014) examine the gains from coordinating MP and MAP in a closed economy. Brzoza-Brzezina et al. (2013) extend the analysis to the case of two countries facing asymmetric shocks but subject to the same MP, and find that country-specific LTVs and capital buffers have significant stabilising effects.

[5] Visco (2009).

[6] As Stein (2014) notes, this activist approach is justified even if the monetary authority does not have an explicit financial stability objective. The point of tackling the underlying financial imbalance is to reduce the variance of inflation and unemployment around their target values.

[7] Brunnermeier et al. (2009).

[8] In Acharya and Yorulmazer (2013), which builds on Rajan (1994), strategic complementarities cause herding in banks' investment strategies: banks choose to take on strongly correlated exposures because, if they do, negative shocks are more likely to cause systemic crises where institution-specific (e.g. reputational) losses are negligible and public

individual institutions, MIP did not historically, and probably could not in general, respond to these types of behaviour. Instead, MAP could have discouraged, for instance, excessive mortgage lending through higher LTVs on real-estate loans, or a disproportionate reliance on wholesale funding through an NSFR-type instrument.[9] Crucially, these would have operated across the board, regardless of whether banks appeared individually resilient or not.

4. CONCENTRATION

Banking systems in the euro area have a relatively high and increasing level of concentration.[10] A further impulse in this direction might come in the medium term from market pressures and from banking union. The debate on macroprudential policy has so far neglected the question of how an MAP regime could be affected by the structure of the underlying banking sector. Yet there are at least three reasons why structure – and a high level of concentration in particular – should matter.

First, the literature on the bank lending channel[11] and the bank capital channel[12] suggests that large banks with highly liquid and diversified assets are *less sensitive* to MP impulses (they adjust their credit supply more gradually in response to changes in the MP stance). A high level of concentration, whereby credit markets are dominated by a few large players, would thus make it increasingly difficult for MP to affect (bank) credit cycles: if the credit multiplier associated with monetary policy is low, any attempt to control credit aggregates through MP interventions would require large swings in interest rates, which in turn could cause significant distortions in relative prices outside the financial sector. While the effectiveness of MAP tools is still largely untested, a euro-area-wide MAP framework might be able to fill an important gap in this respect. Indeed, big, liquid, diversified banks may respond *more* to MAP impulses, as we know that the capital ratios of large banks were very close to regulatory minima until the onset of the crisis. If this regularity were to be confirmed in the future despite regulatory changes, large banks, with their thin capital buffers, would presumably be more sensitive to a CCB tightening.

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bail-outs very likely. One could think of similar complementarities operating on the liability side of the balance sheet. Short-term wholesale funding, for instance, might be attractive because the underlying markets are global and thus more likely to trigger some form of state intervention if liquidity dries up.

[9] See Catte, Pagano and Visco (2010) on the role of MAP in the US, i.e. whether adopting it would have prevented the bubble; see also Neri (2012).

[10] Between 2005 and 2011, the market share of the three largest banks in the European Union increased from roughly 46% to over 60%; in the US, it went from 20% to 30%, while in Japan it remained stable at about 40% (Bijlsma and Zwart, 2013).

[11] Kashyap and Stein (2000).

[12] Van den Heuvel (2001); Gambacorta and Mistrulli (2004).

A second, related, point is that the interaction between MP and MAP ought to be weak(er) and thus less problematic with higher market concentration. One of the key messages of the literature on the interaction between MP and MAP is that there can be significant overlaps between the two.[13] However, to the extent that concentration weakens the financial stability spillover of MP by making banks' lending decisions less dependent on the monetary policy stance, it also widens the margins for MAP decisions to be taken autonomously.[14] This would be good news for the euro area, where the policy framework should place national MAP authorities in a good position to internalise conflicts between MAP and MP.

Finally, the concentration of the industry is also an important determinant of the extent of any overlaps between MAP and MIP, and hence any potential tension between the two. To see why concentration matters, think of two polar cases. In a *one-bank economy*, the overlap between MIP and MAP is perfect, and coordination is crucial. If there is no coordination, when a recession arrives the MIP authority raises its requirement, the MAP authority reduces its own, and they end by neutralising one another. In an economy with *many (N) small banks*, on the other hand, the overlap must be less significant. As long as the banks' capitalisation levels differ, the MAP authority can lower the requirement for all banks and the MIP authority can pursue its objective of preventing idiosyncratic bank failures by raising capital requirements for the *k* banks it identifies as fragile. In net terms, capital requirements will effectively fall only for *N-k* banks. This means that MAP is again diluted, by MIP, but the dilution is targeted to those banks that need higher ratios in relation to their risk. Furthermore, the combined intervention stimulates a reallocation of credit from fragile to sound banks, which is of course a desirable outcome.[15]

MIP and MAP are clearly complementary from an operational point of view. The synergy works in two ways: MAP analysis should inform and help focus the activity of micro supervisors; at the same time, micro supervisors will have a key role to play in implementing most MAP policy interventions, because these are largely based on the use of micro tools to pursue macro objectives.[16] However, the two policies have different aims, and the example above suggests that the tension between them may be relatively more serious in concentrated banking systems.

[13] Angelini, Nicoletti-Altimari and Visco (2013); Angelini, Neri, Panetta (2014); Collard et al. (2013).
[14] Of course, there are other avenues through which MP can affect financial stability, for instance through a risk taking channel (e.g. Borio and Zhu, 2012). Not much is known about the relationship between this mechanism and the level of concentration in the banking sector.
[15] Heterogeneity among banks is crucial to this argument: if the *N* small banks were to hold identical portfolios and capital buffers, tension between MAP and MIP would arise here exactly as it does in the one-bank world. This suggests another argument to prevent the sort of herding behaviour mentioned in Section 3, incentivising instead a good degree of diversification of business models and investment strategies across banks.
[16] Bank of England (2011).

Compared with other systems, EA economies are in many ways closer to the polar one-bank case than to that of atomistic banks. This means that working out an explicit ranking of the underlying policy objectives is crucial. Hence, clearly defining the processes regulating the interaction between MIP and MAP authorities will be particularly important in the case of the EA. It seems to me that the overarching MAP objective of reducing systemic risk is logically prior to the MIP objective of preventing idiosyncratic bank failures. This is for three complementary reasons. First, no individual bank can be safely deemed to be sound if significant systemic risks loom large in the economy: as we learned in 2008-9, even liquid and well-capitalised banks can quickly be cornered by the sudden seizure of funding markets or by asset depreciations caused by fire sales. Second, idiosyncratic bank failures are harmful mainly, if not only, because of their systemic spillovers: a given bank's failure may or may not constitute a serious problem depending on whether or not its counterparties are able to withstand its demise. Third, experience shows that big, well-diversified banks are largely sheltered from idiosyncratic shocks and can only become insolvent because of a systemic shock. On these premises, my view is that MIP should work to fine-tune regulatory requirements for individual institutions *subject to* MAP providing an adequate level of financial stability at the aggregate level.

The governance structure we set up in the euro area might strike external observers as unsuitably complex. Its design, however, is conceptually appealing, because it puts us in a good position to insure coordination between MIP and MAP at both the European and the national level. The crucial feature of the framework is that the ECB retains both MIP responsibilities (through the Single Supervisory Mechanism) and direct MAP powers to adjust the policy stance adopted by individual national authorities, in coordination with the European Systemic Risk Board (through CRR/CRD IV). The Governing Council should thus be able to internalise any tensions between MIP and MAP and enforce a well-defined hierarchy between the two.

5. CAVEATS: GETTING MAP TO WORK

There are, of course, risks and uncertainties attached to the implementation of MAP in the euro area. A first challenge – and one that is clearly not confined to the euro area only – is that financial cycles, like most economic phenomena, are notoriously difficult to identify ex ante. Assessing in real time the causes behind any divergence among countries or markets, and establishing to what extent they reflect fundamentals, is not easy. One should guard against the temptation to look at a handful of indicators in isolation. MAP should ideally be grounded in the analysis of a broad set of risk indicators and rely on a joined up, holistic view of how these are

related to economic fundamentals, domestically and abroad. Structural economic models can certainly help, but they are plainly not rich enough to capture all the dimensions of the problem. Hence, MAP policy-making is largely judgmental, and will remain so for some time to come.

To operationalise MAP it is also crucial to identify how far banks (that is, leveraged financial intermediaries) are involved in any hypothetical build-up of risks. The amount of systemic risk generated by a bubble depends on a number of factors, including who is financing it and whether the funding comes in the form of equity or debt. Typically, it is the direct participation of banks in a bubbly market that can turn a local problem into a systemic event.[17] Real-estate markets are an interesting example of this problem, so allow me to return briefly to the credit and house price data I used earlier. Preliminary statistical evidence suggests that in several EU countries bank lending predicts house prices (Table 1). This is consistent with credit being an important determinant of the demand for housing. An inverse causation, with higher prices driving more real-estate financing by banks, is potentially more problematic because it may signal that asset prices are distorting banks' choices: prices might be growing for exogenous and possibly non-fundamental reasons (a 'bubble' or a wave of optimism), and banks might be piling in to reap capital gains on the housing stock. In this case the probability of a sharp correction in prices is higher. Such a correction is also more likely to translate into a banking crisis unless macroprudential measures are appropriately tightened beforehand. Interestingly, the only country for which house prices predict credit among those listed in Table 1 is Spain.[18]

Even when the diagnosis is reasonably clear (as was apparently the case for the Spanish mortgage market in the early 2000s), political economy may get in the way of MAP: in practice, it is difficult to 'take the punch bowl away'. Furthermore, there is a risk that national authorities may design and manage national MAP regimes in a way which, although rational from a domestic perspective, could have undesired consequences. For example, national authorities may relax constraints on lending in order to stimulate the expansion of the domestic banking sector, with potential adverse spillovers for financial stability in other markets.

The controls at the ESRB and SSM level mitigate the risk of these negative spillovers, but other risks are more subtle and harder to address. When faced with an increase in a specific sectoral risk, relating for instance to real-estate loans, a national MAP authority could force banks to hold more capital by a) raising the overall capital requirement, b) creating an ad hoc buffer on real-estate exposures (although presently this is not allowed under the CRD-IV/CRR), or c) increasing the risk

[17] Aoke and Nikolov (2012); Reinhart and Rogoff (2008).

[18] An alternative explanation for this predictive relation is that rising house prices relax households' borrowing constraints, allowing them to take on more debt. The two hypotheses cannot be disentangled by looking at plain correlations. Miles and Pillonca (2008) suggest that expectations of capital gains played a significant role in driving housing credit in Spain, Sweden, Belgium and the UK before the crisis.

weights. These seemingly identical measures actually differ in important ways. One of them is the degree to which regulators wish to be transparent about what their concerns are: the nature of the vulnerability may not be fully disclosed in case a). Another is the impact on market perceptions: compared with their foreign peers, domestic banks would look relatively better capitalised in cases a) and b), while they would be perceived as relatively undercapitalised in c).

The euro-area configuration, with the ECB-SSM in a position to top up national measures, goes in the direction of assuaging political economy concerns of this kind. The punch bowl may be taken away by someone other than the host, namely a supranational authority. Furthermore, the fact that all individual initiatives must pass the collective examination of the ESRB and/or the Governing Council limits the scope for strategic choices by individual countries. MAP is certainly going to be 'an adventure more than a job', and it will entail a lot of adaptation and learning by doing. Here practice must necessarily come before theory. But since MAP can play a crucial role in resolving current economic difficulties, and the euro area has a sound institutional framework in place to handle it, our practice should begin in earnest, and sooner rather than later.

6. WHAT COULD MAP DO TODAY, AND HOW?

These reflections suggest that MAP could make a big difference in the euro area: it is likely to be a powerful instrument; it reintroduces a degree of flexibility that could compensate for the lack of national monetary policy frameworks; and it can take some of the burden away from MP. One question is how to relate this structural discourse to the impasse we find ourselves in today. As we know, the euro area is not in good shape; inflation is too low, growth is weak, MP is stretched and affected by financial fragmentation, banks' balance sheets are still strained, credit is scarce.

The scarcity of credit could be yet another manifestation of the sort of strategic complementarities that justify the existence of MAP. When an economy with a concentrated banking system enters a cyclical downturn, (large) lenders certainly have a notion that the speed of the recovery depends on their lending strategies, and they might well realise that lending more (or on softer terms) is the optimal strategy because it would stimulate growth and generate higher returns. Even in that case, though, it is possible that nobody will be willing to bear the risk of expanding their balance sheet *unless everybody else is expected to do the same*. The reason is that, without coordination, the recovery will not start and the lender who took the initiative in isolation will pay all the costs associated with running a large balance sheet in a still recessionary

environment: a credit crunch may emerge as a suboptimal Nash equilibrium.[19] This implies that in general MAP can have a role to play ex post, after the burst of a credit bubble, for exactly the same reason it has one ex ante, in the build-up phase: it corrects externalities that could otherwise bring about suboptimal equilibria.

I can anticipate two objections to the suggestion that we need expansionary MAP stimulus today. The first one is that this policy should focus on ensuring the resilience of the financial sector, without being side-tracked by attempts to control (in this case, stimulate) the credit cycle.[20] The second one is that since the regime was not in place before the crisis, there are no levers (capital buffers) on which to act. Let me tackle each in turn.

The debate whether MAP should focus only on resilience or should also aim to smooth credit cycles, and how compatible these objectives are, is not new. One might think that a narrow, resilience-based view of the objective justifies inaction by the MAP authority in the credit crunch situation just described. This conclusion is unwarranted. Restoring credit flows is a crucial step towards the full recovery of troubled euro-area economies. Stable growth prospects, in turn, are a necessary condition for a solid improvement in the health of the banking industry. Hence, even a narrow interpretation of the objective calls for appropriate MAP action today.

To be sure, banks have insufficient macroprudential capital buffers. This, however, does not undermine the arguments in favour of an activist MAP. If the scope for using capital requirements appears limited, there might be opportunities for other, ad hoc policy measures to help curb sectoral threats to financial stability. More generally, we should not let the difficulties we are currently in confound our thinking about the principles of how MAP should work and how it should relate to MIP. I have touched upon this earlier, noting that the issue might be particularly delicate in the euro area because of the concentration of its banking industry. I also discussed the ranking of the objectives, arguing that MAP should take priority over MIP. Anyone buying these arguments will presumably agree that there may be genuine reasons why MAP authorities today might want to mitigate the consequences of the (natural) push for more capital coming from MIP authorities: after all, MAP was conceived to be countercyclical. Yet the debate seems to be going in one direction only: everyone wants more capital. The range of policy initiatives discussed in recent months within the ESRB suggest that MAP decision-makers are in this sense perfectly aligned with MIP objectives.[21]

[19] A similar story is formalised by Bebchuk and Goldstein (2011).

[20] The debate on narrow versus broad MAP objectives is reminiscent of that on MP mandates (Haldane, 2013). A narrow objective is advocated, for instance, by Caruana (2011).

[21] DNB has announced the introduction of a systemic risk buffer from January 2016; similar initiatives have been taken by the authorities in Belgium, Croatia and Estonia. Slovenia is moving instead in the opposite direction and at the end of June will introduce a loan-to-deposit minimum designed to slow down the pace of banks' deleveraging.

I believe it is important to be clear on the reasons behind this alignment between MIP and MAP. One interpretation is that we are simply placing MIP objectives above MAP. As I explained earlier, I find this position conceptually problematic. An alternative interpretation is that the systemic risks faced by banks in the short-term are so significant that they completely outweigh our concerns for the medium-term prospects of the economy. In other words, more capital is needed to enhance the system's resilience today, even if that comes at the cost of slowing down the recovery and weakening the position of households and firms. This position keeps MAP separate from MIP and is consistent with the MAP stated objective of preserving systemic stability, so it is certainly tenable. However, it is also delicate given today's conjuncture. The need to stimulate credit supply ranks high in policy-makers' agenda.[22] This means that any gains in resilience delivered by restrictive regulatory measures must be carefully weighed against the implications those measures have for credit availability. Furthermore, we should do our best to combine such measures with initiatives that mitigate their pro-cyclical implications; this is certainly not easy, but it is possible (I will shortly provide an example based on our recent experience at the Bank of Italy).

Admittedly, there are no obvious answers to the question of what MAP could do today, and increasing prudential requirements is a defensible strategy given the uncertain prospects of our economies. However, in my view, an open debate on the motivation behind this strategy would be very desirable. Without that debate, the rationale for the joint MIP-MAP stance we are implementing might appear weak, and the ranking between the two policies unclear.

7. FROM THEORY TO PRACTICE

Speculating on the interactions between MP, MAP and MIP in abstract is one thing. Bridging the gap between theory and practice, and setting up mechanisms that run reasonably smoothly, is another. Like many other central banks in the euro area (and beyond), the Bank of Italy has a micro (MIP) supervisory function that coexists with its macro (MP) function.[23] This coexistence requires two elements. The first one is a protocol that regulates the bottom-up flow of information and allows the Board to form a consistent view of the state of affairs and of the related risks. The second one is a mechanism that defines the top-down transmission of decisions, assigning clear responsibilities to all the sub-structures involved in implementing any policy interventions agreed by the Board.

[22] Draghi (2014) clarifies that the ultimate objective of the comprehensive assessment is to address capital constraints on credit supply.

[23] The law that introduced capital requirements and assigned the Bank of Italy supervisory powers dates back to 1926 (see https://www.bancaditalia.it/bancaditalia/storia/1936/il_dopoguerra).

Seen through a financial stability-MAP lens, the information flow within the Bank of Italy can be divided into three phases. First, risks are examined separately by the areas with the relevant expertise. Micro risks relating to banks' balance sheets are examined by the supervisory directorate; risks relating to money markets are monitored by the markets and payment systems directorate; macro conditions of any other kind are looked at by the economics and statistics directorate. This information is shared and debated within the Financial Stability Coordination Committee. Meetings are ordinarily held twice a year, but can be called at any time by the committee members – the heads of the key directorates – or by its chair – a deputy governor. The third and last phase involves a discussion with the Board on the key conclusions, which includes a critical assessment of the evidence, a ranking of the risks and, if necessary, a list of suggestions for potential policy actions.

A supervisory initiative launched by the Bank of Italy in 2012 provides an example of the workings of this mechanism. In that case, a prolonged fall in non-performing loan coverage ratios (a micro signal) was deemed to be a potential threat for market confidence, particularly in a recessionary scenario (a macro issue). The Bank therefore launched a targeted but broad on-site review of positions with low coverage ratios to ensure that accounting practices were correct.[24] In order to avoid pro-cyclical effects, in parallel with this wave of inspections the Bank of Italy asked banks to increase internally-generated resources by cutting costs, selling non-strategic assets, adopting sustainable dividend policies, and revising the criteria for the remuneration of directors and executives.

These actions, the results of which have been published, have improved banks' practices and standards; they have helped to reverse the declining trend in coverage ratios, increase transparency and assuage investors' concerns. Thus, they relied on micro tools but were macro in spirit.

These processes will have to be adapted in the light of the radical institutional changes being introduced both at the national level (establishing a new MAP authority) and at the international level (MIP and MAP coordination and burden-sharing between national authorities and ESRB, EBA, SSM). Often, the devil is in the detail, and admittedly many details need to be sorted out for this architecture to work well. Therefore, it would be sensible to divide our time between speculation on the conceptual challenges posed by the interaction between MP, MAP and MIP and a less exciting but equally crucial effort to create a sound and effective governance structure.

[24] It was judged necessary to preserve a satisfactory level of provisioning in order to maintain investor confidence and low funding costs, particularly given the market tensions stemming from Italy's fiscal imbalances. (Panetta, 2013a).

8. CONCLUSIONS

Bold policy initiatives are rarely preceded by long periods of careful reflection. On the contrary, they are often taken in response to dramatic and unforeseen changes in the economic environment and (or hence) often at times when little is known about what the future holds in store. The situation we find ourselves in today is no exception to this rule. The financial turmoil created a strong rationale to introduce MAP, but our knowledge of the potential of this new tool is less than perfect. It will take a while to acquire that knowledge, to understand how MAP interacts with MP and MIP, and to explore ways to get the best out of all three. Operating the system in the meantime will surely be challenging.

The spirit of my remarks today is that, besides being inevitable, this challenge is very much worth meeting. MAP can deliver great benefits to the euro area in terms of macroeconomic and financial stability. Furthermore, the area has an institutional framework that favours coordination and places us in a good position to observe and exploit the complementarities between this and other, more traditional policy frameworks. We knew from the start that learning by doing would be central to MAP. Given these two preconditions, we should start doing, and learning, as soon as possible.

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Table 1. Test of Granger causality between lending for house purchase and housing prices in selected EU countries (1)

(2003Q2-2013Q3, annual growth rates)

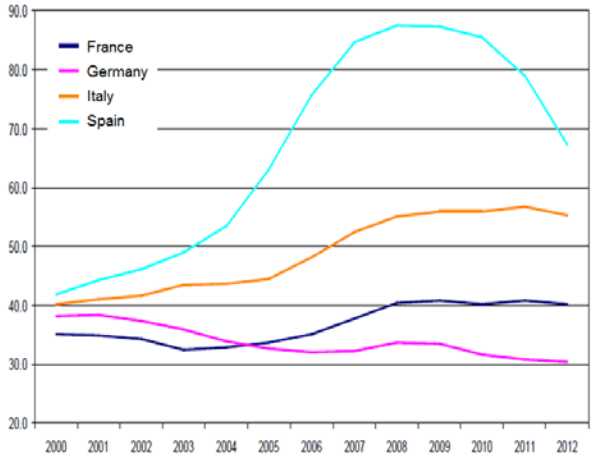
Country	F-Statistic	Prob.	Significance level	Causality (2)	2007 LTV ratio	Banking crisis	Real-estate crisis
Belgium	5.071	0.006	***	C→P	80		
France	4.928	0.006	***	C→P	91	x	
Italy	4.638	0.016	**	C→P	65		
Netherlands	2.866	0.099	*	C→P	101	x	x
Spain	4.030	0.027	**	P→C	73	x	x
UK	4.583	0.009	***	C→P		x	x
Germany			Not significant		70		

(1) The null hypothesis is no Granger causality. Lending for house purchase is measured as domestic credit to households for house purchase as a share of GDP.

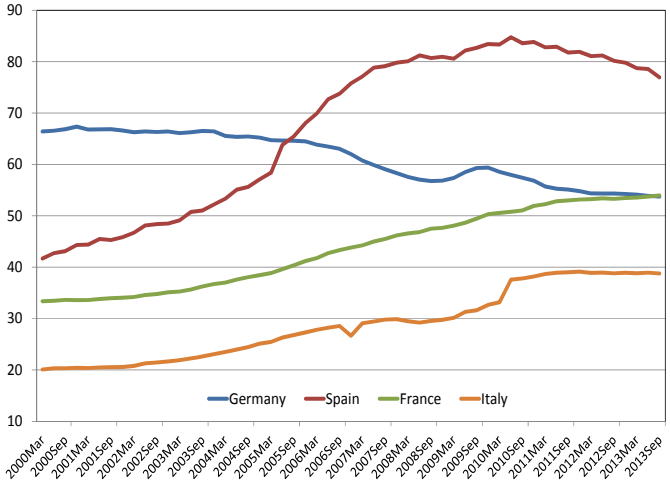
(2) C→P = credit causes house prices; P→C= house prices cause credit.

Figure 1: Heterogeneity across Europe

(A) Bank loans to firms in selected euro-area countries (per cent of GDP)

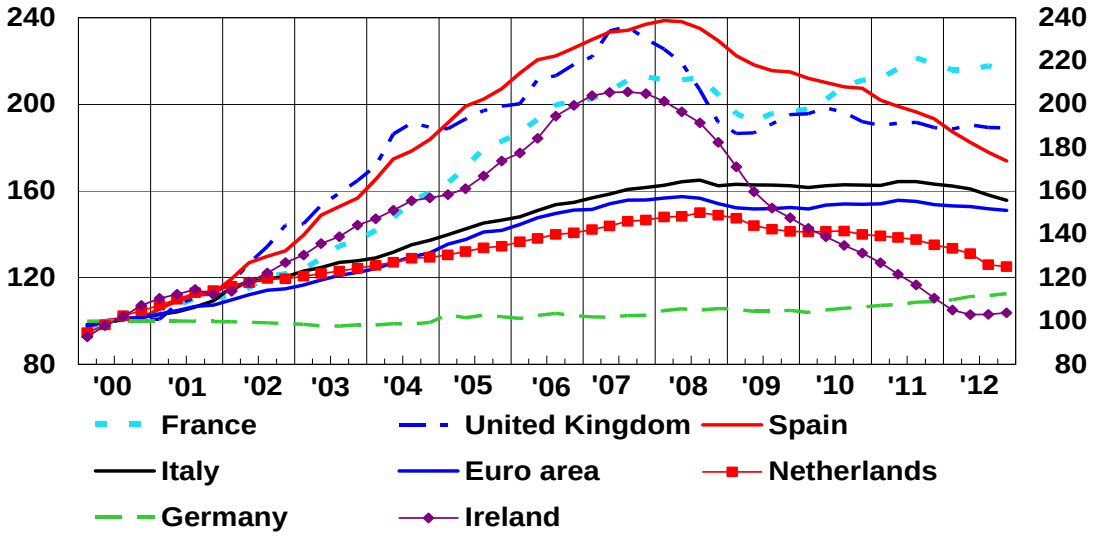


(B) Domestic bank lending to the household sector (per cent of GDP)



Source: ECB and Eurostat

(C) House prices in selected European countries



Source: Bank of Italy, *Financial Stability Report*.