



BANCA D'ITALIA
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PRUDENTIAL POLICY AT TIMES OF STAGNATION: A VIEW FROM THE TRENCHES

by Piergiorgio Alessandri and Fabio Panetta*

Abstract

In the euro area, macroprudential policy can be a powerful complement to monetary policy. However, its coordination with microprudential policy is a particularly delicate task. The coexistence of two supervisory regimes that rely on similar tools to pursue different objectives may at times give rise to conflicting decisions, or create uncertainty on the logic of the prudential framework. These risks are structurally greater in bank-based economies with highly concentrated banking sectors, and may be heightened in the contractionary phase of the cycle, when policymakers face a short-run trade-off between the resilience of the financial sector and the speed of economic recovery. This makes the micro/macro coordination problem a top priority for European supervisors today. In order to address it, supervisors must agree to rank their policy objectives and examine their interventions from a general equilibrium perspective. We remain agnostic as to how much capital European banks should ultimately be required to hold. Instead we stress that, irrespective of the target, supervisors should achieve it over the appropriate time span, minimizing any negative spillovers on credit supply and protecting the credibility of the newly-launched countercyclical macroprudential framework with all available means.

JEL Classification: G21, G28.

Keywords: banking supervision, coordination, policy uncertainty, euro area.

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1. INTRODUCTION

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, macroprudential regime (henceforth MAP) 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. The euro area is in many ways a natural laboratory to study the challenges and the opportunities associated to MAP. First, euro-area economies rely heavily on bank credit to finance the real economy. Second, the euro area is subject to a single MP regime, whose stance cannot take into account the heterogeneity among member states and its transmission mechanism has been weakened by financial fragmentation. Third, banking markets within the area are highly concentrated, and concentration might increase further in the future as a consequence of market pressures and the banking union. 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.

We argue that this state of affairs has two main implications. The first one is that MAP is likely to be particularly important and powerful in the euro area. By introducing a set of tools that (i) work directly on bank balance sheets and (ii) can be adjusted on the basis of country- or sector-specific considerations, the framework enhances national authorities' ability to control 'local' macro-financial cycles and reduces the burden imposed on MP in recent years. The second one is that the interaction between MIP and MAP raises issues that are in many ways more delicate than those faced by policymakers elsewhere. Since micro and macroprudential supervisors use similar tools to pursue different objectives, their interaction could generate conflicts, inefficiencies and possibly a good deal of confusion in the public on how the prudential framework as a whole operates. These risks are clearly higher in economies that depend heavily on a handful of large banks. They may also be heightened by the agency problems embedded in the actual implementation of banking supervision: the distinguishing feature of MAP should be its countercyclical nature, but countercyclicality might be hard to achieve if supervisors are not willing to 'take the punch bowl away' in good times (a well-known issue by now) or to be less demanding in bad times – a less-known possibility, but one that in our view deserves as much attention. The upshot is that, although the potential benefits of the new MAP policy are very high, its success in the euro area hinges on how clearly the authorities define its objective and its role within the supervisory framework and on how effectively they manage its interplay with MIP.

An in-depth analysis of the policy coordination issue (between MAP, MIP and MP) is crucial not only to establish concretely what MAP should do today, but also to ensure its credibility in the longer term.

From the conjunctural viewpoint, MIP supervisors in the Euro area are putting pressure on banks' in order to increase their capital ratios, in order to rebuild the confidence lost as a result of the crisis. At the same time, MP is currently striving to restart lending in order to address the key risk to financial stability in the euro zone, represented by weak real and nominal growth. Although

both policies are operating in accordance with their objective, there is a risk that *de facto* they end up pushing in different directions: higher capital buffers would enhance banks' resilience in the short run; however, since capital requirements also affect banks' ability to finance the real economy, a significant increase in capital ratios at the current juncture could jeopardise the recovery and the reflation efforts pursued by the ECB. A genuine MAP approach may contribute to mitigate such divergence. In fact, the path through which greater bank capitalization is attained is not unimportant: building up the buffers without endangering the recovery requires an adequate transition and a difficult balancing act in which the role of MIP, its interactions with other policies and its general equilibrium effects on the economy of the area are carefully taken into account. We do not object to an increase in banks capital requirements *per se*. It is very difficult to answer to the question of how much capital European banks should be asked to hold. We argue however that, whatever that target is, coordination among micro and macro policies, timing and communication to the public are crucial to achieve it in the best possible way.

From a longer term perspective, the debate on the role of MAP is crucial to shape public expectations on how it will work in general in the future. The initiatives taken by supervisors today set an important precedent: if they appear opaque or erratic they may be harmful irrespectively of whether or not they go in the right direction, because they will create uncertainty on the scope and the logic of the new policy framework. A good management of this delicate phase requires a combination of four factors: a solid *positive* understanding of the interaction between MIP and MAP and of their relation to MP; a clear *normative* ranking of the underlying policy objectives; an encompassing view of the tools that can be deployed under MAP (which clearly is not or should not be only about bank capital); a careful communication strategy. This paper aims to raise questions and offer constructive suggestions on on all four issues.

The remainder of the paper is organised as follows. We first examine three key structural factors that make the euro area's case special when thinking about the role of MAP and its coordination with MIP: high reliance on banks (Section 2.1); heterogeneity and fragmentation (Section 2.2); and concentration in the banking industry (Section 2.3). We then discuss the role of MAP in the current economic environment, examining in turn the issues associated to adjusting capital requirements (Section 3) and the general problem of coordinating micro and macro supervision (Section 4). To substantiate our claim that coordination is crucial, we illustrate what might happen if it goes missing by showing that an increase in "policy uncertainty" typically leads to a tightening in the supply of bank loans (Section 5). Section 6 concludes.

2. THE SPECIFICITY OF THE EURO AREA

2.1 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 cannot fully compensate a reduction 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 euro area, we would expect its impact on total credit to be stronger in the the latter, 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 bank capital or liquidity buffers greater in the euro area 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 sector²; in the medium term, however, the structure of financial markets can arguably be taken as given, so that high reliance on banks implies a more powerful transmission of MAP.

2.2 HETEROGENEITY AND FRAGMENTATION

The second distinctive factor 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, and a monetary transmission mechanism that (as of today) works in an 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

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 (2013).

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).

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, 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).

In particular, the Spanish housing market followed a trajectory that resembled more closely that of the UK than that of the other euro area economies. Fast growth in bank credit and house prices is clearly a cause of concern. The amount of systemic risk generated by an asset price bubble depends on who is financing it and how: typically it is the direct participation of banks in a bubbly market that turns a local problem into a systemic event.⁵ The patterns displayed in Figure 1 are thus at least suggestive that MAP could have been deployed to control the credit cycle in Spain. A closer inspection of the data lends further support to this conjecture: as shown in Table 1, in most countries bank lending predicts house prices, which is consistent with credit being an important determinant of the demand for housing.⁶ The exception to this rule is Spain, where the relation goes in the opposite direction: higher prices predict (and hence possibly drive, although causation cannot be taken for granted) more real-estate financing by banks. Such relation could indicate 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.⁷ This scenario entails a high probability that a sharp fall in prices will cause a significant depletion of banks' capital buffers, with potentially severe consequences for the real economy. It is clear that, in dealing with situations of the kind illustrated above, MAP tools that are tailored to the needs of a specific country or sector 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 stem from externalities among banks, MAP clearly also has the potential to usefully complement a pure MIP regime.⁸ Many commentators have indeed pointed to strategic complementarities as one of the key drivers behind the financial exuberance of the early 2000s.⁹

⁴ Angelini *et al.* (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 Aoke and Nikolov (2012); Reinhart and Rogoff (2008).

⁶ Table 1 reports the results of a set of Granger causality tests on house prices and real estate lending.

⁷ 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.

⁸ Brunnermeier *et al.* (2009).

⁹ In Acharya and Yorulmazer (2007), for instance, strategic complementarities cause herding in banks' investment strategies: banks choose to take on 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 bail-outs very likely.

Given its focus on the solvency of 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.¹⁰ These would have operated across the board, regardless of whether banks appeared individually resilient or not.

2.3 CONCENTRATION

Banking systems in the euro area have a high and increasing level of concentration.¹¹ 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 a 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’ and the ‘bank capital channel’ of monetary policy suggests that large banks are *less sensitive* to MP impulses, and adjust their credit supply more gradually in response to changes in the monetary stance.¹² A high level of concentration, and credit markets that are dominated by 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.

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.

¹⁰ See Catte *et al.* (2010) on the role of MAP in the US, or Neri (2012).

¹¹ 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).

¹² Kashyap and Stein (2000); Van den Heuvel (2001); Gambacorta and Mistrulli (2004).

¹³ Angelini *et al.* (2013); Angelini *et al.* (2014).

¹⁴ There are of course other avenues through which MP can affect financial stability, such as the ‘risk taking channel’ of e.g. Borio and Zhu (2012).

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 would 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 complementary from an operational point of view, but have different objectives.¹⁶ The example above suggests that the tension between them may be relatively more serious in concentrated banking systems. Compared with other systems, European 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 and regulating the interaction between MIP and MAP authorities is particularly important in the case of the euro area. We turn to this issue next.

3. THE DEBATE ON CAPITAL REQUIREMENTS

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. The question is how to relate this structural discourse to the delicate macroeconomic conditions experienced by the euro area in its recent past. Inflation has fluctuated well below 2% for over two years, growth has been low, MP is stretched and affected by financial fragmentation, bank balance sheets are still strained. Furthermore, credit growth remains weak across the area, although the underlying causes might differ across countries, and the need to stimulate credit supply ranks (rightly) high in policy-makers' agenda¹⁷. Despite recent improvements, the pace and strength of the recovery are still surrounded by a significant amount of uncertainty.

MAP has been conceived to be countercyclical: it should build up financial resilience in 'good times', for instance in the form of bank capital buffers, and release those resources in 'bad times', reducing the volatility of credit over the cycle. However, it is difficult for supervisors to

¹⁵ Heterogeneity among banks is crucial to this argument: if the N small banks were to hold identical portfolios and capital buffers, a tension between MAP and MIP could arise here as well as in the one-bank world. This suggests another argument to prevent the sort of herding behaviour mentioned in Section 2.2, incentivising instead a good degree of diversification of business models and investment strategies across banks.

¹⁶ The complementarity stems from two factors. MAP analysis should inform and help focus the activity of micro supervisors. At the same time, micro supervisors play a key role in implementing most MAP policy interventions, as these are largely based on the use of micro tools to pursue macro objectives (Bank of England, 2011).

¹⁷ Draghi (2014) clarifies that the ultimate objective of the comprehensive assessment is to address capital constraints on credit supply.

stick to this prescription in the current environment. Weak growth and sluggish credit configure a ‘bad times’ situation, but there are no spare resources to be released; they have not been accumulated in due time because the framework simply did not exist. Thus, the dilemma faced by MAP today is how to improve financing conditions without contributing to a further deterioration in banks’ resilience.¹⁸ Given the strong relation that links credit and economic activity in the euro area, this question may conceivably arise again in the future, albeit in milder forms.

How should this dilemma be resolved? Based on the policy initiatives taken in recent months and discussed within the European Systemic Risk Board, decision-makers seem to be extremely cautious. Between 2014 and 2015 Austria, Estonia, the Netherlands and Slovakia have introduced a systemic risk buffer, or announced its upcoming introduction, while Belgium Ireland and Luxembourg have raised the risk weights on real estate lending.¹⁹ The common view thus appears to be that (a) the key MAP instruments in these circumstances are bank capital ratios and (b) a conservative stance is called for. In short, all we need is ‘more bank capital’. This view has emerged without an explicit debate on the underlying policy trade-offs, and it has implicitly reduced the (general) question of “what MAP should do” to a (narrow) debate on “whether capital requirements should go up or down”, and by how much. This state of affairs is dangerous and potentially harmful, irrespectively of the conclusions one reaches on the pros and cons of raising capital requirements. This is for two reasons.

The first one is that the consensus does not rest on a clear understanding of the causes that have affected lending supply in recent months. It should, because there are no ready-made answers to the question of what MAP should do in a recession with weak credit (or in any other situation for that matter), as the policy measures to mitigate the crunch and preserve resilience differ according to its motivations. Supervisors should be wary of prescriptions that simply suggest more capital because “risk is high”, or less capital because “credit is weak”, without further analysis of the underlying fundamental factors driving what we see in the data.

It is possible that the weakness in credit is mainly caused by high credit risk. If that is the case, raising capital requirements may be the right choice. This situation poses no real trade-off to MAP authorities because the regulatory constraints do not bind: lower capital requirements would fail to unlock credit flows anyway, at least as long as banks and investors think that the economic outlook may deteriorate further in the near future. Another possibility is that credit supply is weak because banks face high funding costs for reasons that are not directly related to their capital buffers. Inducing banks to hold more capital could work in this case too (to the extent that highly-capitalised banks obtain funds at lower rates), but probably only in a second-best sense. Public authorities have a range of alternative tools that can influence banks’ funding conditions more

¹⁸ The nature of this trade-off is of course hard to gauge and has been intensely scrutinized over the last few years. Cecchetti (2014) argues that the linkage between capital requirements and credit is at best tenuous. Aiyar *et al.* (2014) and Jiménez *et al.* (2015), on the other hand, provide strong micro evidence that UK and Spanish banks tightened lending significantly in response to changes in regulatory requirements in the period 1990-2013. Importantly, Jiménez *et al.* (2015) show that the state of the cycle matters: it is a regulatory tightening introduced in ‘bad times’ (in their case 2008) that depresses credit supply the most and has the most severe implications on firms’ performance.

¹⁹ Slovenia moved instead in the opposite direction, introducing in June 2014 a floor for the annual variation in the loan-to-deposit ratio that is designed to slow down the pace of banks’ deleveraging as well as rebalancing their funding structure.

directly, and they should choose among these on the basis of what is causing funding problems in the first place. The ECB's collateral framework obviously plays a critical role in this respect. If instead the problem is that banks' balance sheets are (still) deemed to be too opaque by investors, disclosure and further stress tests could also help unlock their funding. If they are burdened by a stock of bad or illiquid assets, it may also be a good idea to pool these exposures and transfer them to an investor that is not subject to market pressures and cares exclusively about long horizons, such as the State. In short, in many situations asking for more capital might be a relatively costly and inefficient way of achieving an objective that should be pursued in other ways.

Finally, consider the possibility that the crunch is caused by a coordination problem among banks. 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 is 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. In this case, MAP policy could facilitate coordination among lenders in order to bring the crunch to an end and make the banking sector sounder.²⁰

The cases just mentioned are all possible, but they suggest different policy prescriptions. Any policy measure should therefore be based on a discussion of which of them is most plausible. Increasing prudential capital requirements might well be the right MAP choice given the uncertain economic prospects of the euro area. Even if this is the case, however, this strategy should be supported by a more thorough discussion of (i) which problem(s) the interventions are supposed to fix and (ii) how these relate to the general objectives of MAP. Without these preconditions, a tightening in macroprudential requirements could be interpreted as a sign that MAP follows the same logic as MIP, or that there is still significant disagreement among policymakers on its ultimate objectives. As we argue below, this perception could damage the overall credibility of the regulatory framework (see Section 4) and hinder the recovery of the euro area (see Section 5).

The second reason why the current consensus is not satisfactory is that it seems to assume that bank capital ratios are the main instrument – *de facto* the only one – in the MAP toolbox. A behavioural economist could see this focus on capital as an example of *ambiguity aversion*; we might be acting mainly through capital ratios for the same reason why stock market investors overbuy domestic stocks: we simply know them better.²¹ Like a home-bias in investment, such a “capital bias” might obviously be suboptimal. The authorities could gain by ‘diversifying’ more their portfolio of interventions. In particular, if they do establish that tighter capital requirements are

²⁰ A similar story is formalised by Bebchuk and Goldstein (2011). Note that in this case MAP can have a role to play *ex post*, after the burst of a credit bubble, for exactly the same reason why it has one *ex ante*, in the build-up phase: it corrects externalities (a strategic complementarity) that could otherwise bring about suboptimal equilibria.

²¹ Following the ambiguity aversion analogy, the bias would emerge because we are able to characterise probabilistically the implications of a shift in bank capital requirements, which have a long story in regulation, while we lack this ability for other, new or relatively untested MAP policy instruments (see e.g. Barberis and Thaler, 2003).

necessary, but believe them to have a negative spillover on credit supply, they should combine the tightening with initiatives that mitigate its procyclical consequences. A useful analogy can be drawn with MP, where interventions aimed at controlling the exchange rate can be sterilized in order not to affect domestic money supply. In this case the objective would be to sterilize the impact of higher capital requirements on credit and economic activity. This could be done by incentivizing banks to build up their capital ratios through cost rather than credit cuts. It could also be done by facilitating firms' recourse to non-bank intermediaries, such as insurance companies, or by stimulating bond and stock issuances, in particular by SMEs.²² These measures have advantages and disadvantages that should be weighted carefully by the authorities, but they share a common important objective: sending markets an unequivocal signal that MAP supervisors have embraced their countercyclical mandate, see an increase in capital requirements in 'bad times' as a tough measure, and understand that they must mitigate its costs with all means at their disposal.

4. COORDINATING 'MICRO' AND 'MACRO'

As long as there is a link between capital requirements and credit supply, MAP and MIP authorities have a structural reason to disagree on how the requirements should change over the economic cycle. MAP authorities internalise the trade-off between capital and credit, whereas MIP authorities that operate at the level of individual institutions do not. Hence, the 'shadow value' they attach to an additional unit of bank capital is different: raising capital in a recession is naturally more costly for a MAP authority. As we argued above, this divergence is likely to be more pronounced in bank-based systems (where bank capital is more tightly linked to credit and aggregate output) and harder to settle in banking systems that are dominated by large players (where both MIP and MAP operate mainly through the balance sheets of a handful of large systemic intermediaries).

A further complication is that 'micro' policies are not restricted to operate on individual institutions but are sometimes implemented simultaneously on the entire banking system: an example in the Euro area is the Supervisory Review and Evaluation Process (SREP) provided for in CRD IV. System-wide MIP interventions are *de facto* equivalent to a MAP intervention, and are likely to affect aggregate credit and economic activity. Since in this case MIP and MAP authorities operate through the same transmission mechanisms, in principle they should attach the same 'shadow value' to bank capital and they should agree on how the requirements should be set. However, policies can still diverge. In fact, their mandate typically induces MIP supervisors to focus on a shorter time horizon or simply to overlook the macroeconomic implications and the systemic implications of their choices.

This potential tension between MIP and MAP implies that establishing and enforcing a clear hierarchy between MIP and MAP is important in general, and potentially critical from a European perspective. For better or worse, the solution supervisors give to this problem is likely to be far

²² The Italian insurance supervisor has recently broadened the possibility for insurance companies to buy corporate bonds, while the Italian government is introducing tax benefits for IPOs and new equity issuances, as well as non-pecuniary incentives to stimulate issuance of bonds and equities by non-financial companies.

more important in the long term than any specific decision they take today on capital requirements or other MAP instruments.

The governance structure of the euro area is conceptually appealing because it puts authorities 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, under the Single Supervisory Mechanism, the ECB retains both MIP responsibilities and 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 ultimate decision maker is thus the Governing Council, which interacts closely with the Supervisory Board and is called to form a judgment on draft decisions submitted by the latter on both micro and macroprudential matters. Hence, the Council should be able to internalise any tensions between MIP and MAP and enforce a well-defined hierarchy between the two. But how should such a hierarchy be defined *in principle*? And how can we make sure that it is credible and that it works *in practice*?

We submit that the MAP objective of reducing systemic risk is logically prior to the MIP objective of preventing idiosyncratic bank failures. This ranking arises 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 2008-2009, 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 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. This means that an effective management of MAP can make the *ex ante* cost associated to MIP mistakes much smaller – and, symmetrically, a misuse of MAP can hugely increase the burden on MIP authorities. Third, experience shows that big, well-diversified banks are resilient to idiosyncratic shocks and are unlikely to become insolvent without a systemic shock. In other words, systemic fire sales and liquidity shortages are not only a 'sufficient condition' for ordinary banks to fail, as noted above, but arguably also a 'necessary condition' for large banks to fail. Since MAP is designed precisely to prevent events of this kind, the individual resilience of these institutions ultimately depends on MAP as much as on MIP. It follows that, by and large, 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 (ECB, 2014).

Once a ranking of micro and macroprudential objectives has been agreed, the issue arises of how it can be implemented and rendered credible from the public's perspective. This takes us into a political economy arena where the agency problems associated to the (largely implicit) contract between the supervisors and their constituencies become important. One aspect of this problem that has received significant attention is the possibility of an *inaction bias* in supervision. It has been argued that, while the costs of restrictive MAP measures appear rapidly, their benefits in terms of systemic risk mitigation may accrue only in the future and might be hard to gauge both for the regulator and for the general public. Hence, MAP authorities may be unwilling to take restrictive actions in a boom, undermining the countercyclicality of the MAP regime. This argument has been

often advanced in policy and research circles.²³ In this sense, the difficulty of ‘taking the punch bowl away during a party’ is an important and well-understood lesson from the financial crisis.

However, supervision might also be affected by a bias that operates in the opposite direction. Although evaluating a supervisor’s performance is generally difficult for outsiders, this difficulty is clearly asymmetric: the negative implications of lax supervision (bank failures) are easier to verify than those of an overly restrictive one (an inefficiently low rate of economic growth). A suboptimal rate of economic growth is not only harder to gauge but also easier to blame onto somebody else – for instance the government, the monetary policy authority, or international competition. This implies that *ceteris paribus* supervisors might be more likely to be held accountable for being overly lenient than they are for being too tough. This asymmetry would twist the regulatory regime towards an inefficiently restrictive stance, generating an “*accountability bias*” of sorts. The most extreme manifestation of this problem would occur in a situation where (i) supervisors care exclusively about their own reputation, and (ii) the public’s only source of information on their effectiveness is banks’ actual ability to withstand negative shocks.²⁴ In this case supervisors would certainly tighten regulatory requirements beyond the socially optimal point, because this would allow them to maximise their private payoff (reputation) at the expense of public outcomes (an optimal level of credit).²⁵ Since private incentives cannot be changed by simply creating new labels and policy frameworks, MIP and MAP authorities may be equally likely to fall foul to behavioural biases of this kind despite having different objectives.

In conclusion, even if the authorities agree in theory that MAP should work countercyclically and prevail over MIP when there is a conflict between the two, there is no guarantee that such a set up will be maintained in practice. As in other areas of public policy, agency problems can force a (large) wedge between theory and practice. This is another reason why today, at the inception of the new regime, being transparent on the logic behind any MAP interventions, and making sure these are consistent with the principles on which MAP is predicated, is at least as important as getting the specifics of the interventions right. The costs of setting a bad precedent and weakening the credibility of MAP could be extremely large, and the only way for supervisors to contain them is to make sure that their decisions –whatever they might be– are derived from first principles, rest on sound economic analysis and are clearly linked to their mandates.

²³ Knot (2014), Freixas and Parigi (2009), Goodhart (2011), Tucker (2014).

²⁴ Banks’ actual survival is a noisy signal on the quality of the underlying supervision: it is informative, because good supervision enhances a bank’s probability of emerging unscathed from a stress situation, but noisy, because this correlation is not perfect.

²⁵ An early formulation of a similar problem can be found in Boot and Thakor (1993). In their model supervisors monitor banks’ portfolio choices and decide whether or not banks are viable. As in our example, the supervisors’ monitoring ability cannot be observed by outsiders, which gives them an incentive to build up their reputation. Boot and Thakor show that supervisors can boost their reputation by keeping bad banks afloat: since a foreclosure signals a previous supervisory fault, supervisors let insolvent banks operate longer than they should, hoping that positive shocks will allow them to recover. Our example illustrates that the same reputational motive can also distort regulatory requirements: higher requirements (*ex ante*) and a lax bank closure policy (*ex post*) can be seen as alternative ways for supervisors to protect their reputation.

5. THE COST OF UNCERTAINTY

Procyclicality is one of the problems associated to the lack of a well-defined and credible hierarchy between MIP and MAP. A second problem is that this ambiguity creates wide margins of uncertainty around the amount of capital that banks must hold and the time they will be given to accumulate it. Market participants are clearly sensitive to this issue; as a recent Financial Times editorial put it, “*it is one thing to decide that tighter regulations are worth the cost. It is another to exacerbate that cost through delay and indecision.*”²⁶

A large body of research shows indeed that uncertainty discourages investment and consumption. Firms typically prefer to postpone investment in an uncertain environment to avoid taking decisions that would be costly to reverse;²⁷ financial markets may exacerbate the problem, because a rise in volatility also increases the spreads on corporate debt, forcing firms to reduce leverage and scale down their operations..²⁸ Policy uncertainty is in this respect no different from uncertainty on the fundamentals of the economy. In the monetary and fiscal domains, research has already shown that an increase in the volatility of the policy instruments (interest rates, taxes, public debt) has by itself a negative impact on prices and aggregate output.²⁹ Furthermore, uncertainty on policymakers’ behaviour has been recently identified as an important drag on the recovery both in the euro area (Buti and Padoan, 2013) and in the US (Baker *et al.*, 2012). Basel III presents an interesting case-study in this respect. In fact the key policy instrument (bank capital requirements) may have become more volatile than before; moreover the policy toolbox includes now a number of new, largely untested instruments with poorly understood transmission mechanisms, and it is shared by two authorities (MIP and MAP supervisors) that may at times pursue different objectives.

To investigate the relation between uncertainty and bank behaviour in the euro area, in Figure 2 we plot a set of credit conditions indicators from the ECB’s Bank Lending Survey (BLS) against the “policy uncertainty index” calculated by Baker *et al.* (2013) for Europe. The index measures the occurrence of uncertainty- and policy-related keywords in a set of European daily newspapers.³⁰ In Panel A the index is plotted against the net percentage of banks that report a tightening in credit standards, either retrospectively (over the last three months, as per Question 1 of the BLS) or prospectively (in expected terms over the following three months, Question 6 of the BLS). There is a clear positive correlation between uncertainty and restrictions in credit standards. Furthermore, the uncertainty index appears to lead survey responses, which is at least consistent with uncertainty having a causal impact on bank behaviour. In Panel B the backward-looking BLS responses are broken down distinguishing between short-term and long term loans. The correlation

²⁶ *Make up your mind on banking regulation*, Financial Times, 26 August 2015.

²⁷ See e.g. Bloom (2009, 2014) and references therein.

²⁸ Christiano *et al.* (2014), Gilchrist *et al.* (2014). See also Blanchard’s (2009) comments on the role of uncertainty in the Great Recession.

²⁹ Baker *et al.* (2012), Mumtaz and Zanetti (2013), Fernández-Villaverde *et al.* (2015).

³⁰ The index is constructed calculating the frequency of articles that contain combinations of terms such as “uncertain” or “uncertainty” and “policy”, “spending”, “deficit”, “regulation”, “central bank” in a set of newspapers published in Germany, the United Kingdom, France, Italy and Spain (see Baker *et al.* (2013) for details). Unfortunately banking regulation cannot be separated from other sources of policy uncertainty.

is stronger in the case of long-term loans: uncertainty seems to discourage banks from entering long-term contracts, as one would expect on theoretical grounds.

The visual impression that uncertainty leads the BLS responses is supported by Granger-causality tests (Table 2). The uncertainty index shows predictive power for all credit conditions indicators examined above (backward and forward looking, short-term and long-term), while there is no evidence of predictability in the opposite direction.³¹ An additional piece of evidence is presented in Figure 3, which shows the response of banks' credit supply to an exogenous increase in policy uncertainty. The response is estimated using a simple bivariate VAR with the variables shown in Figure 2, namely the policy uncertainty index and the number of banks reporting a credit restriction over the past quarter. We identify uncertainty shocks by simply assuming that the uncertainty index does not adjust contemporaneously to BLS responses, while banks can respond within the same quarter to variations in uncertainty (an assumption that is both intuitive and consistent with the results reported in Table 2). Figure 3 shows the response of credit to a one-standard deviation increase in the uncertainty index, together with a (conservative) 95% confidence band.³² The shock causes an increase of up to 8% in the number of BLS respondents that report a tightening in credit conditions. This is significant, both in economic and statistical terms. The conclusions are not altered if we change the identification assumptions (so that banks are forced to respond with a lag to the shock), include output growth and inflation in the model, or resort to Bayesian methods for the estimation. The stylised nature of the model and the exceptional events that took place from 2008 onwards caution against a literal interpretation of these results. Nevertheless, the data supports the view that banks' lending policies are sensitive to policy uncertainty. Insofar as they contribute to the latter, poorly defined or conflicting regulatory objectives could thus *by themselves* place a drag on credit flows and economic activity.

6. CONCLUSIONS

Radical policy reforms always create challenges as well as opportunities, and the introduction of macroprudential policy in the Basel III framework is no exception to this rule. We argue that both challenges and opportunities are particularly significant in Europe. In the bank-based economies of the euro area, macroprudential policy could be a powerful and flexible complement to monetary policy. However, its interaction with microprudential policy is particularly delicate: the coexistence of two policy regimes that are based on similar tools but pursue different objectives can in principle give place to conflicts and inefficiencies and/or generate significant uncertainty among banks and investors. The current economic outlook is particularly challenging in this respect; if miscalculated, an attempt to enhance the resilience of the banking sector through stricter capital requirements could weaken the recovery and create further systemic risks in the near future.

³¹ The tests are based on bivariate models where the BLS indicators are regressed exclusively on their own lags and the uncertainty index (which is aggregated to the quarterly frequency by taking averages of monthly observations). The conclusions are robust to the inclusion of output growth and consumer inflation as additional control variables.

³² In order to take into account the small-sample nature of the exercise (the BLS is only available from 2003), we pick a high confidence level and we obtain the confidence bands by monte-carlo simulations instead of relying on asymptotic theory.

We point to three steps that supervisors should take in order to contain these risks. The first one is to openly acknowledge and internalise the interactions between microprudential and macroprudential supervision. In concentrated banking systems, ‘micro’ interventions are likely to have ‘macro’ spillovers. This is true *a fortiori* if they are aimed at the entire sector rather than at individual institutions. Like their macroprudential counterparts, microprudential supervisors should thus take into account the implications their decisions may have for the economy as a whole rather than focusing exclusively on the immediate impact of their actions on banks’ balance sheets. Timing is an important dimension of this problem: in a context of slow growth, weak credit and stretched monetary policy, any attempt to raise bank capital buffers should envisage adequate transition periods in order to minimise the negative effect on the recovery and the ensuing adverse feedback on banks. The use of additional, complementary macroprudential policy tools is also relevant: supervisors should strive to ‘sterilise’ the effect of higher capital requirements on total credit – for instance by incentivizing banks to accumulate capital through efficiency gains, or by facilitating firms’ recourse to other sources of funding.

The second step is to define the policy objectives as clearly as possible. The pivotal role assigned to the European Central Bank in the new institutional framework is a good premise for an effective coordination of monetary, microprudential and macroprudential policies, but it is not sufficient. This governance structure has to be supported by a clear hierarchy among policy objectives. We argue that the macroprudential objective is logically prior to the microprudential one. We also note that its countercyclical nature must be carefully guarded against the pitfalls of the political economy of banking supervision, as countercyclicality is notoriously easier to announce than to implement.

The third step relates to communication. Banks may need more capital, but they also surely need better information on how much capital they will ultimately be asked to hold, and when. The regulatory overhaul associated to Basel III created significant uncertainty on these matters – this is inevitable given the complexity of the new framework – and uncertainty is bad for the economy. In particular, it may weaken the supply of bank credit, making the capital-credit trade-off worse than it already is. This implies that any decisions taken by supervisors in the future should be transparent, easily interpretable and, in the long run, predictable for market participants.

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Table 1: Granger causality between mortgages and house prices in selected EU countries.

<i>Country</i>	<i>F-Statistic</i>	<i>p-value</i>	<i>Causality</i> ¹	<i>LTV ratio in 2007</i>	<i>Banking crisis</i>	<i>Real-estate crisis</i>
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		

Note: The table reports statistics and p-values for the null hypothesis of no Granger causality between the annual growth rates of real house prices and mortgage lending, measured as domestic credit to households for house purchase as a share of GDP. The sample is 2003Q2-2013Q3. *, **, *** denote significance at the 1%, 5% and 10% levels; pairs for which the significance level exceeds 10% are excluded from the table.

¹ C→P = credit causes house prices; P→C = house prices cause credit.

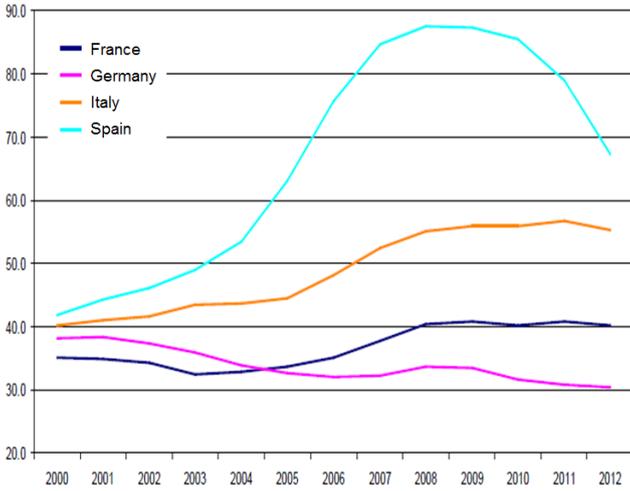
Table 2: Granger causality between policy uncertainty and credit supply

<i>Direction of causality:</i>	<i>F-statistic</i>	<i>p-value</i>
Past tightening → Uncertainty	0.907	0.471
Exp tightening → Uncertainty	0.912	0.468
Past tightening, long-term loans → Uncertainty	1.165	0.343
Past tightening, short-term loans → Uncertainty	1.126	0.360
Uncertainty → Past tightening	4.776	0.004
Uncertainty → Expected tightening	3.297	0.022
Uncertainty → Past tightening, long-term loans	5.773	0.001
Uncertainty → Past tightening, short-term loans	4.732	0.004

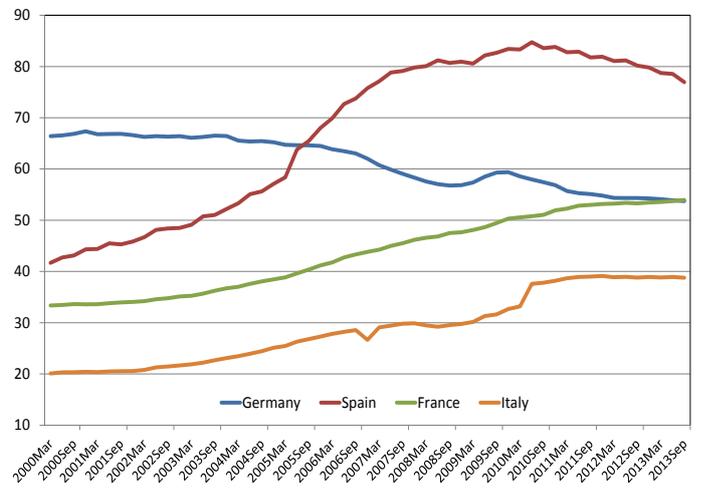
Note: The table reports statistics and p-values for the null hypothesis of no Granger causality between the policy uncertainty index of Baker *et al.* (2013) (*Uncertainty*) and four credit supply indicators extracted from the Bank Lending Survey. *Expected* (resp. *past*) *tightening* is the fraction of BLS banks who expect to tighten (resp. tightened) credit standards over the next (resp. past) three months. Past tightening is broken down distinguishing between short-term and long-term loans. See Section 5 for details. Source: Baker *et al.* (2013) and ECB Statistical Data Warehouse.

Figure 1: Heterogeneity in European financial conditions

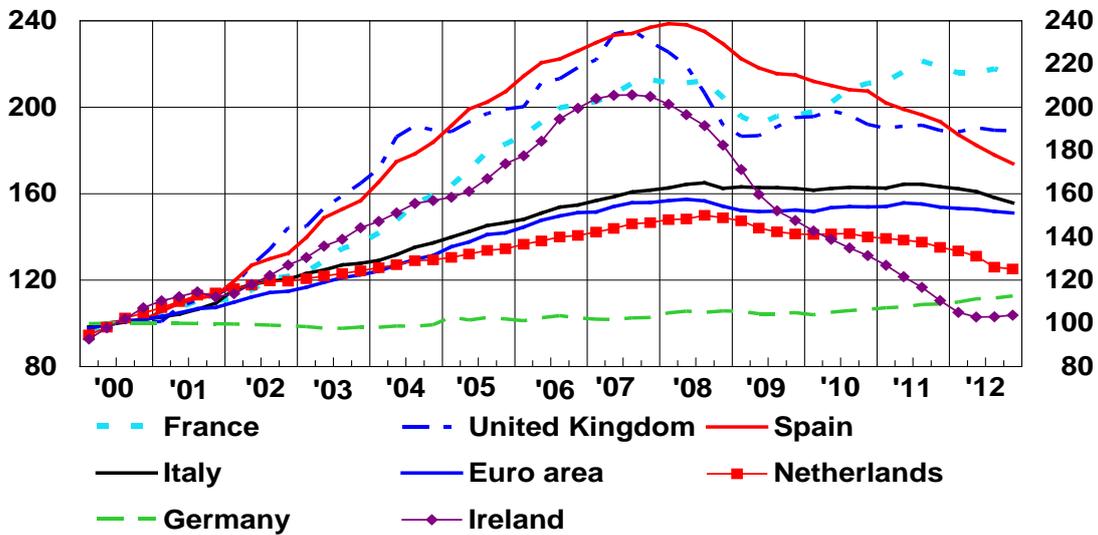
(A) Bank loans to firms in selected euro-area countries (per cent of GDP)



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



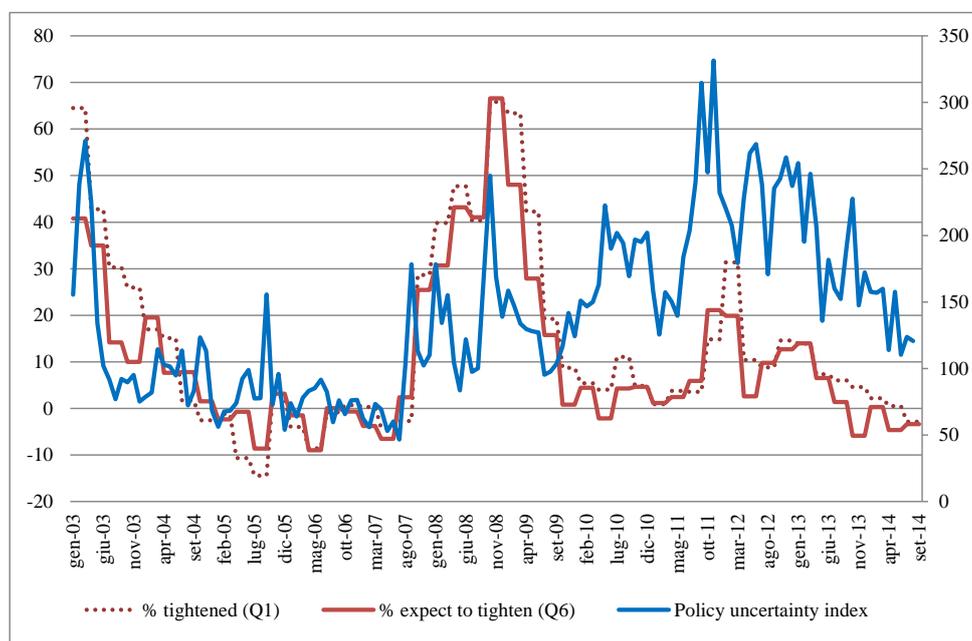
(C) House prices in selected European countries



Source: European Central Bank Statistical Data Warehouse and Eurostat.

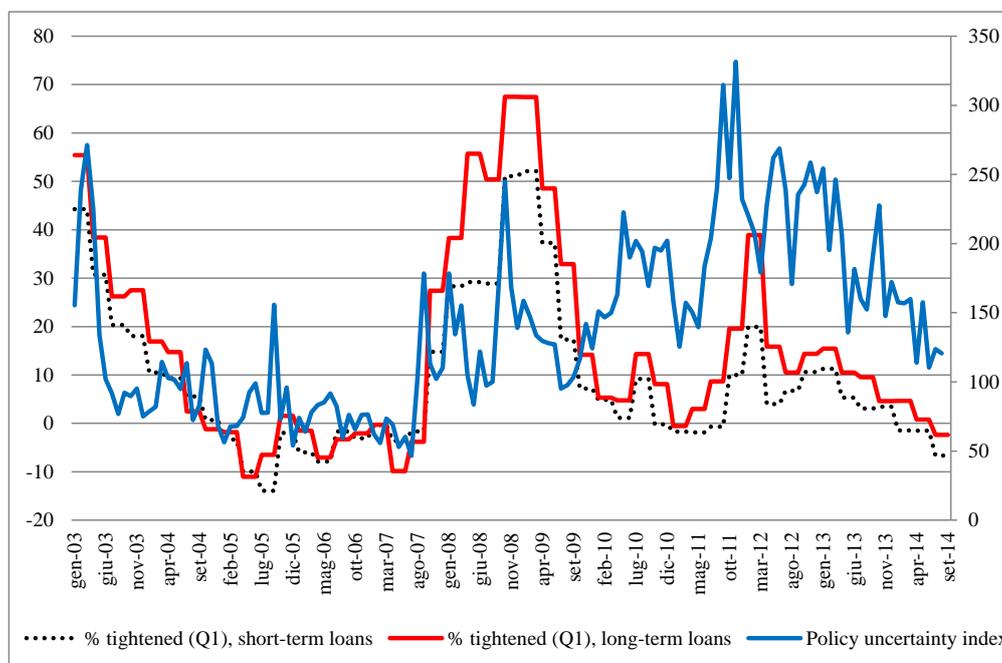
Figure 2: Policy uncertainty and credit conditions in the euro area

(A) Uncertainty and tightening in bank credit standards



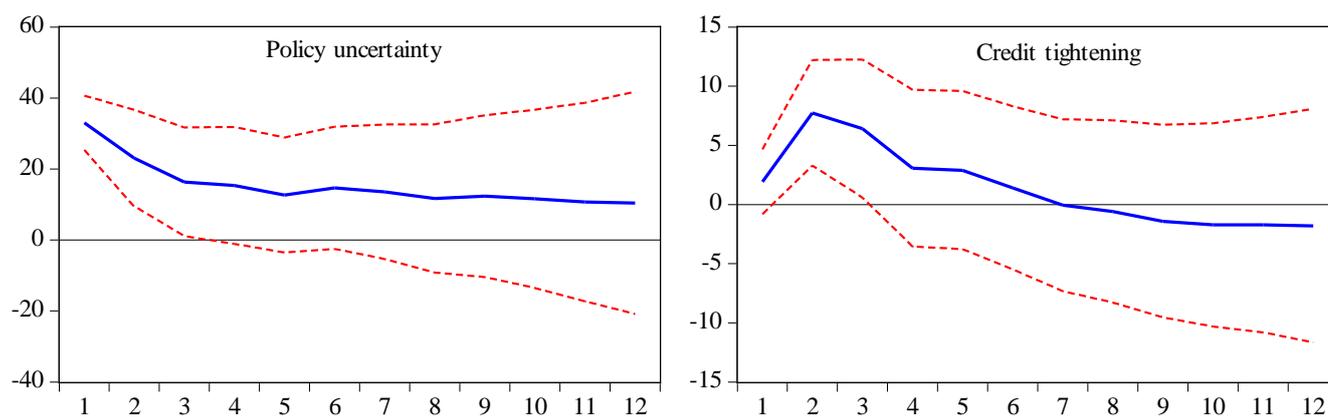
Note: The blue line is the indicator of policy uncertainty in the euro area computed by Baker *et al.* (2013) (right-hand scale). The brown line (dots) shows the fraction of Bank Lending Survey (BLS) banks that expect to tighten (tightened) credit standards over the next (past) three months. These are calculated using, respectively, Question 6 and Question 1 of the BLS. Source: Baker *et al.* (2013) and ECB Statistical Data Warehouse.

(B) Uncertainty and tightening in bank credit standards: short-term vs long-term loans



Note: The blue line is an indicator of policy uncertainty in the euro area (see above). Black dots show the weighted fraction of BLS banks that tightened credit standards for short-term loans over the past three months. The red line shows the same fraction for long-term loans. Source: Baker *et al.* (2013) and ECB Statistical Data Warehouse.

Figure 3: Impact of a policy uncertainty shock on the supply of bank credit.



Note: The chart shows the impact of a one-standard deviation shock to policy uncertainty on the supply of bank credit in the euro area. *Policy uncertainty* is the news-based European uncertainty index constructed by Baker *et al.* (2013). *Credit tightening* is the fraction of banks in the Bank Lending Survey that reported a tightening in credit standards over the previous three months. The estimate is based on a bivariate recursive VAR where uncertainty is ordered first. The estimation sample is 2004Q1–2014Q3. The red dashed lines show 95% simulated confidence bands.