

# Can Macroprudential Tools Ensure Financial Stability?

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## **1 The current consensus: monetary policy is in charge of price stability, while macroprudential policy is in charge of financial stability**

In 2019 more and more European countries, within or outside the eurozone, have implemented macroprudential measures to try to tame the credit cycle in their economy. According to data published by the European Systemic Risk Board (ESRB), by late November 2019, eleven countries had introduced Counter Cyclical Buffers (CCyB) that increased capital requirements for banks; twenty countries implemented a maximum Loan to Value Ratio (Max LTV) that limits the size of a mortgage loan; and 15 countries implemented other borrower based macroprudential measures that limit the capacity of households to borrow (Debt Service to Income – DSTI; Debt to Income – DTI; Loan to Income – LTI). At the same time, monetary policy remains accommodative: monetary policy rates are low, and central banks, notably the ECB, continue their asset purchase programs.

The consensus on which these policies are implemented rests on the idea that there is a clear separation between the goal of monetary and macroprudential policies. Monetary policy is in charge of price stability while macroprudential policy is in charge of financial stability. This consensus results from lessons of the 2008 – 2009 Global Financial Crisis (GFC) and departs from the pre-crisis consensus.

### **1.1 The pre-2008 consensus**

Before the GFC, most economists and central bankers agreed that the interest rate was too blunt a tool to deal with stock market bubbles. This was for example reflected in the academic work by Bernanke and Gertler (2001) as well as in several speeches by Bernanke when he was Governor at the Federal Reserve Bank (Bernanke (2002)). This consensus also had some roots in the “natural experiment” of the US

in 1929, when the stock market crash followed the successive increases in the federal funds rate in 1928<sup>1</sup>. Finally, and probably more importantly, before the GFC there was a general trust regarding the ability of financial markets to self-regulate.

This pre-2008 consensus does not imply that the central bank was not concerned with financial stability, but rather that the goal of financial stability had to be achieved with other tools than the policy rate (the then standard monetary policy tool), namely regulation, supervision and last resort lending (Bernanke, 2002). In 1996, when Alan Greenspan, then Chair of the US Federal Reserve, spoke of irrational exuberance to describe what was happening in the US financial markets, he was trying to warn investors about dot.com asset valuations that he believed were much too high. However, in accordance with the doctrine of the Federal Reserve and the consensus of the time, the course of monetary policy was unaffected, with the central bank remaining committed to its dual mandate: price stability and low unemployment. After the dot.com bubble burst in 2001, the Federal Reserve lowered its interest rate: the damage to the real economy was limited and the post-crash economic slowdown relatively short.

## **1.2 Empirical research after the 2008 financial crisis has changed the view regarding the causes of financial crises: credit cycles are potentially more damaging than stock market bubbles**

The financial crisis has spurred a long list of theoretical and empirical analyses that tried to challenge each part of the pre-crisis consensus. A first set of empirical work aims at identifying the specific characteristics of financial cycles that result in financial crises compared to other financial cycles. Schularik and Taylor (2012), Dell'Arricia and al. (2017) conclude that the threat to financial stability comes more from large credit expansions rather than from booming stock markets or property bubbles.

One focus of post-2008 empirical research has been on better describing past financial crises and developments in financial markets, indebtedness and the economy before, during and after the financial crises. An article by Schularick and Taylor (2012) focused on the outbreaks of financial crises in 14 economies that took place from 1870 to 2008. It provides a wealth of information about financial crises that simply cannot be summarized here. With respect to the role of monetary policy before and / or after financial booms, their main conclusions are: a) after the Second World War, central banks were more inclined to intervene following financial crises. As a result, the post-crisis periods were less often characterized by deflation and a

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<sup>1</sup> Whether these federal funds rate increases actually caused the stock market collapse is a related but slightly different question.

tightening of credit conditions in the economy, but (b) the post-war crises were nevertheless more costly in terms of activity and unemployment. They also note (c) that the pace of credit growth is a good predictor of the imminence of a financial crisis, and that the probability of a financial crisis is greater when debt levels are high. Finally, Schularik and Taylor conclude (d) that a rise in the price of financial assets in the pre-crisis years does not help to predict financial crises. Financial crises are therefore rather episodes of credit booms going bad than episodes of runaway financial markets alone, a hypothesis that had been prevalent before but which was difficult to validate empirically for developed countries due to the relative rarity of financial crises. Expanding on this work using long historical data, Jorda, Schularick, and Taylor (2013) showed that the severity of a crisis is linked to the expansion of credit in the pre-crisis period, which had already been shown by Cerra and Saxena (2008) and Reinhart and Rogoff (2009) on shorter samples.

These empirical studies, which are very useful for understanding the genesis and consequences of crises, also provide orders of magnitude for quantifying the macroeconomic gains associated with financial stability. Above all, they help to rethink the hierarchy of effects: it is the surge in credit to individuals (in particular household debt) that, in the past, has been the main trigger of financial crises. Spectacular as they are, record levels reached by the stock market indices and the bursting of the bubbles that sometimes follow them are far from being so devastating. The threat to financial stability comes more from large credit expansions than from bursting stock market or property bubbles.

### **1.3 Whose job is it to tame the credit cycle?**

If debt and credit cycles are dangerous for financial stability, the question is then: is it the job of monetary policy or that of macroprudential policy to tame credit cycles? To answer this question, we can hardly rely on real life experiments. Rather researchers have built models to simulate policy experiments. They then compare the net gain associated with “preventive” monetary policy actions – the increase in the policy interest rate above what is needed to maintain price stability reduces both the amplitude of the credit cycle and the probability of a burst at the cost of reducing economic activity today – to the net gain associated with “reactive” monetary policy consisting in lowering the policy interest rate only after the credit cycle has turned and hurt the economy. These types of experiments help answer the question whether monetary policy should be on the front line to ensure financial stability. It appears that across a large range of macroeconomic models<sup>2</sup> – from a 3-equation-new-

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<sup>2</sup> See for example Woodford (2012), Ajello et al. (2016), and Gourio et al. (2016), and Epaulard (2018) for a review.

keynesian model to more sophisticated DSGE<sup>3</sup> models – it is difficult to identify occurrences where a preventive monetary policy action is welfare improving.

In addition to these model simulations, an interesting episode of preventive monetary policy took place in Sweden in 2010 – 2011. Worried by the potential consequences of household debt and property price developments in Sweden, the Sveriges Riskbank increased its policy rate from 0.25% to 2% in a succession of 25 basis point hikes. At the time of these interest rate hikes, Swedish inflation was on target and did not require any monetary policy actions. The consequences of these hikes have been documented by Lars Svenson (2016): inflation plummeted, unemployment stayed at high levels compared to other developed economies, and neither property prices nor household debt decreased. In 2012, because of the damage to the real economy, the Sveriges Riskbank reversed its monetary policy and became one of the first central banks to implement negative interest rates.

All these studies and policy experiments led to the conviction that interest rate was not the right policy tool to deal with rampant credit cycles. But if standard monetary policy tool is not available to ensure financial stability, whose job is it to ensure financial stability? All the hopes are with macroprudential policies. And this is the new consensus: monetary policy is in charge of price stability while macroprudential policy is in charge of financial stability<sup>4</sup>.

## **2 How comfortable are we with this consensus?**

One of the appeals of macroprudential instruments is that they look sufficiently granular to target a given market, institution or behavior and deal with any glaring imbalances in specific markets. And this is precisely this granular characteristic that the monetary policy rate lacks. Still, we do not know that much about the actual ability of these tools to have a significant impact on specific market dynamics or behaviors.

### **2.1 Our knowledge regarding the efficiency of macroprudential policies to tame the credit cycle is still imperfect**

Central banks can rely on a large body of empirical results regarding the size of the impact of changes in policy rates on the economy. By contrast, we do not know much about the effectiveness of most macroprudential tools. There are many reasons for this ignorance. First of all, there are many different instruments: some of them

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<sup>3</sup> DSGE models, which stand for Dynamic Stochastic General Equilibrium models, are the now standard tools to analyze responses of economies to policy shocks.

<sup>4</sup> Collard, F., Dellas, H., Bida, B. and Loisel O. (2017) propose a macroeconomic model that illustrates this divide between monetary policy and macroprudential policy.

target banks (for example the CCBy) other target borrowers (Debt Service to Income – DSTI; Debt to Income – DTI; Loan to Income – LTI). In addition, data are scarce because these instruments were rarely used in the past. When we do have data, they mostly cover emerging economies, not developed economies. Finally, the empirical methodology to measure the implementation of these tools and their effectiveness needs to be improved. For example, most empirical papers are just counting the number of macroprudential measures in place (no matter their intensity) and/or the overall stance of the policy (tightening vs. loosening). Another concern about the results of these empirical papers is that they are showing correlations and not causalities.

### 2.1.1 Macroprudential instruments appear capable of reducing the debt cycle

Already before the outbreak of the GFC, Borio and Shim (2007) studied the implementation of prudential measures to limit credit growth and rising real estate prices across fifteen countries. Based on an event study, they found that these measures reduce credit growth and property prices rapidly after being introduced. On a broader panel of 49 developed and emerging economies observed from 1990 to 2011, Lim et al. (2011) identified 53 episodes where at least one macroprudential tool was used. Only nine countries in the sample did not use any macroprudential tool over the period. They concluded that a number of macroprudential instruments are effective at reducing the procyclicality of credit, regardless of the country's exchange rate regime or the size of its financial sector. This is the case of limits on debt relative either to the value of the property it finances, the Loan to Value Ratio (LTV), or to income, the Loan to Income Ratio (LTI), banks' reserve requirement ratio, counter-cyclical capital requirements and dynamic provisioning (provisions grow more than proportionally to assets). Using an even more extensive database in terms of both the number of countries (57) and years (from 1980 to 2011), Kuttner and Shim (2016) showed that the Debt Service to Income ratio (DSTI) is the most universally effective instrument for reducing the rise in mortgages. On the other hand, this tool does not seem to have any effect on the dynamics of real estate prices, which rather tend to respond to the taxation of real estate property. These results are consistent with what has been estimated for Hong Kong (He (2014)) and in emerging economies (Jacome and Mitra (2015)) where the use of LTV limits succeeded in containing household debt but had a limited impact on the rise in real estate prices, which are held down instead by higher transaction taxes.

Again, it is worth noting the coarse nature of these impact assessments, which do not shed much light on the appropriate mix of macroprudential instruments. In most impact studies, policies are represented by discrete variables (e.g. 0 if no action is taken, +1 if the macroprudential tool is introduced or its intensity increased, and -1 if the use of the macroprudential tool is relaxed, as is the case in the analysis of

Kuttner and Shim (2016), with the intensity of the macroprudential measure itself not being taken into account.

### 2.1.2 There are even fewer empirical results regarding the impact of macroprudential measures on the risks taken by banks

Claessens et al. (2013) analysed the use of macroprudential policies aimed at reducing vulnerabilities in banks. From a sample of 2,300 banks observed over the period 2000-2010, they concluded that debt limits (LTV and DSTI) are effective in reducing the banks' debt ratio and the growth of their debt in boom periods. Once again, the variable representing the use of the macroprudential tool is binary (0 or 1) and does not take into account the intensity with which the macroprudential policy is applied.

### 2.1.3 The cost of macroprudential policies

It is one thing to show that macroprudential tools do have an impact on the behaviour they target, another is to evaluate whether or not these measures have spillovers that are costly to the rest of the economy. Richter et al. (2019) try to quantify the effects of changes in maximum LTV ratios on output and inflation. They show that there are, indeed, some spillovers from these macroprudential measures. According to their empirical results, a 10-point decrease in the maximum LTV ratio (a tightening of the macroprudential policy) generates a 1.1% loss in output, more or less the same impact as a 25 basis point increase in the monetary policy rate.

## 2.2 We are learning fast

### 2.2.1 More data, better methodologies

As more and more European countries are implementing macroprudential measures, more data is becoming available for empirical research to assess their effectiveness. Meanwhile, policy makers are in the difficult situation where they have to implement measures without clear knowledge regarding their impact. At the same time, empirical methodologies are refined. For example, Richter and al. (2019) are able to use the intensity of the macroprudential policy in place and not only its pace. Also, they try to come up with a strategy to confirm the causal relationship from maximum LTV ratios to output losses and property prices.

## 2.2.2 The long list of questions waiting for answers

To be comfortable with the current consensus – that macroprudential policies can achieve financial stability and monetary policy keeps its narrow objective of price stability – we need to have answers to a quite long list of questions.

First of all, we need to know better what type of credit booms call for a macroprudential response. As shown by Asriyan et al. (2019), not all credit booms are alike and those that are relying on extensive use of collateral are more likely to shake financial stability than those that are fuelled by productivity shocks. Only the credit booms of the first type are calling for a macroprudential response.

Secondly, we need to know whether macroprudential measures once in place gradually lose their effectiveness. After the introduction of a macroprudential measure economic agents might (will) be tempted to find ways to circumvent them either by regulatory trade-offs or by creative financial engineering (Aiyar et al., 2012; Jeanne and Korinek, 2014), especially when policies are not coordinated at the international level. This is the argument often made by advocates of the use of monetary policy rather than macroprudential tools for ensuring financial stability. For example, Borio and Drehmann (2009), Cecchetti and Kohler (2012), and Stein (2014) argue that since the interest rate is a universal price, it hits regulated sectors and non-regulated sectors alike (including shadow banking).

Thirdly, the question of coordination of macroprudential policies within the euro area needs to be examined. On the one hand, the granularity of macroprudential tools make them particularly suitable to deal with local conditions – to the point where they are sometimes implemented with different intensity within a given country. That is a reason not to coordinate within the euro area. However, in the case of a common situation within the euro area, research shows that there would be benefits from coordinated actions (Rubio and Carraso-Gallego (2016)) while others conclude there is no need for it (Poutineau and Vermandel (2017)).

Finally, one limitation of the use of macroprudential tools lies in the difficulty in using them. Direct intervention in specific markets can have a high political cost, especially when it affects specific interest groups. The limits on household debt (limits on LTV ratios, DTIs or DSTIs) that do appear effective when they are used are also largely unpopular, especially as they are likely to affect the poorest households more. This question should be addressed by economists.

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