



Bubbles and macroprudential supervision

Remarks by Jean-Pierre LANDAU
Deputy Governor of the Banque de France¹

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Looking at the future of financial regulation is specially challenging in the current juncture. Right in the midst of the crisis, we cannot be sure that we fully understand its ultimate causes, its roots, and its dynamics. Furthermore, we do not want to be fighting the last war. We need a vision on how the financial system will evolve in the future, something very difficult to figure out right now. And yet, there is a strong political demand for orientations and measures to fix the problems and make sure they never happen again. This demand is fully legitimate, considering the social costs that the crisis is imposing on our societies, and more specifically, the financial burden taken on by tax payers.

I have chosen to present some remarks on bubbles and macroprudential supervision. They should be seen more as a work program than a full-fledged answer to the many questions raised for the future. I will deal with three issues: what are we trying to achieve? What are the main challenges? Which are the proper instruments?

What are we trying to achieve?

Here, we have two certainties, and many questions. First, we know for sure that macroprudential supervision is preemptive by nature. It aims to avoid crises because crises are costly. Second, a macro approach to financial supervision must encompass the whole financial system as opposed to any specific or individual institution.

Beyond that, things become more complicated.

Macrosupervision is often assimilated to preventing systemic risk. These are closely related, but not identical concepts. Systemic risk refers to the internal dynamics of the financial system; whereas, macroprudential supervision is mainly concerned with its interaction with the real economy. Occurrence of systemic risk can

¹ I am indebted to Benoit Mojon for many useful suggestions and remarks. All remaining mistakes are mine. Opinions expressed are purely personal and do not necessarily reflect the positions of the Banque de France.

harm the financial system; but not always, and not necessarily, the real economy. On the other hand, there are cases where a (temporarily) healthy system, with no obvious systemic problems, may behave in a way which in the long run, is very detrimental to the real economy: a typical example being the expansion of balance sheets and credit which, by itself, does not threaten the short term resilience of the system but is potentially damaging. Conversely, deleveraging from excessive levels of debt may be good from a systemic point of view, but, if done in abrupt manner, could create enormous pressures on the real side. So, while a healthy and resilient system may be a necessary condition, it is not clear that it is a sufficient one to achieve appropriate macroprudential objectives.

Should macroprudential supervision aim at avoiding or dampening volatility in the financial system? Financial stability is not an end in itself. It only helps if it is conducive to better macroeconomic performance. Volatility may be driven by fundamentals. Sharp movements in asset prices may help the financial system to serve as a cushion, an "absorber" for exogenous economic shocks. This is welfare improving since it avoids, or mitigates, adjustment in more rigid goods of labor markets.

By the same token, not all procyclicality is bad. It all depends on the causal link: is the financial system the origin or the amplifier of destabilizing dynamics? Or does it simply react to cyclical evolutions in the real economy? We should only be concerned by "intrinsic procyclicality", which is created *inside* and *by* the financial system. Finally, cyclicality in the real economy can be beneficial to long term growth as it is one mechanism through which "creative destruction" can take place in the productive system.

Real and significant damages occur if and when financial imbalances are allowed to build for a long time with two consequences: first asset prices significantly deviate from their fundamental value, which creates distortions in the allocation of resources; and second, those imbalances unwind suddenly and abruptly, triggering major disruptions in growth and the economic cycle. This is what is happening right now. And this closely resembles the definition of a bubble.

This clearly points to one possible mandate for macroprudential supervision that, it were feasible, would be both pragmatic and legitimate: to avoid bubbles. Bubbles are not always triggered within the financial system. They may have roots in productivity shocks, for instance. But they cannot develop unless permissive financial conditions prevail. There are good reasons to prevent bubbles. They impose significant costs on the real economy. They may place an undue burden on monetary policy. They raise important questions of fairness in the distribution of income.

Such a simple definition of the objective of macroprudential supervision is quite attractive. However, simplicity comes at a price. Avoiding bubbles present enormous challenges, to which I turn now.

The challenges of macroprudential supervision

Analytical challenges

The first – and most important – challenge is analytical.

Bubbles are difficult to detect. Asset price boom-bust cycles become clearly apparent only after the event. Moreover there is little regularity in the business cycle, which makes it difficult to identify with certainty long lasting deviations of asset prices from fundamentals. Looking at the path of asset prices, how do we know ex ante if we are confronted with an inflexion in the trend, a one-step adjustment in equilibrium levels, or the start of a bubble? There is no simple or mechanical answer to that question. This is one of the reasons why "early warning" mechanisms have not really worked.

While bubbles are hard to detect, we nevertheless know from the repetition of financial crises through history- including the current crisis- that the economy is always subject to the risk of a new bubble. Given this risk, we ought to reflect on the features of financial systems that may create bubbles and allow them to develop to proportions that threaten economic welfare.

We know a few things about the procyclical characteristics of the financial system. Our accounting and prudential regimes may have increased procyclicality in recent years. In a mark-to-market environment, asset prices movements quickly translate into changes in the capital base of financial institutions. This, in turn, triggers additional demand for assets and a further increase in their prices. This kind of "inverted demand curve"; where demand increases with prices, may create the conditions for a bubble. But it does not have to.

Strictly speaking, procyclicality refers to bigger amplitudes of fluctuations around a trend. But a bubble may induce deviations that are so long lasting that we start wondering about the trend itself. Whether wider fluctuations in prices will lead to lasting deviations is uncertain. We have good insights on the dynamics of a bubble, once it develops. But we do not know much about what actually starts a bubble, and this is a crucial point.

So there needs to be a rule guiding macroprudential decisions knowing that we have to live with this uncertainty. Actually, such a rule may exist, but implicitly. The prudential apparatus has worked in the past on the presumption that all movements in asset prices were based on fundamentals. The burden of the proof was on those who thought that something was going wrong. And, of course, it is impossible to prove the existence of a bubble until it is too late. And, at least in the initial phase of a bubble, there is no lack of rational explanations for observed movements in asset prices.

It may be useful, in a macroprudential perspective, to consider some rebalancing in the burden of the proof. Significant and lasting departures from past levels or trends in key asset prices, risk premia or credit aggregates should systematically trigger a macroprudential review, with the implicit assumption that a bubble may be occurring unless proved otherwise. This seems to me justified when looking at the current social costs of previous hesitation. This is also a rational course of action. Bubbles develop because investors have an incentive to ignore the "tail risk" that the bubble may burst. Where does this incentive come from? Bubbles are mostly financed by credit, which makes it possible for investors to shift most of the risk to lenders, while keeping most of the profits for themselves (especially when those profits are booked, and distributed, in real time). This asymmetry in incentives is extremely difficult to eliminate ex ante. To make sure that bubbles never happen, one may need to impose permanently significant constraints on the development of credit or leverage, which would prove penalizing in normal times. A better – and less costly – approach would be, for supervisors, to closely monitor the financial system and preserve their possibility to intervene by establishing the kind of presumption I have just mentioned.

Two approaches to macroprudential supervision

As in many matters of public policy, there is a choice between rules and discretion in implementing macrofinancial supervision. There are basically two possibilities, which are not necessarily mutually exclusive.

First, (the rule based approach), macrosupervision can be built through automatic stabilizers which would constrain institutions in their behaviour, regardless of their own individual situations. Examples would include contra cyclical capital requirements, for instance, as well as dynamic provisioning. As I will develop later, stabilizers should be constructed so as to act directly on the incentive to take risk and the rewards provided by risk taking.

A second approach would consist on discretionary, "top down" interventions from macro authorities. Prudential authorities would step in and impose (or relax) constraints whenever they come to the conclusion that dangerous imbalances are building up (or unwinding).

We probably cannot dispense of this second approach. The difficulty to date cycles makes it dangerous to rely purely on automatic mechanisms, which cannot be precisely calibrated. Financial cycles, in particular, are driven by changes in risk appetite which are impossible to predict. Actually, one essential objective of macroprudential supervision may be to "regulate" (not in the legal sense, but economically) the aggregate level of risk appetite inside the financial system. This unavoidably involves some degree of discretionary judgement and intervention.

Combining the two components of macrosupervision (systemic and macroeconomic) with the two approaches (automatic and discretionary) produces an interesting classification, which is presented in the table below:

Mechanisms \ Purpose	Systemic risk	Adjustment to macroconditions
Automatic	<ul style="list-style-type: none"> ➤ buffers (capital and/or liquidity) ➤ Loan to Value ratios ➤ accounting framework 	<ul style="list-style-type: none"> ➤ time varying capital ratios ➤ dynamic provisioning
Discretionary	<ul style="list-style-type: none"> ➤ stress tests ➤ pillar II of Basel 2 	<ul style="list-style-type: none"> ➤ discretionary adjustments to capital ratios, provisions or margin requirements

Institutional challenges

The discretionary approach to macrosupervision raises important institutional issues.

First, who makes the judgment? And should that body be independent or not? There is a good case for putting Central Banks in charge. If one takes an historical perspective, it is striking that the mandates and missions of Central Banks have taken major turns following financial crises. Central Banks have an informational advantage (or at least no disadvantage) in judging the cyclical position. They have an incentive to act, because macroprudential supervision alleviates the burden on monetary policy, and because they need monetary transmission mechanisms to work. So they clearly should have a pivotal role in the process. But they are not alone in caring about financial stability. And experience has shown that price stability – their primary mandate – does not always coincide with financial stability and the avoidance of bubbles.

Furthermore, in an integrated financial system, judgments have to be made on a worldwide basis. Another alternative is the IMF. But the IMF is mostly controlled by governments and decisions are made according to voting shares. Implementing macrosupervision will involve delicate decisions (like strengthening lending standards in good times) to which governments may not spontaneously agree. A fully independent body would certainly be necessary.

Second, how is that judgment passed on to regulators and supervisors and translated into supervisory decisions? This is totally uncharted territory. I would just mention it as a matter for future research in the governance of the financial system.

The instruments

The most important instrument in our current toolkit are capital requirements put on some financial intermediaries.

Those capital requirements perform a dual function. They act as compulsory buffers imposed on banks and their shareholders. They also have an incentive function: to prevent shareholders from taking too much risk with deposits. It has proven more and more difficult to reconcile those two objectives. In theory it could be done, just as taxes can be used both to raise revenues and allocate resources. But, in practice, they both may be lost into an increasingly complex system.

In addition, capital requirements may not be binding when they need to. If assets market are booming and perceived returns are high, banks will always find the necessary capital. Conversely, capital dries up during downturns, when it is most necessary. Introducing counter cyclical capital requirements will certainly help. But we may not have looked enough into the interrelated dynamics of stock and credit markets; or, put differently, on how capital flows in and out of the financial sector during different phases of the economic cycle and what are the consequences on credit flows.

Finally, tailoring capital requirements to the definition of economic capital by banks themselves strengthens the incentive function. But from a macroprudential perspective, by replicating closely private risk management methods and metrics, this encourages uniformity in behaviour, which, by itself, is a source of instability.

It is becoming increasingly clear, it seems to me, that if we want prudential supervision to effectively preempt the build up of imbalances, it has to act more directly on individual and collective incentives. This should push us to look more closely at the "accounting-compensation" nexus. When looking at revenues drawn from a financial investment, it is generally impossible to distinguish excess return from additional risk taking. Ignorance of tail risk fits perfectly in this framework. This points to a possible solution: regulatory systems should force the pricing of risk in all its dimensions, including liquidity risk. Again, there is a clear analogy with tax theory: "internalizing" the risk eliminates market failures. The conceptual challenges in quantifying, for instance, liquidity risk, are enormous. But we live in a world of second best, and even very approximate measures would do better than nothing at all.

I will stop here, knowing, once again, that I have raised more questions than I have provided answers. But looking at what is happening in this very moment, in our economies, it is necessary to think "out of the box" and look at all possibilities. Those in charge of macroeconomic policies are doing just that. Those responsible for financial regulation should not hesitate to emulate them, at least partially.

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