

# The Mayekawa Lecture: Whither Bank Regulation; Current Debates and Challenges

by Raghuram G. Rajan

## I. Introduction

I would like to express my thanks to Governor Kuroda for inviting me to give the Mayekawa Lecture. I am greatly honored to be delivering a lecture in his name, given the confluence of good practice and research that he focused on. Let me talk about bank regulation from the larger perspective of central banks. How does bank regulation relate to some of the other activities that central banks do? How much have we done to deal with the problems unearthed by the Global Financial Crisis (GFC)? And how much more do we need to do not just in bank regulation but in financial regulation more generally?

One can argue that, since the GFC, there have been a number of trends in regulation. The first and most obvious one is that we have focused a lot on credit risk and solvency, and since the GFC, we have also started incorporating liquidity into our discussion, not just of financial institutions but also of the financial system. It is not that we did not think about the system before, but it has become much more central because the route from illiquidity to insolvency became much more pronounced during the GFC.

Second, we have gone from institutional regulations to incorporating systemic regulations as well. One example is that, if you remember early on in the GFC, Ben S. Bernanke said that losses of subprime mortgages were only about \$100 billion. The final loss was a little bigger than that eventually, but the problem was that it infected the system on the whole, and it created problems through every part of the system. We have gone from focusing on institutional concerns to looking at the system more broadly. We understand that the system can be polluted by specific institutions and instruments.

Third, we have gone from micro-prudential to also thinking about the role of macro-prudential regulation. How do we think about broad, economy-wide, or across-institutions regulation? And what role does monetary policy play, and does monetary policy have any supportive role in helping financial regulation? This is an area of considerable debate and controversy.

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At the end of this lecture, I will summarize what we have done and what we need to do going forward. I think that, in some sense, our efforts have been very good on the banking side. We have made it much less likely that banks will be at the center of the next crisis. At the same time, as the system is like a balloon, regulating one side very well, or pressing one side of the balloon, causes a bulge on some other side. So where is it bulging out? I completely agree with what Governor Kuroda mentioned in his opening remarks, which is that it is the shadow financial system where some of these risks have migrated. We have to think about how we can apply more uniform pressure and regulate across the system, so that we do not have bulges in the balloon.

The other important place where we need to make more progress is the links among monetary policy, international capital flows, and domestic financial fragility. It is an issue that we absolutely need to make more progress on, not only domestically, with respect to the effects of monetary policy on rising financial fragility, but also, internationally, concerning the effects of core countries' monetary policies on the rest of the system. These are areas where we need more work.

In the spirit of the Mayekawa Lecture, I will try to relate this lecture to academic work that has been done and to talk a little bit about its implications for the policy discussion. I want to focus on six topics. First, why do we regulate banks? Or, what is special about banks? This is an old question. I will outline the emerging answers. Second, in what ways do we regulate banks? I will talk a little more about some of things that have happened since the GFC. Third, I will talk a little bit about regulatory incentives. This, of course, includes asking the question: who regulates the regulator? Fourth, should monetary policy be sensitive to financial stability? There are some people who will bang on the table and say, "No, no, no, it cannot be sensitive." There are others who say, "If monetary policy is not sensitive, you will have recurrence of crises." I will talk a little bit about the arguments for and against. Fifth, can macro-prudential regulation solve some of the concerns associated with the monetary policy stance? Can we get separation again between regulation and monetary policy through macro-prudential regulation? Lastly, should we actually try and harmonize regulatory requirements at Basel as we try to do? Or, should we allow each country to evolve its own approach within a broader Basel understanding?

## II. Why Regulate Banks?

Why regulate banks? I will go through this question in a little bit of detail. The first and most obvious reason is that bank structure makes them fragile. Therefore, the question is: why do banks have the structure they have? There are a number of answers the research suggests.

The second reason why banks should be regulated is that they are so important. Because they are at the center of the payment system and of providing liquidity, there are a variety of reasons why there can be externalities of banks' failing.

A third set of reasons is that while banks are fragile and important—the first two reasons—, they are especially prone to do things which normal commercial firms do not do. There are aberrations in banks which also have to be guarded against.

The fourth reason is that the private sector can be allowed to function on its own, but the authorities sometimes have powers that the private sector does not have, and again, because of banks' importance, the power of authorities to intervene can be very valuable in preserving the system.

The final argument for why banks should be regulated is that, because they know authorities are going to intervene, banks have an incentive to take distortionary actions. In a sense, the fact of intervention itself prompts regulation. You want to prevent the banks from taking advantage of betting that the authorities will intervene.

Let me just walk through these five reasons fairly quickly.

### **A. Structure Makes Them Fragile**

The first reason to regulate banks is that their structure makes them fragile. The canonical paper here is Diamond and Dybvig (1983). Think of an economy where, if you produce over the long term, you make high returns. If you are forced to cut short that production over the short term, the returns will be relatively low. Now in that kind of economy, a bank can be a useful structure, because it allows people to get some insurance against the fact that they may need to consume in the short term and they are not saddled with the very low returns that occur if they need to consume in the short term. Essentially, the bank shares risks among individuals. It allows the people who come early on to get a little more than the short-term production possibilities of the economy, in return for which, they give up some of the long-run returns that they could get if they had been patient and stayed over the long run. The beauty of the Diamond-Dybvig model is that it is a very simple model, and it tells you why banks are fragile. Because if a small number of people come for their money early on, a few of the long-term assets are liquidated, and the long-run investors are also happily waiting, because they get a higher return. But if too many people come early on, you are essentially giving too much to the short-run investors relative to the economy's production possibility, and as a result, the bank experiences a run; that is, everybody runs for their money. That is sort of the idea behind the Diamond-Dybvig model, and it captures the notions that banks are in fact fragile but part of the fragility comes from the fact that banks accept or issue demand deposits in order to produce their basic function of risk-sharing.

I will move quickly to another paper, Diamond and Rajan (2001). It takes a somewhat related but slightly different view of demand deposits. The argument is that, even in a world where you do not have risk-sharing, through issuing demand deposits, relationship bankers can pay out much more than the value of assets in the case of direct finance by their depositors. Essentially, part of the rationale for demand deposits is that, through the demandable nature of the claim, the payment can be much higher.

A third group of papers showing positive effects of debt issued by banks is a series of papers by Gorton and Pennacchi (1990) and Dang, Gorton, and Holmström (2015), in which, again, banks issue money like liabilities. The virtues of demandable claims are that they are very senior, and there are not a lot of concerns about how much their true value will be because people are fairly certain about their true value, as long as their issuer bank is not anywhere near insolvency. As a result, those are very liquid claims; people are willing to hold. Making the claim debt-like is very important for it

to be very liquid. Why is this important? It is important because it tells you that banks' structure is not a bug, but it is a feature of the system. It is something that is essential to what banks do. Therefore, people who argue, and there are lots of people who do this after a crisis, "Let's replace a bank with an equity financed institution without any demandable claims!" are basically negating the very function of a bank itself. You have to balance an all-equity financed institution against the loss of fundamental activities of a bank.

Let me therefore say that the fragility emerges from these demandable claims in at least three ways. The first way is sunspot panics. It is a historical view that people would see other people queuing up in front of their bank, and they would say, "What's going on? I don't know. Let me join that queue." The movie *It's a Wonderful Life* is a classic example of this. They solved the problem by paying out everybody who came until people were satisfied and left their money in. My point of view is that these sunspot panics do not really happen that much. It is a nice idea in theory, but in general what really happens in many bank runs is that the informed depositors, or big depositors, start running for their money; these are typically hedge funds with big transaction accounts. This is when the inter-bank run starts. That is when banks collapse in the modern world. It is not so much sunspot panics but actual concerns about banks' solvency which precipitate this bank failure.

Second, the likelihood that solvency-related runs emerge is larger for a highly-leveraged bank. This is because there is very little buffer for the bank to survive a shock before people start worrying about its insolvency. As soon as people worry about their banks' solvency, they have an incentive to run and take their money out of the banks.

The third reason why you could get a bank run is an aggregate liquidity shortage. Since there are fairly few buyers for a bank's assets, the bank dumps them in the short run, even though the fundamental value of these assets may be quite high in the long run. For example, we saw this with mortgage-backed securities in the GFC. In the depths of the crisis, there were very few people who understood the true value of those securities and had the ability to go into the details of what backed them. BlackRock and maybe a couple of others could do that, but not too many. As a result, because there were very few buyers relative to the mass of the securities that had to be unloaded, they were traded at severe fire sale prices. That is what we call an aggregate liquidity shortage. The experts who can buy (that is, entities like BlackRock) do not have money to buy all that is being unloaded. The stuff unloaded is traded at a huge discount that creates an enormous possibility that you are illiquid in the short run. This also means that you could be insolvent in the short run even if you are solvent over the long run.

## **B. Externalities / Utility**

The second reason for regulating banks is that there are externalities associated with banks' failure. The classic work here is Friedman and Schwartz (1963). They argued that the Great Depression was caused by a collapse of banks, therefore by a collapse of monetary aggregates, and that, because there was a massive shrinkage in the money supply, activity collapsed. One could think at a very narrow level that a collapse of the payment system would lead to a collapse in activity.

Bernanke (1983) went further to say something like, “No, it’s not just the collapse of the payment system, but it’s a collapse in non-monetary functions.” Banks make loans given private information gathered themselves on borrowers. What happens to these lending relationships when a bank collapses? The lending relationships essentially evaporate. You cannot resume them at short notice. When a bank fails, there is nothing to take its place, and a lot of its borrowers who used to get credit no longer get it because the bank has collapsed. Bernanke talked about credit being what collapsed, not just monetary aggregates. A lot of work since then has tried to establish that, in fact, there is a lot of soft information within banks, and that their borrowers tend to become distresses or fail when their counterpart institution fails.

The third aspect of the externalities is fire sales. In a fire sale, assets are sold for less than their full value. When an entity creates assets, it does not fully internalize the consequence of creating these assets which might be sold in a fire sale. That is, people do not fully internalize the fact that they will be selling their assets into the common pool of liquidity and essentially be making use of that common pool. It is like making use of a public good. When you are making use of it, you do not internalize the fact that somebody has to produce the public good and you are relying on it. There is a charge on you in selling some of your illiquid assets into the common pool of liquidity; that is, when you start selling your illiquid assets, you need to drop the price for them. That comes back to hit you through a potential fall in your solvency. There are papers which talk about how you can get a systemic collapse because up front, you do not internalize how much of these illiquid assets you are creating and relying on the common pool. These papers include Shleifer and Vishny (1992), Allen and Gale (2000), and Diamond and Rajan (2005).

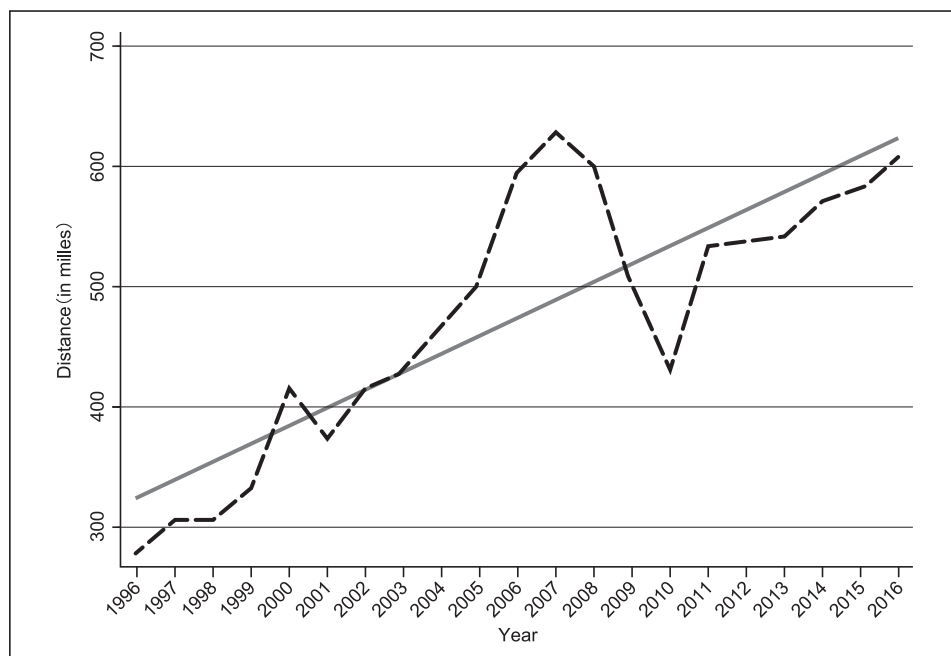
### **C. Utility plus Banking-specific Aberrations**

The third reason is that there are bank-specific problems which can exacerbate problems, particularly because banks are important in ways described earlier. Geanakoplos (2010) has this view: borrowers in an economy can be overly optimistic and can leverage up to a substantial extent; and when it turns out to be overoptimistic, their leverage can create problems in the economy. To the extent that it is banks that have lent to them, the banks are implicated in leverage cycles.

Another more bank-related idea is that banks have the ability to hide the true state of the world. They have the ability to evergreen (Rajan [1994]). It is quite possible that banks, when they are competing with each other, can essentially lend to keep the loan going so that nobody really knows what the true state is. But when every bank knows that every other bank is doing it, nobody wants to confess that it actually has a problem of the loans going bad, and as a result you get over-lending over a period of time just to mask the previous over-lending. Eventually when the regulator gets in and starts cleaning up, it turns out that the true state is much worse than you thought because there has been evergreening going on.

To just show you the role of inter-bank competition, here are two figures from Granja, Leuz, and Rajan (2018). These are consistent with the famous statement made by Chuck Prince of Citigroup. When he was asked a question about whether lending was getting excessive a few weeks before the GFC, he said, “As long as the music is

**Figure 1 Average Lending Distance between Borrowers and Their Nearest Branches**



Source: Granja, Leuz, and Rajan (2018)

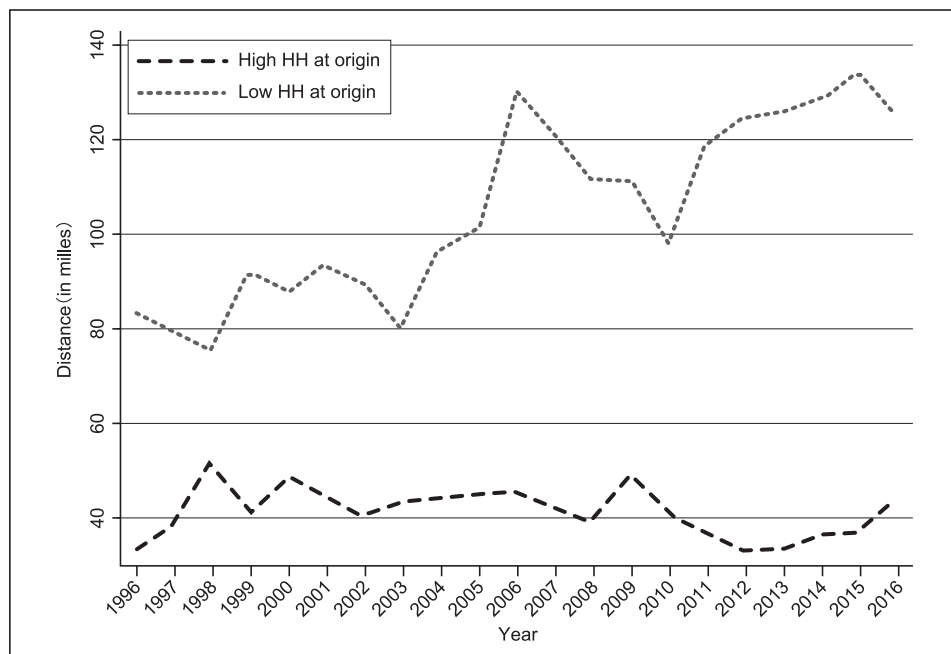
playing, you've got to get up and dance. We're still dancing." This gives a sense of the way in which inter-bank competition pushes banks.

Figure 1 shows the average distance between borrowers and lending banks, taken from Granja, Leuz, and Rajan (2018). Typically, over time, because of advances in technology, the distance has been expanding, even in the last number of years. But what is interesting is, during the run-up to the GFC, the distance expanded substantially. So, in a sense, banks were taking more risks than allowed by the state of the system. Now, when you are lending at a distance, you do not know much about your borrowers, and you may not have the technology to monitor them carefully, etc. However, over time the technologies are improving, and you can exceed the capacity of your technology. What this says is that, in the run-up to the GFC, meaning to 2008, the distance increased considerably only to be cut back substantially in its aftermath.

Let me show you Figure 2, which is even more interesting. The dashed line is the lending distance for branches operating in areas which were very concentrated in banking; that is, as very few banks operate there, it is quite profitable to do banking. The dotted line is the lending distance for banks operating in very competitive areas. The run-up in the distance was more pronounced in the competitive areas. This is a broader point that I am trying to make: when banks face severe inter-bank competition, there is also an incentive for them to take more risks, eventually creating some problems for the system.

Finally, banks are also susceptible to malfeasance and fraud. One interesting paper is a paper by Piskorski, Seru, and Witkin (2015). They show that many banks reporting

**Figure 2 Average Lending Distance Based on the Degree of Competition at Origin Branch**



Source: Granja, Leuz, and Rajan (2018)

securitizations did not say whether in fact there were additional loans made to their borrowers. Usually, a borrower has only one loan, and so the remainder is equity that the borrower has. It turned out that a fair number of borrowers whose loans were securitized received second loans that had been hidden, and so the amount of equity they had was significantly lower. This fact was not disclosed before the GFC, suggesting that banks do have an incentive to misrepresent despite the reputational penalties associated with it.

#### **D. Authorities' Powers That Banks Do Not Have**

The fourth reason why banks should be regulated is that central banks have the ability to expand their balance sheets, substituting liquid assets for illiquid ones. This is a classic function of central banks. From the dawn of history, that is what they have been doing. They substitute means of payment for more illiquid assets. They did this during the GFC too. Another power is that the governments have taxation capacity. So if the system runs out of equity, essentially the government can inject more equity into the system based on its ability to tax household wealth that is inaccessible and cannot be raised through finance. The fact that authorities have powers which commercial banks do not have is a reason for regulation.

#### **E. Authorities' Intervention**

The last reason for bank regulation arises from the fact that authorities intervene in banking business. A classic example is deposit insurance. The central bank put is



another emerging idea, whereby if the market falls considerably or if banks get into trouble, the central bank will come in and pick up the pieces. This is a doctrine that came to be known as the Greenspan Doctrine. If you know that the central bank is going to come to the rescue, the temptation for you is to take on more leverage, to take on more illiquid assets, or to become bigger, namely “too big to fail.” If the central bank cannot avoid intervening when the financial system gets into trouble, it will be necessary to keep the system from getting into trouble.

### III. What Forms Does Micro-Prudential Regulation Take?

#### A. Capital Requirements

The most important post-crisis form of micro-prudential regulation has been capital. Regulators have asked banks to hold significantly greater capital than they used to have. I think that this is absolutely right. We need the banking system to be much better capitalized. We also need to ask how this capital works, or how it makes the banking system safer. There are at least three hypotheses for this.

The first possibility is that equity governance is fantastic. Because equity holders have claims which lose a lot in value if their bank does badly, they have incentive to monitor their bank and make sure that it does well.

Unfortunately, equity governance does not bear very well with what happened during the GFC. Think about Lehman Brothers. Its board was generally ineffective right to the crisis. In fact, what shut Lehman Brothers down was not any action taken by the board in trying to reduce its risk-taking. Indeed, it is not even clear that they understood how much risk Lehman Brothers was taking. It was essentially an inter-bank run which shut Lehman Brothers down. Interestingly, Lehman Brothers got shut down at approximately the point it became insolvent. According to estimates by Ball (2018), Lehman Brothers had \$3 billion worth of equity when a run on Lehman Brothers started. This suggests that debt governance did what it was supposed to do, shut the firm down when it was close to insolvency, and that equity governance did very little in keeping the firm from getting there. So, there is a very real question to ask. Should we improve the incentives of equity holders to take action, and why did they not take action? You could believe that equity governance is better than debt governance, but it turns out that at least the casual evidence does not seem to suggest that.

The second reason for relying on capital is budget constraint. The regulator is essentially saying, “I’m going to monitor how much you allocate in terms of capital to various activities, and once you exhaust your equity capital, you can’t take more risks.” To some extent, this works reasonably well. It is also the basis of many banks’ raising their equity when they need to take more risks. You have to expand your budget by raising more capital.

The third reason for relying on capital is that it is a loss-absorbing buffer. When you have a fair amount of equity, small shocks do not take your bank down, the bank can adsorb larger shocks.

I think the second and third reasons are somewhat more plausible. There is a big debate in academia right now. Should we ask banks to hold significantly more capital?



On the side of the people saying yes, Admati and Hellwig (2013) argue that more capital is the way to go. Of course the papers we talked about earlier would suggest that there is a trade-off. If you require a bank to hold more capital, you may actually increase the bank's cost of capital and reduce the bank's activities. This is the cost. You have to opt for a balance: there is an optimal point which is not 100%, and is not 0%, but is somewhere in between. I think this debate will continue but we need more empirical work to say what the optimal level of capital balancing the risks versus the benefits is.

### **B. Liquidity**

We also have moved more toward regulating institutional liquidity. Let me not dwell on this other than saying that Kashyap, Tsomocos, and Vardoulakis (2017) raise a relevant question. We have two measures, a net stable funding ratio and a liquidity coverage ratio. The former is working on the funding side while the latter is working on the asset side. They asked a very useful question. Shouldn't the two be collapsed together? What we really care about is what net short-term debt is. That is the source of the problem.

### **C. Stress Test**

We have embarked on a bunch of other ways of regulating, including stress tests: an extremely important post-crisis innovation. Many would argue that the U.S. banking system got out of trouble only after the stress tests in March 2009. There is a tremendous amount of value in telling the markets that there are no "walking wounded" banks (banks whose survival is in doubt) left, and that all of them have been taken care of. The reason for this is that if you believe that some remain, you will always be worried that the prices of certain assets can collapse. This is because the walking wounded may have to unload their assets. There is a fire sale discount embedded in the prices of these assets. Because of the possibility that a fire sale could happen in the future, there is always an incentive for you to keep some powder dry so that you can buy into that fire sale. This incentive acts as a constraint on lending and also as a constraint on activity, when you know that there are banks that could get into difficulty.

Therefore, cleaning up the financial system is of value, such as what Japan did in the late 1990s, what the U.S. did in 2009, and what Europe did a few years later. The slower pace of European efforts may account for the slower progress of recovery in Europe. Borio, Drehmann, and Tsatsaronis (2014) argue that stress tests are much more about building confidence in the system rather than acting as an early warning of what might happen. This argument, I think, is consistent with the currently growing de-emphasis on stress tests. Stress tests can help as a bill of current health, indicating the system has recovered. The value of stress tests is perhaps less important looking forward, because we really do not know where the risks might emerge from. Doing these stress tests might give a false sense of confidence that we are safe against risks going forward.

#### **D. Regulation of Bank Structure**

There has been also a certain amount of regulation of bank structures. This happens after every crisis. After the 1929–1933 crisis, we had the Glass-Steagall Act for banks. It turns out that there was no real rationale for the Act. What banks were accused of—selling bonds to bail themselves out of bad loans—did not actually hold up in the data (Kroszner and Rajan [1994]), but such an accusation became the rationale for the Act because banks were in the midst of the crisis and people were very angry with them. And one could argue that Volker Rule promulgated this time was not really dealing with a problem that emerged in the GFC. It was a way of cutting back on bank trading, and was partially political payback for some of the ill-advised activities they did. Some have argued to go further and break up the banks.

Let me talk about the provision of electric money by a central bank, a topic discussed by an increasing number of people. We heard that Governor Kuroda also mentioned it in his opening remarks. Of course, we have to see what form such money would take. One form argued by some is that a central bank should open deposit accounts for everyone. Some claim that a central bank issuance of short-term liabilities should actually be a good thing because it crowds out commercial banks from doing so and prevents them from becoming overly fragile as they undertake these activities. Now, the flip-side view is that the central source of funding for a commercial bank's lending function is the issue of demand deposits, and if a commercial bank gets crowded out of this demand deposit business by the central bank, it has to find another way of funding borrowers. Is there an easy way of doing that? How is the central bank going to flow the deposits it receives back into the financial system? Is it going to take credit risk, thus taking the function of monitoring out of markets? It is not clear how a central bank would provide electric money. Yet, the debate is needed before such a provision takes place, in case it crowds out commercial banks.

#### **IV. Regulatory Incentives**

It is very hard for a central bank to take action in the midst of a boom. William McChesney Martin, a famous Fed chairman, said the role of the Fed is to take away the punch bowl when the party gets going. The problem is that nobody is happy at that point. The best a central banker can do sometimes is not to add to the punch bowl, not to spike it even more when the party's going on, but it is very hard to take it away. There is a lot of political resistance to doing so. People pushing back ask: how do central bankers know that things are going really badly? Things are fine: we do not see any losses. Central bankers have to take away the punch bowl when few losses have shown up because by the time serious losses show up, it is a little too late. It is very hard to do that.

Therefore, what we often have is pro-cyclical regulation. Because we had a fair amount of regulation, we tend to liberalize. When the first flush of liberalization goes well, pressure emerges for more liberalization, and we liberalize into the boom. Then, we have a crisis and we tend to overly regulate in a post-crisis time, because nobody objects to it. The market does not object to that because the market itself is more open

to more capital. So, we use a whole lot of regulation. But, as we start recovering again, there emerges an impetus to deregulate once more.

In the 1930s, we had a lot of regulation. By the 1980s, it was seen that such regulation was too much and we started deregulating right into the 2000s and the GFC. After the GFC, we regulated quickly, but we are already starting to deregulate at this point when, in fact, you could argue that the system is moving from a reasonable level of risk-taking to excess. Deregulating at this point is like putting more alcohol in the punch bowl right when the party is going. Should we be doing this? Clearly, there is a question here.

## **V. Should Monetary Policy Address Financial Stability?**

Let me address a couple of last questions. First, should monetary policy address financial stability? One argument says no because monetary policy has no serious effect on financial stability. Such an argument goes something like this, “Well, we raised interest rates but the party kept going,” “How much would we be required to raise interest rates to stop the party?” and “We will kill the economy with that kind of rise in interest rates.”

Now, the counter-argument is that if you focus only on price stability, especially when inflation is really low for a variety of reasons, financial stability could be jeopardized. A long period of very low interest rates suggests that liquidity should be plentiful for a long time. When that happens for a long time, you get the leveraging. You get the search for yield. You get the illiquidity chasing. You get the risk-building in the financial system which comes to hit you when finally this long period of accommodation comes off. It may be what we are seeing nowadays: a tremendous amount of money have flown into emerging markets. Now you are seeing interest rates start moving up, there are some concerns. Similarly, within industrialized countries, there are areas that have benefited from a substantial increase in leverage in times of monetary accommodation that could have problems as you pull it back.

The second reason for being against monetary policy addressing financial stability is that such a policy would be too complicated. We already have a big problem regarding communication in the conduct of monetary policy. If monetary policy is going to deal with financial stability as well, having many targets will complicate things and become problematic because the number of policy instrument is one: the interest rate.

But the truth is that, if you have one instrument and many targets, it does not say that you should not have those many targets. You have to use that one instrument a little more judiciously and trade off other functions. I think that the question at this point is: are there any circumstances under which monetary policy should actually intervene to head off substantial financial instability? Some argue that it can be incorporated into a medium-term inflation forecast targeting framework by saying that monetary accommodation does ramp up financial fragility and could affect the medium-term growth, and therefore heading it off is part of a central bank’s function.

The third rationale for saying no is that monetary policy is not the right instrument: macro-prudential policy/regulation should be used. The counter-response to this is that

macro-prudential policy/regulation is untested, and it is partial in the sense that it works only on banks. If you constrain banks, then shadow banks will do a lot of activity to substitute, and essentially you may not achieve anything. The nice thing about interest rates is that they get into all the cracks, as Stein (2012) says, and therefore interest rates are better at doing this. I think that the debate will continue.

## **VI. Macro-Prudential Regulation**

I think that Borio (2014) captures the essence of macro-prudential regulation really well. Its effect is to protect the financial cycle from banks; that is, to keep booms relatively contained and also protect banks from that cycle, get them to build up resilience when a boom is taking place. For example, one instrument of macro-prudential is counter-cyclical capital requirements.

The problem in many of these situations is, of course, that you act against the natural instinct of the market, which is to demand very low capital in the boom, and to require substantially more capital in the bust. The instinct of the regulator therefore is to work against such natural instinct by demanding a lot of capital in the boom and demanding relatively less capital in the bust. Now when you have a fight between the regulator and the market, who do you think wins usually? This is where we go back to the point made earlier. If the regulator has an effect solely on the regulated banks, and this is not in accordance with the market's preferences, then risk will migrate to the shadow financial system. We have to deal with shape-shifting finance. If you push against the wishes of the market, you better have the ability to push everywhere. It is not easy.

## **VII. Regulatory Harmonization across Countries**

The last point that I want to make is whether there is a need for regulatory harmonization across borders. With all the activity that is happening in Basel, we have got accustomed to cross-border harmonization, but with the kind of anti-internationalism that is emerging in country after country, I think that, as the community of central banks, we also have to ask the question: is this something that we may be going too far on?

The reason why harmonization of regulation is ostensibly needed is that it creates a level playing field across countries. However, smaller countries would say no because harmonization is cued towards large country preferences. Across the world, there are a few large countries which matter. When they have trouble, they change the rules, but otherwise the rules are binding on everyone else. That is the concern that these international rules might not be really democratic.

The second reason for harmonization is that, otherwise, you get a race to the bottom. However, there is no reason why you would get a race to the bottom, and there is no reason why every country would want to pick the lowest rules. Even if a country has really terrible rules, you stay away from that country. The value of having each country pick rules for itself is to avoid coordinated mistakes. One example of a coor-

dinated mistake, we could argue with the benefit of hindsight, was the Triple-A rating given to sub-prime mortgage-backed securities. There was a belief that these were really safe, so everybody went into them because this gave you the highest bang for the capital buck, the highest return for the amount of capital you were putting. Too much went into it because every central bank was giving the same dispensation. So, could it be that we have more variety and therefore more resilience if we do not have the same rules everywhere?

The third reason is a political economy one. This applies more to small countries. You go back home and you may say, “You know, Basel made me do it, therefore I have to do this.” You may want to do it, but you can blame Basel. The same way as in Europe: you blame Brussels. Among central banks, you can blame Basel. The concern is that this reduces democratic oversight, and as a result, it creates problems down the road.

## **VIII. Concluding Remarks**

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There is a growing recognition that systemic regulation is key. Competition can impinge on financial stability, an old concern which could reemerge in some places. It is clear that monetary policy is not irrelevant to financial stability. The question is: what do we do about it? Is there a way we can bring it into the equation without completely messing up communication?

A risk we should be well aware of, which Governor Kuroda also pointed out, is that, although we might be fighting the last battle very strongly, we may not be fighting the next battle. I think that we have regulated banks very well. Banks have lost talent, and the most aggressive traders have left banks. Where have they gone? They have not vanished. They have gone into the non-bank financial system. Risk also has migrated there, and essentially, as regulators, we are fighting a shape-shifting target, and we have to be careful that we do not keep regulating specific institutions, but regulate more broadly the incentives in the system. Of course, there are new entities like FinTech. You do not want to intervene too early to stop the innovation, but you do not want to wait too late to find out a \$300 billion problem, or deep deficiencies in new entities.

Finally, have we over-regulated banks? Again, this is an area for research. I personally do not think that we should unwind regulations until we understand their effects better. We are in the process of unwinding right now without understanding whether we have done the right thing or not. Doing so is problematic. More broadly, we need broad, robust, stable, and timely regulation rather than micro-management, just because we cannot deal with every problem in detail. We should, however, try to anticipate and deal with big problems.

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