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"The Role of Central Banks: Lessons from the Crisis"

Originally, central banking was born from an act of collusion between the sovereign and the financial sector. A good illustration (since this conference is held in the Napoléon room of the Westin Hotel!) is the creation of the Banque de France by Napoléon Bonaparte in 1800. Napoléon's objective was to have an institution that would be more willing to finance the Treasury than the Parisian private bankers, in exchange for which he was ready to grant the new institution the exclusive privilege of issuing bank notes in Paris. The first years of the Banque saw conflicts between the private bankers who owned the Banque and Bonaparte,[1] as "he saw that they made use of the Bank to advance their own interests" (Liesse, 1911, cited in Goodhart, 1988). Those conflicts led to a new law that ensured, a few years later, that the management was appointed directly by the head of state.

The origin of the Banque de France illustrates a more general pattern. As Goodhart (1988, pp. 19-20) puts it:

> "*Central banks were generally set up initially in the eighteenth and nineteenth centuries to provide finance on beneficial, subsidized terms to the government of the day, and were often rewarded in return with certain monopoly rights in note issuing.*"

This suggests that if one tried to define the objective of central banking in choice-theoretic terms, the original objective was to maximize the joint welfare of the sovereign and of the financiers.

Obviously, we live in very different times. Central banks have objectives that are primarily *macroeconomic*, and these objectives are often laid out explicitly in a mandate that constitutes a sort of "contract" between the central bank and society. The objective is to maximize the welfare of society (often represented, in modern models, by a "representative consumer"). This being said, the tensions between the central bank, the sovereign, and the financiers that existed at the origin of central banking are still present, and I will argue that the crisis gives them new prominence. My remarks will be organized into three parts. First, I will describe the new consensus about monetary policy and how it is being revised in response to the crisis. I will then

[1] The new institution was owned by private shareholders, mostly bankers, but also by members of the Bonaparte family.

talk about the relationship between the central bank and the financiers, and finally that between the central bank and the sovereign.

1. The "new consensus"

The theory and practice of central banking has always been a work in progress. The main focus, since the fall of the Gold Standard, has been the "invention" of a new nominal anchor to replace gold. This effort culminated at the end of the last century in a consensus about monetary policy that can be characterized as follows:[2]

- the objectives of central banking are *macroeconomic*, primarily in terms of inflation and secondarily in terms of output or employment;
- the institutional framework of monetary policy should ensure both the independence and the accountability of central banks.

These ideas are embodied in the mandate of inflation-targeting central banks, as well as the practice of many central banks that do not operate in the context or a formal inflation targeting regime. The optimal central banking arrangement has been described, in theoretical terms, as a "contract" that is passed between society and the central banker (Walsh, 1995).

The financial crisis has led to several critiques of this consensus. The main critique was that the focus on the macroeconomic objectives of central banking had come at the cost of neglecting financial stability. This has led to debates about how financial-stability policies can be improved, and about the extent to which central banks should be in charge of those policies. It is generally accepted that the provision of liquidity in a crisis should be done by central banks, but there are disagreements about the role of central banks in prudential regulation and supervision (Blinder, 2010). The general trend, however, seems to be giving more powers to central banks in those areas.

There is also a debate about whether monetary policy should pursue financial-stability objectives on top of its macroeconomic objectives. In particular, should the interest rate be increased above and beyond the level required by the inflation and output objectives during asset price and credit booms in order to mitigate the risk of a crisis? [3] The positive answer is based on what one might call a "holistic" view of monetary policy, that is, a belief that all instruments (including interest

[2] I am giving here a definition of the new consensus that is rather minimalist and glosses over significant differences in the way that central banks practice monetary policy because these differences are not essential for the points that I am going to make.

[3] This is the continuation of a debate that was already going on before the crisis: see for example Borio and Lowe (2002), Bordo and Jeanne (2002), Bernanke (2002). This debate is related to, but conceptually distinct from the question of whether monetary policy contributed to *causing* the boom. Some argue that the US real estate boom was caused in part by a policy interest rate that was too low from the point of view of the macroeconomic objectives of monetary policy (see, e.g., Taylor, 2007). I tend to agree with the opposite view that monetary policy was roughly in line with the Taylor rule given the information available at the time (Bernanke, 2010), but this does not mean that the interest rate should not have been higher.

rate setting) should be put at the service of pursuing all targets (including financial stability). The opposite view (which one might call "reductionist") is that monetary policy should remain exclusively at the service of its macroeconomic objectives, whereas financial stability would be pursued by other instruments such as macroprudential policies (see, e.g., Svensson 2010).

These debates are still on-going, and it is probably premature to try and delineate the contours of a new post-crisis consensus. This being said, most of what I hear from central banks suggests an attempt to preserve the purity of the "macroeconomic contract" for central bankers. It is argued that since it is financial-stability policies that were at fault before the crisis, it is those policies that need to be fixed. Conditional on this, there is no need for a big revision in the pre-crisis consensus about monetary policy: it should continue to focus on its macroeconomic objectives.

I can see merits in the revised consensus. It is hard to disagree with the notion that it is better to develop new instruments rather than chasing more and more targets with the interest rate. Furthermore, monetary policy is probably too blunt an instrument to deal with financial imbalances when they develop in certain sectors of the economy. In the euro area, in particular, booms and busts in credit and asset prices are often national, and so must be dealt with using another instrument than monetary policy.

The main problem with the new consensus, as I see it, is not a lack of intellectual consistency, but a lack of *realism* about the challenges to central banking that will stem from the crisis. Those challenges, I will argue, are related to the "dirty roots" of central banking—the triangular relationships between the central banker, the financier, and the sovereign. Let me consider, in turn, the financier and the sovereign.

2. The central banker and the financier

One thing that was clear to Napoléon Bonaparte, but that the consensus model is missing, is a realistic representation of the financial sector as a special interest. The consensus model focuses on the agency problems that arise between the central bank and the sovereign, but it neglects the more subtle agency problems that might arise with the financial sector. The financial sector is represented as essentially passive: as an anonymous and perfectly competitive market for bonds—or as a source of financial friction in the monetary policy channel.

One important new theme that has emerged from the crisis, however, is that of the capture of policy-making by the financial sector, especially in the US (see Johnson and Kwak, 2010, and references therein). Indeed, one reason to endow central banks with more regulatory and supervisory powers is the perception that they will be less amenable to capture than agencies with a narrower mandate. But this raises the question of the extent to which central banks themselves are independent from the financial sector as an interest group.

This is not an easy question. First, there are legitimate reasons that the relationship between central banks and the financial sector should be a symbiotic one. Central banking, whether it

relates to monetary policy or financial stability, is largely about managing the expectations of the financial sector. It stands to reason that central bankers should pay close attention to those expectations. However, understanding how financiers think may sometimes come close to actually thinking like them.

Second, the mechanisms by which central banks come to internalize the objectives of the financial sector are implicit and indirect. This does not mean, however, that they are not powerful. For example, central bankers are appointed by the sovereign, not by the financial sector. However, the basis for this appointment is the professional reputation of the candidates, which itself is strongly influenced by the opinion of market participants. Between two candidates who are otherwise equally qualified for the job of central bank governor, the sovereign is likely to choose the one who is more popular with the financial sector. Thus, a central banker with rational career concerns should always pay close attention to his or her reputation with private market participants.[4]

One could object that central banks cannot veer away too much from their legitimate objectives because they are guided or constrained by their mandate. But again, this mandate is about the *macroeconomic* objectives of monetary policy, and leaves plenty of discretion insofar as policies toward the financial sector are concerned. There is a lot of room, in the interstices of the macroeconomic contract, to pander to the interests of the financial sector. The problem, in the parlance of contract theory, is that the contract for the central banker is "incomplete."

Following this train of thought logically leads to the following model for what real world central banks are doing: Central banks maximize the welfare of the financial sector conditional on satisfying their macroeconomic contract. Such a model is perhaps too simplistic but it has a certain power to explain the financial crisis as well as how central banks responded to it. In the US, for example, the macroeconomic contract (low inflation, low unemployment) was satisfied before the crisis, but the Fed clearly made insufficient use of the prudential policy tools that were at its disposal.[5] The crisis policies of the Fed have been interpreted through a similar prism by Buiter (2008). [6]

It is also hard not to notice that when the "science of monetary policy"—to use the phrase of Clarida et al, 1999—contradicts the preferences of the financial sector, it is the latter that tend to prevail. Consider, for example, the operation of monetary policy under the "zero-bound

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[4] Alternatively (if one does not like a worldview in which opinions are professed out of self-interest), the individuals who genuinely think that what is good for the financial sector is good for the country are more likely to prevail in the contest for central bank governorships .

[5] The Fed did not have all the tools that it retrospectively wished it had, but it did not use effectively the available instruments, suggesting that the lack of instruments was not the only problem.

[6] Buiter (2008) writes about a "cognitive regulatory capture" of the US central bank by Wall Street: "Throughout the ten months of the crisis, it is difficult to avoid the impression that the Fed is too close to the financial markets and leading financial institutions, and too responsive to their special pleadings, to make the right decisions for the economy as a whole."

constraint" on the nominal interest rate. A large literature on the Japanese liquidity trap had concluded, before the crisis, that quantitative easing does not work unless it raises the expected rate of inflation (Krugman, 1998; Eggertsson and Woodford, 2003; Walsh, 2010). The implication is that the central bank should try to raise expected inflation through a policy of "forward guidance" about the future policy rate. This is an implication not only of dynamic stochastic general equilibrium (DSGE) models that have been increasingly used by central banks, but of any model in which monetary policy operates through the real interest rate and expectations are forward-looking. The Japanese monetary authorities were blamed for failing to understand that fact.

When the US Fed and other central banks hit the zero bound constraint, however, they too resorted mainly to quantitative easing and very little to forward guidance.[7] There may be good reasons for this: in particular, the forward guidance of inflation expectations may be difficult to implement in practice without compromising the long-run credibility of monetary policy. But it is also difficult not to note that the financial sector should prefer quantitative easing to higher inflation, because the former bids the price of assets up whereas the latter depresses the price of long-term fixed-income assets.

How can this problem be solved? Ideally, one would like to "complete" the contract between the central bank and society so as to address the agency problems with the financial sector as they were with the sovereign. The problem is that it is difficult or even impossible to design contracts for financial-stability policies that would have the same transparency and accountability as those for monetary policy. This is intrinsically more difficult because the outcome of financial-stability policies is difficult to observe and measure. As shown by Laffont and Tirole (1991), this is exactly the kind of environment in which regulatory capture tends to arise.

What are the policy implications? First, I believe that the debate about the capture of policy-making by the financial sector is likely to stay with us for some time. As central banks get more and more involved in financial-stability policies, they will need to find credible ways of defusing the suspicion that they care about the interests of the financial sector rather than society as a whole. A failure to do so would weaken the legitimacy of central banks' independence, including for monetary policy.

Second, an incomplete contract view of central banking can provide a justification for a holistic view of monetary policy in which the interest rate is also used to achieve objectives of financial stability. The idea that monetary policy can focus exclusively on macroeconomic objectives works only if the public trusts that financial-stability policies are doing their job. But if there are

[7]Thus, the Fed chairman went to great length to reassure the public and congress of an exit strategy that would not involve higher inflation. Here, I am glossing over an important nuance between "quantitative easing" and "credit easing." The purchase of long-term bonds may reduce the spread between long-term and short-term bonds, although the impact of this policy seems to be relatively small (Gagnon et al, 2011).

reasons to doubt that they will, it can make sense for society to ask the central bank to lean against the wind in financial booms in a verifiable way, by raising the interest rate.

3. The central banker and the sovereign

The consensus model of monetary policy assumes *monetary dominance*, i.e., that the monetary authorities do not monetize government debt. This implies that if the government is insolvent, there must be a fiscal adjustment or a default. Monetary dominance is a basic assumption (so basic that it generally goes unstated) of the consensus model. However, because of the fiscal consequences of the Great Recession (and aging populations), advanced economies are heading into an extended era of fiscal stress. This raises the question of how a conflict between monetary dominance and fiscal dominance would play out in advanced economies.[8]

The first question one must address in a conflict between monetary dominance and fiscal dominance is: who wins? The litmus test of monetary dominance, to put it concretely, is whether the central bank would rescue the Treasury or let it default when push comes to shove, that is, when the Treasury is unable to roll over its debt with private lenders. It is fair to say that we do not know the answer to this question, and that it may depend on the countries that we look at.

I tried to get a better sense of the answer in the case of the US by asking the question to a few economists who are working or have worked in the past at the US Fed. The overwhelming majority of my respondents said that they could not imagine that the Fed would let the US government default. The reasons that were given to me ranged from the systemic consequences of a default for the financial sector, to the fact that the US Treasury has never defaulted in its history. Only one respondent saw a default as possible, although unlikely.

In addition, the historical evidence does not suggest that monetary dominance–when it is really tested–is common. I have looked for, but did not find a case where a government defaulted on its debt even though the debt could have been monetized and inflation was low. There are of course many examples of government defaults in the modern period (as reviewed by Reinhart and Rogoff, 2009), but they generally occurred when the debt was denominated or indexed in such a way that it could not be easily monetized, or when the domestic seigniorage capacity had already been destroyed by hyperinflation.[9] By contrast, there are many examples of peaks in government debt being resolved by high inflation, an approach that seems especially effective when nominal interest rates are kept low by financial repression (Reinhart and Sbrancia, 2011).

The lack of historical evidence in favor of monetary dominance does not mean that it cannot prevail in the future. In some countries (including euro area countries) central banks are

[8] This conflict is already visible in the euro area, but in a form that is rather special since it involves one single independent monetary authority and seventeen largely uncoordinated fiscal authorities. Although this setting seems uniquely tilted toward monetary dominance, it is striking to see how difficult letting a government default seems to be.

[9] See Table 7 of Reinhart and Rogoff (2009) for a list of domestic government debt default or restructuring.

explicitly barred from monetizing government debt, and such safeguards might indeed be effective. This being said, it is not farfetched to think that we are entering a time in which monetary dominance will be tested and will prevail with a probability that is lower than 100 percent. How does monetary policy work in such an environment?

This question has been studied in a small theoretical literature. For example, Davig and Leeper (2011) use a DSGE framework to assess the implications of rising government debt in an environment with a ‘‘fiscal limit,’’ i.e., a point where either a fiscal adjustment or debt monetization must occur. [10] They show that the risk of debt monetization poses a substantial challenge for a central bank that targets the inflation rate. Monetary policy falls prey to a kind of "peso effect": the risk of monetization, even if it is small, increases expected inflation, which in turn worsens the trade-off between inflation and unemployment. As a result, the central bank must pay a much higher cost in terms of unemployment to keep inflation close to the target.[11] Davig and Leeper show that this phenomenon starts occurring at a relatively low probability of debt monetization.

It is easy to see that in such an environment, the dynamics of the economy may be affected by negative feedback loops. Pursuing the inflation target is difficult to sustain if this depresses the economy and worsens the fiscal stress. The relationship between fiscal policy and the monetary authorities may become excessively contentious. The weak performance of monetary policy may weaken the societal and political support for central bank independence, making monetization more likely. This is not an environment in which central banks would like to live.[12]

What is the policy implication? The main implication for central banks is that they have a strong interest in avoiding an outright conflict between monetary dominance and fiscal dominance, which they are unlikely to win. Central banks, thus, should be at the forefront of the research and analysis on how government debt could be structured *ex ante* so as to minimize the risk of default (for example, by indexing debt to GDP, as suggested by Ken Rogoff in an earlier session of this conference) and how it can be restructured *ex post* at minimum cost in terms of financial disruption. Admittedly, it is difficult for central banks to publicly comment about a government

[10] The Davig-Leeper model does not allow for government default. Uribe (2006) presents a model in which default is an alternative to monetization, but in which there is no nominal stickiness. There is clearly a need to develop richer models of the conflict between monetary and fiscal dominance.

[11] Davig and Leeper (2011) claim that the central bank is "losing control" over the inflation rate. What they mean is that a monetary policy rule that delivers low and stable inflation under monetary dominance implies high and increasing inflation when monetary dominance is uncertain. Another way of putting it (which I prefer) is that although the central bank can control inflation, it faces a worsened trade-off with unemployment.

[12] Another problem is that the operation of monetary policy becomes more complicated as short-term government debt is no longer a safe asset (Bolton and Jeanne, 2011). The lack of certainty about monetary dominance creates a host of problems that have not been thought through carefully in the literature.

default, but on the other hand, eluding the question simply by repeating a mantra about the necessity of fiscal adjustment is not a viable strategy.[13]

4. Conclusions

This session was about central banking—what central banks are supposed to do and how they are supposed to do it. Before the crisis, a remarkable degree of consensus had been achieved about *monetary policy*, which is not the same thing as central banking. The crisis has shaken this consensus, but it is not yet clear how deeply it has done so.

The purpose of these remarks was not to present a critique of the consensus model of monetary policy. I do not know a better alternative to anchor nominal expectations, and it is important to preserve the achievements of this model in terms of price stability and credibility. However, the consensus model might be challenged more deeply than is commonly acknowledged. The contract for a central banker is a social contract that can be undone, and ultimately is buttressed by the perception that it is delivering good outcomes for society. I have emphasized two challenges in that regard. First, it will be important for central banks to address the perception that they put excessive weight on the interests of the financial sector. Second, central banks should be more proactive in finding ways of defusing a conflict between fiscal and monetary dominance.

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[13] Let me add in passing a thought about the meaning of "flexible inflation targeting" in a conflict between monetary and fiscal dominance. Flexible inflation targeting, as defined by Svensson (2010), means that the central bank minimizes a loss function involving inflation and capacity utilization. Monetizing the government's debt implies high inflation but letting the government default might involve a very low level of capacity utilization. It is not a priori obvious, if the choice is between those extremes, that flexible inflation targeting implies that the central bank should opt for default rather than monetization. This is a quantitative question, not a point of doctrine.

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