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The State of Play in Central Banking and the Challenges to Come

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1.1 Introduction

In 2006, the editors conceived the idea of holding a high-level conference to assess the state of play in central banking. At the time, the world economy was in the midst of what has come to be called the "Great Moderation" (Bernanke 2004). We felt that it was high time to take a step back and consider how central banking evolved over the past 20 years or so and the challenges that lay ahead for monetary policy. Little did we know that, soon after the conference – which was co-organized with the National Bank of Hungary – ended, we would enter a global financial crisis, which, as this is written, is still ongoing.[1] Therefore, it is perhaps even more appropriate now not only to take stock of what has been accomplished and the lessons learned, but, perhaps equally importantly, to look ahead and consider what the future of monetary policy might be governed by.

At no time has the performance of central banks been more in evidence than in the last decade. Many central banks have embraced inflation targeting. Nevertheless, central bank behavior around the world differs in a number of respects (e.g., Siklos 2008, and references therein). These differences call for an up-to-date assessment of central banking. This book brings together some of the top researchers in the area of central banking; the chapters emphasize some of the most pressing issues in monetary policy today. The topics covered include the present challenges facing central banks, namely the role of price stability, transparency, governance,

[1] Details about the original papers presented at the conference are available at http://www.wlu.ca/viessmann/html_pages/MNB.htm. The conference was jointly organized by the Viessmann European Research Centre at Wilfrid Laurier University, the Chair of Monetary Economics at the Westfälische Wilhelms-University, Münster, and the National Bank of Hungary, which graciously hosted the conference in May 2007.

central bank independence (CBI), the conduct of monetary policy, financial stability, the importance of monetary policy rules, and supervision.

The book is divided into three parts. Part I examines the conduct of monetary policy in the past, present, and future. Part II considers the scope and limits of central banking. Part III explores transparency and governance in central banking. This book takes a comprehensive look at and debates some of the most important questions in the economics of modern central banking. The various chapters offer a mix of new research and a general survey of issues faced by central banks today. It is also hoped, of course, that the contents of this book will provide a launching pad for future scholarly research in this field.

1.2 Part I: Past, Present, and Future in the Conduct of Monetary Policy

Vitor Gaspar, Frank Smets, and David Vestin provide an overview of the case for price-level path stability (PLPS), also referred to as the policy of price-level targeting, in Chapter 2. A number of authors have argued that price-level stability induces increased volatility in inflation and in the output gap when compared with a regime of inflation targeting. However, Svensson (1999) shows that, under rational expectations, price-level targeting can lead to lower inflation and output variability. Clarida et al. (1999) and Svensson and Woodford (2005) have shown that in a new Keynesian model, optimal monetary policy under commitment leads to a stationary price level. The idea here is that when a central bank commits itself to price-level stability, rational expectations become an automatic stabilizer.

Using a standard hybrid new Keynesian model similar to that described in Woodford (2003), Gaspar, Smets, and Vestin argue that price-level stability provides a framework for monetary policy under commitment. Gali and Gertler (1999) and Gali, Gertler, and Lopez-Salido (2001) show that such a hybrid new Keynesian–Phillips curve fits the actual inflation process in the United States and in the euro area quite well. Gaspar, Smets, and Vestin present two main arguments in favor of a PLPS regime. First, under rational expectations, price-level stability leads to macroeconomic stability in general by making expectations operate like automatic stabilizers. Second, a PLPS regime implies that changes in the price-level act like an intertemporal adjustment mechanism, reducing the magnitude of required changes in nominal interest rates. The commitment to price-level stability helps to lessen the restrictions posed by the lower bound on nominal interest rates. The arguments made in favor of PLPS are dependent on endogenous expectations. The stabilizing effect of PLPS on nominal interest rates stems from the fact that fewer adjustments to policy rates are necessary. Consequently, the frequency with which the lower bound on nominal interest rates is attained for a given inflation target is also diminished. When the nominal rate is at zero, the price level will continue to operate as an automatic stabilizer.

Gaspar, Smets, and Vestin also review the arguments against PLPS. First, PLPS is costly when there is imperfect credibility. It has been argued that the determination of whether PLPS is beneficial depends on the credibility of the reversion to the price level. Numerous papers have argued that the benefits of price-level stability are close to zero when the degree of credibility of the monetary policy regime is low, or expectations are backward looking rather than forward looking. A related argument against PLPS is that the transition costs of moving to such a regime are too large in the presence of private sector learning. A second argument against PLPS stems from uncertainty and ongoing learning about the economy by the central bank. Policymakers make mistakes that lead to greater volatility in the price level. Hence, price-level stability makes past policy mistakes very costly to reverse. Gaspar, Smets, and Vestin point out, however, that the above argument does not take into account the positive effects that PLPS may have on expectation formation by the private sector in response to central bank mistakes. They point out that Aoki and Nikolov (2005) find that the benefits of price-level targeting are increased rather than reduced when the central bank faces uncertainty about the economy. These results are also confirmed by Orphanides and Williams (2007).

In spite of the obvious desirability of adopting a monetary policy strategy geared toward achieving price-level stability, there are few indications that any central bank will adopt such a regime any time soon. Although the topic of PLPS is on the research agenda at the Bank of Canada, as it prepares to discuss the renewal of the inflation control objective in 2011, there exists a number of practical hurdles that stand in the way of adopting such a policy. First, the case for PLPS is less well analyzed in the open economy case and, as Parkin (2009) points out, it is unclear whether there is sufficient consensus among politicians, let alone economists, on the inherent superiority of this monetary regime. Second, it is unclear what the implications would be for a country that ends up being the first adopter of this form of price-level targeting while the rest of the world does not. Third, much though not all (as the authors make clear) of the theoretical rationale is based on the current canonical new Keynesian model that lacks a financial sector, let alone allowing for the possibility of a financial crisis. Although some advances have recently been made in this direction (e.g., Cúrdia and Woodford 2008), it is still generally the case that financial crises are only permitted to exogenously influence existing models.

In Chapter 3, Georgios E. Chortareas and Stephen M. Miller point out that recent studies of central banking have raised the issue of the endogeneity of the central bank's decision-making process. This work has focused on institutional structure and incentive constraints. A large body of research deals with attempts to lessen the time-inconsistency problem and related political-economy problems. This research has implications for the institutional framework of central banks (e.g., accountability, transparency) and the delegation process (e.g., inflation targeting, conservatism, incentive contracts). Berger et al. (2001) discuss the difference between CBI and central bank conservatism. Conservatism reflects the weight that the central bank places on controlling inflation relative to output fluctuations. Independence reflects the importance of central bank preferences (as opposed to society's preferences) in determining monetary policy. Chortareas and Miller adopt the principal-agent approach to central banking and discuss its relationship to other institutional designs that attempt to eliminate the time-inconsistency problem, where the principal is the government and the society and the agent is the central bank. They also present an extensive review of the literature on central bank contracts and discuss the related equivalence propositions, as well as presenting some new approaches that focus on the optimality of delegation versus the consistency of delegation.

Chortareas and Miller review the literature that offers proposed solutions to the time-inconsistency problem, which include conservative central bankers, inflation targeting, and explicit contracts. Much of this literature focuses on design of policy rules and shows how these rules dominate discretionary policy. There continues to be an ongoing debate on the issues (e.g., Athey et al. 2005; Persson et al. 2006). Even if a central bank adopts a rule, there is still the problem of commitment. Delegation of such a rule can address the commitment issue.

Chortareas and Miller's modeling framework yields some interesting findings. First, they find that granting independence to the central bank may or may not achieve optimal outcomes. The outcome depends on the objective function of the central bank. Indeed, one aspect of the specification of a central bank objective function not considered is the possibility of interest rate smoothing, evincing a concern for real exchange movements, or even permitting the discount rate of the monetary authority to change. Whereas the broad conclusions of their analysis would doubtlessly remain unchanged, the implications of alternative objective functions remain understudied. Second, the conservative central banking solution alone cannot achieve optimal outcomes. It simply alters the trade off between hitting the inflation and output targets, with greater weight placed on the inflation target. Third, the inflation targeting strategy does not achieve optimal outcomes. That is, the expected values of the target variables are not equal to the optimal outcomes. As a result, the central bank selects targets for output and inflation that are unattainable. Fourth, the explicit contracting solution (either inflation or output incentive contracts) does, in fact, achieve optimal outcomes.

Beyond the issues considered in Chapter 3, it is apparent that summarizing the "contractual" relationship between the central bank and the government omits the possibility that there exists another implicit contract, namely one between the central bank and the public. Few doubt, for example, that a "special" relationship existed between the Bundesbank and the German public while that institution was responsible for the conduct of monetary policy in Germany, and there is a strong sense that the European Central Bank is attempting to follow the same path. Finally, as will be evident to readers of this book, the theoretical apparatus employed by the authors does not explicitly consider the fact that central banks have many roles to play, including the maintenance of financial system stability and banking supervision, and that any maximization exercise will be unable to capture the richness of the calculus that central banks must actually face.

Corrinne Ho examines in Chapter 4 how the day-to-day implementation of monetary policy has undergone significant changes over the past 15 years. Ho presents an in depth and comprehensive discussion of numerous aspects of central banking covering 17 central banks. Monetary frameworks and other aspects of policy making in 14 Asia-Pacific central banks, the European Central Bank, the Bank of England, and the Federal Reserve are considered. One might well ask why a focus on central banks in the Asia-Pacific region versus the usual suspects in the rest of the industrial world. The reason is simple. This is the part of the world that has most recently undergone a fundamental transformation: in part because of the momentum generated by the changes made in the conduct of monetary policy at major central banks, but perhaps more so as a result of the wrenching impact of the 1997–1998 financial crisis. That crisis did not spread worldwide, as did the crisis of 2007–2008, but it nevertheless led to a substantial rethinking about the practice of monetary policy.

Ho finds that a number of trends in the day-to-day operational framework and the choices of instruments have emerged. For example, many central banks now express their official monetary policy stance in terms of an interest rate target. Almost all of the central banks in her study make policy decision announcements at predetermined dates. Central banks have focused on stabilizing some short-term interest rate rather than focusing on a quantity such as reserves. Reserve requirements have played a much smaller role than in previous years. Reserve ratios differ widely among countries. In a number of countries, required reserves no longer act as a tax on the financial institution. Ho finds that among more than half of the sampled central banks that impose reserve requirements, there is explicit remuneration of required reserves. A few of the 17 central banks in the sample still use quantities (e.g., reserves, M2) as operating targets.

Not all of the central banks signal their policy stance with an interest rate. Central banks that are running exchange rate-based regimes with no capital controls cannot use an interest rate. For example, policy in the currency board regimes of Hong Kong and Macao employ the spot exchange rate as anchor. Ho concludes that there are some widely used practices within these central banks, there is no unique "best" way to implement monetary policy. More importantly, central banks in both the developed and developing world continue to refine monetary policy in response to changing economic conditions.

As Ho points out, the events of 2007–2008 make it impossible to keep up with the remarkable new instruments and approaches central banks have taken to stem the implications of the severe credit crunch that has seized the world financial system. However, she helpfully provides a link to some recent developments, and these are likely to need updating as time goes on. It is also notable that Chapter 4 suggests that globalization in financial markets has not led all central banks to adopt a homogeneous set of principles. Considerable diversity remains, and it is possible that, when the dust settles, some elements of central bank operations that were better able to withstand the impact of the crisis will be scrutinized for clues about the set of policies that reflect best practice in the conduct of monetary policy.

1.3 Part II: The Scope of Central Banking Operations and Central Bank Independence

This part of the book deals with the scope and limitations of central banking. In Chapter 5, Charles A. E. Goodhart and Dimitri P. Tsomocos argue that central bankers seem to have developed a consensus about the theoretical framework for analyzing the transmission mechanism of monetary policy, and that there is considerable agreement in the profession about how a central bank should carry out its policies (e.g., an independent central bank and a target for inflation). However, there is no consensus about the theoretical framework for achieving a financial stability objective, a requirement that many central banks also have to meet.

Goodhart and Tsomocos investigate why it has been so difficult to achieve consensus on this point. First, they provide a historical outline of central banks' role in ensuring financial stability. They discuss the reasons why there has been, in recent years, such a diversity of views on the best way to ensure financial stability. They find that the institutional structure of commercial banking supervision is extremely diverse, with central banks sometimes playing no supervisory role and sometimes having full responsibility for commercial bank supervision. The authors also argue that regardless of the supervisory role, central banks must have an operational role in the maintenance of the stability of commercial banking, of the payments system, and in dealing with financial crises. Second, central banks should play a role in designing the regulations under which commercial banks operate, even if the supervision of these banks is conducted by a different agency.

Chapter 5 then investigates how one might go about developing a theoretical basis to address financial stability issues. The first main part of any theory is that a model must be based on the probability of commercial bank default. The authors then outline how such a model might be developed. Their general equilibrium model incorporates heterogeneous banks and capital requirements. In addition, their model contains incomplete markets, money, and default in a two-period framework where all uncertainty is resolved in the second period. In the first period, economic agents either borrow or deposit money into commercial banks in order to achieve a preferred time path of consumption. Banks also trade among themselves. The central bank intervenes in the interbank market to change the money supply and the interest rate. Bank capital adequacy requirements are set by regulators who may or may not be the central bank. Goodhart and Tsomocos conclude by suggesting that banking and finance have become increasingly international in nature, whereas regulation and supervision have to be based on a specific legal structure, which is at the national level. Crises also depend on how they are dealt with nationally.

Clearly, an outline of a model aimed at addressing the issue of financial system stability must omit a number of complications. That these exist will become readily apparent to readers in the next three chapters. In particular, the idea of attaining and maintaining financial system stability is partly a political-economy question. Moreover, there is the issue of how to deal with financial shocks when banks deal with several financial systems simultaneously. Finally, there is the problem of regulation and its diversity around the world – notwithstanding the attempts by the Basel Committee to aim for some international consensus on best practices that has, in spite of their best attempts, now been fundamentally put into question as a result of recent events. The sensibly defined balance sheet the authors rely on, necessitated to keep the analysis at a tractable level, does, however, omit real-world complications that have emerged as central to undermining trust among financial institutions since the summer of 2007. These complications are not easy to deal with, but at least the chapter begins by asking the right questions and providing some initial answers; elsewhere related works do not directly deal with the analysis of financial system stability in such an explicit manner.

In Chapter 6, David G. Mayes and Geoffrey E. Wood note that, for the most part, central banking remains national, while commercial banking has become international. They then investigate the problems this development creates for today's central banks. First, the authors lay out the functions of central banks to better understand which of the functions may be impeded by the internationalization of commercial banking. They focus on two major functions, monetary stability and financial stability. As Goodhart and Tsomocos point out in Chapter 5, there is no single accepted or rigorous definition of financial stability. Mayes and Wood then examine what should be done to deal with how the internationalization of commercial banking impedes central bank policies. They conclude that internationalization of commercial banking does not prevent a national central bank from carrying out the lender of last resort function by which to stabilize the commercial banking system. In addition, bank internationalization does not expose countries to financial crises.

Although explicitly pointing out that cooperation and coordination are not the same thing, Chapter 6 leaves the complications of deciding which is better when a central bank has less than complete jurisdiction over the banking and financial sectors. Moreover, as this is written, governments and central banks have embarked on much more heavy-handed interventions in the financial sector, and there are, as yet, untold implications for central banks and the renewed emphasis on their historical role as lenders of last resort. The authors do make an effort to lay out some of the broad implications of recent developments, a hopeless task under the present circumstances, but one might worry about their "pessimistic" conclusion in the aftermath of the failure of Lehman Brothers. Although AIG was rescued shortly thereafter, this puts paid the notion that central banks can and will solve a problem created by the internationalization of commercial banking.

Bernd Hayo and Carsten Hefeker begin Chapter 7 with the observation that, in the last 20 years, many countries have made their central banks more autonomous. Most economists agree independence is important because it is a device that can assist the central bank in achieving the goal of price stability (Cukierman 2006; Arnone et al. 2007). Hayo and Hefeker present a number of arguments questioning some aspects of the conventional view of CBI, and its beneficial impact on inflation control. They argue that CBI is neither necessary nor sufficient for ensuring monetary stability. CBI is just one monetary policy design instrument among many that can be employed to achieve price stability. Therefore, no one policy instrument is optimal under all conditions. They argue that CBI should not be treated as an exogenous variable, but instead attention should be given to the question of why central banks are made independent.

It is well known that the empirical literature finds CBI to be correlated with low inflation. In this book, Mayes and Wood also argue that CBI is not the only cause of low inflation. By taking the endogeneity of CBI into account, there is little reason to believe that the correlation between CBI and low inflation tells us anything about causality. Their approach is somewhat reminiscent of the argument that the success of the euro area has nothing to do with whether it is an optimal currency area. Rather, once the political will exists to introduce a common currency, the single currency area will eventually become more like an optimal currency area. Hence, the usual optimal currency area criteria are endogenous.

Hayo and Hefeker first review the theoretical foundations of CBI. They outline serious theoretical problems with the conventional argument that CBI is the optimal instrument of monetary design. Next, they show alternative monetary design instruments that can cause low inflation. In particular, they note that these alternatives are fixed exchange rate and currency boards, inflation targeting, and inflation contracts. These have more favorable (or equal) theoretical properties than CBI and have been put into practice. Strictly speaking, this is true. However, what the authors do not emphasize sufficiently is the quite small shelf life of these types of exchange rate regimes. In addition, the world has moved away from rigid exchange rate regimes to ones that permit greater flexibility. The reason seems clear. A central bank with considerable autonomy under a flexible exchange rate regime at least can choose an independent path for its monetary policy. The alternative monetary policy strategies cannot do so, even if they are able to deliver, in theory, the same inflation outcomes. Of course, a more independent central bank does not automatically imply that credibility will be established. Siklos (2002), for example, finds that the linkage between CBI and inflation has been reversed in the 1990s and is negative.

Hayo and Hefeker's main conclusion, then, is that there are alternative means of keeping inflation low other than simply via the granting of CBI. Society has to make two decisions about monetary policy. First, it must decide how important the fight is to keep inflation low. Second, it must choose the best institutional arrangement to achieve price stability. The first decision implies that CBI is not a sufficient condition for price stability because it is one of many instruments to achieve price stability. The second decision makes it clear that CBI is not a necessary condition for price stability, although it might be what some countries need.

In Chapter 8, Donato Masciandaro, Marc Quintyn, and Michael W. Taylor investigate recent trends and determinants of financial supervisory governance with special attention to the role of the central bank as supervisor. A considerable amount of research has been devoted to the relationship between CBI and accountability. Much less, however, has been written about supervision. Indeed, recent work has argued that the supervisory function is, under a variety of circumstances, best delegated to an independent agency.

One issue raised is whether it is beneficial to have monetary policy and commercial bank supervision under one roof. In many countries, the supervisory function is performed by institutions other than the central bank. Building on the work of Quintyn et al. (2007), the authors of Chapter 8 provide ratings for independence and accountability for commercial bank supervisory agencies in 55 countries. Their empirical analysis of the determinants of emerging independence and accountability arrangements indicates that the quality of public sector governance plays a decisive role in establishing accountability arrangements more than independence arrangements. The more mature a democracy is, the more likely it is that a higher degree of independence and accountability will be granted. Their results also show that accountability is driven by crisis experiences, whereas independence is influenced by a kind of "bandwagon" effect. Finally, their findings also indicate that the likelihood for establishing governance arrangements suitable for the supervisory task seems to be higher when the supervisor is located outside the central bank.

It should be clear that rules establishing good governance practices are desirable. What remains unclear is the precise relationship between a central bank on the one hand, the government on the other, and the supervisory body. A further complication that cannot be easily captured by the kind of analysis carried out here is that the financial sector has changed so greatly around the world that it is more difficult to identify firms for which the primary function is a financial one from firms that combine financial and