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INTRODUCTION

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Monetary union has dawned in Europe. Now that the common currency is a reality, questions concerning the practical conduct of monetary policy in the European Monetary Union (EMU) are moving to the forefront of the policy debate. Among these, one of the most critical is how the new monetary union will cope with the large heterogeneity of its member economies. Given the large differences in economic and financial structures among the EMU member states, monetary policy is likely to affect different member economies in different ways. While economists usually think about monetary policy as a typical macroeconomic tool of economic policy, i.e., one that affects aggregate employment and the price level with no important structural effects, the economic heterogeneity of the EMU member states implies that monetary policy may cause sizeable movements in regional employment and regional relative prices. This, in turn, implies that representatives from the different member states may have very different views about what is the appropriate stance of monetary policy at any point in time.

This volume collects the proceedings of an international conference held at the Center for European Integration Studies of the University of Bonn in July 1998, dedicated to this issue. The contributions to this conference fell into two parts. The first part consists of empirical and theoretical studies of the regional effects of monetary policy in heterogeneous monetary unions. The second part consists of papers analyzing the political economy of monetary policy in a monetary union of heterogeneous regions or member states.

The first three papers in part one provide empirical evidence on the importance of regional differences for the monetary policy of the North American monetary unions - the United States and Canada.

In Chapter 1, Michael Horvath examines three questions. First, do U.S. regions differ in their response to identifiable aggregate shocks? Second, do U.S. monetary policy responses to aggregate shocks affect regions differently? Third, do regions in the U.S. experience significant region-specific shocks and does centrally determined monetary policy respond to them? Based on VAR estimates, Horvath shows that the answer to the first two questions is unambiguously positive. Responses to aggregate shocks such as oil price shocks differ significantly across regions, and monetary policy has sizeable regional effects. Horvath then goes on to show that optimal monetary policy as seen from the perspective of individual regions often differs

substantially from the monetary policy conducted by the Fed. There are, however, no indications that Fed policy has favored any regions more than others.

The second chapter, by Gerald Carlino and Robert DeFina, also considers the empirical relationship between a common aggregate monetary policy and its regional impacts in the U.S. The authors employ VAR techniques to analyze how gross state products respond to an aggregate monetary policy shock represented by a shock in the federal funds rate. Carlino and DeFina find that there is considerable variation in the responses of state and regional outputs to a monetary shock. They then try to determine the source of these differential responses and conclude that the mix of interest sensitive and insensitive industries is a major factor in explaining the different regional responses. Other explanations, such as the mix of large and small banks and large and small firms, do not appear to have much explanatory power. Carlino and DeFina predict that industry mix will likely be a significant factor for determining how EMU countries will respond to a common European monetary policy. Based on existing industry structures, they estimate the future differences in monetary policy responses across EMU member states.

Sandra Hanson McPherson and Chris Waller, in Chapter 3, turn to the other large monetary union of North America, Canada. They examine whether or not changes in the volume of bank lending in a region 'cause' (in Granger's sense) regional income fluctuations and vice versa. Their theoretical analysis demonstrates that this should not be the case, if financial markets within a currency area were fully integrated. In earlier empirical work using data from U.S. regions, however, McPherson and Waller found that regional bank lending did 'cause' regional income fluctuations and vice versa. Using bivariate VAR models and Granger causality tests, McPherson and Waller show that such causality cannot be detected in data from Canadian regions. The authors attribute this result to the greater degree of financial integration in Canada during the sample period. While banking in the U.S. was subject to branching restrictions prohibiting banks to maintain branches in more than one state during the sample period, Canada has had national banking for nearly a century. The authors then argue that differences in bank regulations across EMU member states restrict geographical diversification of banks within the monetary union and conclude that this will likely be the source of differences in regional responses to the ECB's monetary policy actions.

Chapters 4 - 7 look at the issue of heterogeneous responses to a common monetary policy using data from the European countries. In Chapter 4, Andrew Hughes-Hallett, Laura Piscitelli and Theo Warmedinger (HPW) use Fair's multicountry structural econometric model, properly calibrated to match the parameters of the EMU economies, to study whether or not these economies will continue to converge after EMU takes effect. HPW then examine whether or not national fiscal policies exist which will stabilize the regional economies without creating significant spillover effects to other EMU countries. Their simulations reveal substantial differences in the effects of EMU on individual countries. Furthermore, the ability to use national fiscal policies to deal with undesired spillovers from a common monetary policy also varies across countries. Even a coordinated effort on the part of

fiscal authorities is shown to have limited success in stabilizing the regional effects of European monetary policy. In the end, HPW raise the question of whether the divergence of regional responses to a common EMU policy will create tensions that will lead to a breakup of the EMU.

Bernd Hayo and Birgit Uhlenbrock, in Chapter 5, study how German monetary policy impacted on different industries, in particular on two-digit level manufacturing and mining industries, in the past. Using VAR analysis, Hayo and Uhlenbrock find significant differences in industry output responses to monetary shocks. They also find significant differences in the response of relative prices for industrial output to a monetary shock, suggesting differences in market structure across industries. Then, following a similar approach as Carlino and DeFina, Hayo and Uhlenbrock look at how the industry mix across the 11 West German Länder to see if regions display different responses to a monetary shock. As in the U. S., the West German Länder exhibit substantial differences in their industry mix and thus the responsiveness of Länder output to a monetary shock.

In Chapter 6, Giorgia Giovannetti and Ramon Marimon follow the calibration literature and simulate the responses of artificial economies to monetary shocks in order to see how monetary union affects the performance of the artificial economies. Giovannetti and Marimon point out that a significant difference between France, Germany and the United Kingdom is in the way capital accumulation is financed. France and the U.K. rely much more on equity financing of investment, whereas Germany relies heavily on debt financing via the banking system. Consequently, they construct a two country, overlapping generations model with financial markets modeled to reflect the stylized facts regarding the debt/equity financing of investment. The key difference between bank finance and equity finance in the model is that banks are able to provide liquidity services via the conversion of illiquid long-term assets into liquid short-term assets. Because of these liquidity services, economies that rely on bank financing of capital have an easier time reallocating their portfolios in response to a monetary shock and thus are better able to smooth consumption in the face of a monetary contraction. From this model, "Germany" will not suffer as much consumption variability as "France", hence it may be more willing to use contractionary monetary policy than "France" to combat inflation. VAR analysis for Germany and France generate impulse response functions consistent with the theoretical model's predictions. The lesson from this chapter is that the structure of financial markets in each EMU country may be an important explanation for different regional responses to a common monetary policy action and may be a source of conflict over the conduct of European monetary policy.

Chapter 7, by Ivo Arnold and Casper De Vries, presents a model studying the future development of financial structures in the EMU. The authors show that financial structures can be expected to converge once the common currency has been introduced. This suggests that differences in the responses to the common monetary policy between the EMU member states, to the extent that they are caused by different financial structures, would become smaller over time. Obviously, the US

example shows that this depends importantly on regulatory policies and may take a long time to happen.

In Chapter 8, Jürgen von Hagen studies the voting games on the central bank council of a monetary union consisting of heterogeneous regions. Taking the different responses to monetary policy and the existence of regional shocks as a starting point, von Hagen asks how the resulting differences in monetary policy preferences among the regions are reflected in the common monetary policy. The author shows that the common monetary policy can translate regional shocks into aggregate shocks if the central bank council is dominated by representatives of the individual regions. At the same time, a central bank dominated by regional representatives delivers inefficient monetary policy responses to aggregate demand and supply shocks. The reason is that representatives of the individual regions wish to use the common monetary policy to stabilize their home regions rather than the aggregate economy of the monetary union. However, a central bank council dominated by regional representatives is also likely to achieve a smaller inflation bias than a council of central bankers appointed by the central or federal authority.

David Wheelock, in Chapter 9, looks at the historical evolution of the role of regional reserve banks in the US for Federal Reserve monetary policy. His chapter can be interpreted as a case study of the type of conflict between efficient macroeconomic stabilization of the monetary union on the one hand and low long-run inflation on the other hand suggested by von Hagen's paper. Wheelock argues that the Fed's inability to cope with the Great Depression must be attributed mainly to its commitment to the Gold Standard and the use of inappropriate theories about monetary policy than to its decentralized regional structure, although the latter did play a role. Wheelock also points out that a decentralized structure can be advantageous if it fosters debate within the central bank system. He concludes that the structure of the FOMC provided by the 1935 Banking Act, which assures a majority of the Board of Governors but allows the presidents of all 12 federal reserve banks to participate in the monetary policy debate, can be interpreted as a good compromise between these two aspects of decentralization. In a companion paper to Wheelock's contribution, Robert Hetzel, in Chapter 10, draws out some implications of the US experience for the design of the monetary policy strategy of the European Central Bank.

The final chapter in this volume, Chapter 11, is a case study of the implications for monetary policy of a potential break-up of a federation. Thomas Courchene and Marc-Antoine Laberge analyze the monetary policy options of Quebec in a potential secession from Canada, and the potential responses of the other provinces to Quebec's policy. Courchene and Laberge emphasize that the choice of monetary policy strategy has a large impact on the cost of secession and the cost of holding the union together. Thus, monetary policy is both affected by and influences the likelihood of a break-up of a monetary union with extremely uncommon regions.

The papers collected in this volume all support the conclusion that regional differences in the responses to a common monetary policy will make European

monetary policy especially difficult in the years to come. Such differences arise from a variety of sources, and they cannot be expected to be mere teething troubles that will disappear after a while. Even if they were ignored in the run-up to the EMU, Europe's central bankers and economic policy makers will have to learn how to cope with such differences in the future.

As editors of this volume, we would like to end with a few words of gratitude. We acknowledge the financial support from ZEI and the University of Kentucky that made the conference and the publication of its proceedings possible. Special thanks go to Heike Schnappertz for working hard to make the conference go smoothly, and to Hadya Eisfeld for her excellent editorial assistance.

Bonn and Lexington, June 1999

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