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One nation under the fed? The asymmetric effects of US monetary policy and its implications for the United States as an optimal currency area

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ABSTRACT

Is the United States best served by a single currency? This question is explored in this paper by looking at the regional effects of US monetary policy shocks through the perspective of the optimal currency area framework. Using monthly state-level data for the period 1983:1–2008:3, this paper finds that some regions of the United States during this time may have benefited from having their own currency.

"[T]he weakening labour markets in the sunbelt states are being offset by sharply falling jobless claims in rustbelt states... This poses a conundrum for the Fed as it determines interest rate direction: How do you interpret a split-personality labour market, and its inconsistent impact on growth and inflation?"

David Parkinson in "Sunbelt vs. Rustbelt Tug-of-War", July 7, 2007.

1. Introduction

Is the United States best served by a single central bank conducting countercyclical monetary policy? According to the optimal currency area (OCA) criteria, the answer is yes if the various regions of the United States share similar business cycles or have in place flexible wages and prices, factor mobility, fiscal transfers, and diversified economies.[1] In the former case, similar business cycles among the regions mean that a national monetary policy, which targets the aggregate business cycle, will be stabilizing for all regions. In the latter case, dissimilar business cycles among the regions make a national monetary policy destabilizing—it will be either too simulative or too tight—for some regions unless they have in place the above listed economic shock absorbers. Many, if not most, observers believe the United States fits these criteria and is a successful

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[1] The seminal work in the OCA theory comes from Mundel (1961), McKinnon (1963), and Kenen (1969). See Mongelli (2002) for a survey of the OCA literature.

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monetary union. As a result, the United States is often held up as a benchmark case of an OCA for other areas attempting to form a monetary union (Eichengreen, 1990; Bayomi and Eichengreen, 1993; Feldstein, 1997; Bordo, 2004).

But is the United States truly an OCA? The above quote implies that the Rustbelt and the Sunbelt regions of the United States may have benefited from having their own currencies and monetary policy in early-to-mid 2007. This suggestion that the United States might benefit from the use of regional currencies is consistent with Rockoff (2000) who concludes that the United States' OCA status is tenuous at best. Other studies also raise questions about the OCA status of the United States. Owyang et al. (2005) and Crone (2005, 2006) shows that business cycles continue to vary in non-trivial ways across US regions. Carlino and Defina (1998, 1999a, 1999b), Crone (2005) and Owyang and Wall (2006), meanwhile, find that monetary policy shocks generate large asymmetric effects across US regions. These findings imply that certain regions of the United States may fail to meet the OCA criteria. Kouparitsas (2001) examines this possibility directly and finds that three of the eight Bureau of Economic Analysis (BEA) regions are not in the dollar OCA. Looking at state employment business cycles, Partridge and Rickman (2005) similarly conclude the United States fails to meet the traditional criteria for an OCA. Far from being a closed case, then, the United States as an OCA remains an open question.

This paper provides further evidence on the OCA status of the United States. It does so by taking another look at the asymmetric effects of US monetary policy shocks on state economies. Previous studies in this literature have tried to explain the asymmetric effects of such shocks by examining whether the different transmission channels of monetary policy were more prevalent in certain regions. This paper takes a different approach by explaining the asymmetric effects of monetary policy shocks by way of the OCA criteria. Specifically, it regresses the asymmetric effects against measures of the OCA criteria and uses them to construct a decision rule that determines whether certain states would have benefited from having their own currency and monetary policy. The paper also looks at the source of economic shocks in each state and whether they are dissimilar enough to justify monetary autonomy. This approach is different than Kouparitsas (2001) who uses the response of regional economies to and the relative importance of common and idiosyncratic shocks to determine the dollar OCA.[2] This paper is also unique in several other ways. First, it makes use of a monthly data set of real economic activity at the state level. The use of this higher frequency data allows for a more complete picture of each state's economic response to a monetary policy shock. Second, previous studies have been beset with the challenge of having to deflate nominal regional economic measures, but without having an appropriate deflator to do so. Using the above data and a unique modeling approach this paper is able to overcome this challenge. Third, the modeling approach used in this paper allows for a consistent monetary policy shock to be estimated across all states. This paper, then, is able to show whether each state economy responds differently in a statistically significant way from the national economy to the same monetary policy shock.[3] Collectively, these innovations provide for fresh insights into whether the United States truly is an OCA. To be clear, though, this paper like most studies on the OCA only speaks to the potential gains for US regions having their own currency and does not address the issue of increased transaction costs.

The remainder of the paper proceeds as follows. First, the paper reviews the previous research on the asymmetric effects of US monetary policy on regional economies. Second, this paper formally outlines the estimation strategy and then uses it to find the state-level effect of monetary policy shocks. Third, after finding that US monetary policy shocks generate asymmetric effects this paper explains this variation using measures of the OCA criteria. Fourth, the paper uses these findings to assess what states of the United States may have benefited from having their own currency. Finally, the paper concludes with a discussion of the implications from these findings.

2. Previous research on the regional effect of US monetary policy shocks

This paper follows a number of studies over the past decade that have examined the regional effects of monetary policy shocks. Carlino and DeFina (1998, 1999a,b) provide the seminal papers in this literature. They estimate a series of vector autoregressions (VARs) in these papers to determine the impact of monetary policy shocks on regional and state economies. When looking at the state-level response (1999a,b), they specifically estimate 48 VARs for the 48 contiguous states for the period 1958:Q1–1992:Q4. In each VAR they include the following variables: real personal income for the state being considered, real personal income for the remainder of the BEA region containing the state being considered, real personal income for the seven other BEA regions, energy prices, core CPI, the index of leading indicators, and the federal funds rate. Carlino and Defina use the VARs to estimate cumulative impulse response functions (IRFs) of each state's real personal income from a shock to monetary policy (i.e. a shock to the federal funds rate) and find great variation among the states IRFs. In particular, the Great Lakes region is found to be the most adversely affected by monetary policy shocks while its impact on states in the Southwest and Rocky Mountain regions is the least affected of any area in the Unites States. Crone (2005) creates a new set of economic regions based on the similarities in state business cycles for the period 1959:Q1–1993:Q1 and uses them in a VAR identical to the one used in Carlino and DeFina (1998). Crone similarly finds the Great Lakes area to be the most adversely affected from a monetary policy shock while the area he calls the energy belt—comprised of portions of the BEA's Southwest

[2] Kouparitsas (2001) does estimate the effect of monetary policy shocks. His emphasis, however, is on common and idiosyncratic shocks in general and he does not attempt to systematically explain the asymmetric effects of monetary policy as is done in this paper.

[3] Kouparitsas (2001) also estimates a consistent monetary policy shock, but as noted earlier he does not try to explain the asymmetric effects of this shock.