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Leader of the pack? German monetary dominance in Europe prior to EMU

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ABSTRACT

In this paper, the monetary policy independence of European nations in the years before European Economic and Monetary Union (EMU) is investigated using cointegration techniques. Daily data is used to assess pairwise relationships between individual EMU nations and 'lead' nation Germany, to assess the hypothesis that Germany was the dominant European nation prior to EMU. By and large our econometric investigations support this hypothesis, and lead us to conclude that the only European nation to lose monetary policy independence in the light of monetary union was Germany. Our results have important policy implications. Given that the loss of monetary policy independence is generally viewed as the main cost of monetary unification, our findings suggest a reconsideration of the costs and benefits of monetary integration. A country can only lose what it has, and in Europe the countries that joined EMU — spare Germany — apparently did not have much to lose, at least not in terms of monetary independence. Instead, they actually gained monetary policy influence by getting a seat in the ECB's governing council which is responsible for setting interest policy in the euro area.

1. Introduction

On January 1, 1999, eleven countries adopted the euro as their common currency, transferring monetary policy responsibility to the newly established European Central Bank (ECB). It is generally maintained that by giving up monetary sovereignty, these countries relinquished monetary policy as an instrument of domestic policy. Was this loss of sovereignty however necessarily concurrent with a loss of monetary policy independence? The general perception of participation in such a monetary union is that national economies forsake monetary policy independence, and discussions are framed in terms of this cost. However, prior to European Economic and Monetary Union (EMU), many European nations were characterised as Bundesbank watchers, following the German central bank's policy movements. An important question is thus whether today's EMU nations enjoyed any monetary policy independence pre-euro? Because if not, then these countries had no independence to lose through monetary union, and have arguably gained policymaking influence through representation in the common Central Bank's monetary policy committee.

As a working definition of monetary policy independence we propose a country's ability to set its own monetary policy via interest rates. Hence, the absence of adjustment to any steady-state relationship between that country's interest rate and other countries' interest rates (and, indeed, the absence of any such relationship at all) might be interpreted as evidence in favour of policy independence: in setting interest rates, events within the economy alone influence policy. Both the null hypothesis of independence and the alternative hypothesis of lack of independence cover a whole realm of possibilities. A country is deemed independent if it can tailor its monetary policy according to domestic developments; this might be either because macroeconomic developments in other countries experiencing different output cycles have no or little impact on the domestic economy or because it employs sufficient capital controls to ensure it is not bound by capital movements in its setting of monetary policy. Conversely, a central bank might move in tandem with other central banks because their economies are experiencing common shocks, such as oil price shocks or a global financial crisis; any 'dependence' uncovered in this case may not be suggestive of any dependence on a particular country but simply a reflection of similar policy responses to similar economic developments. However, a perfect synchronisation of business cycles between countries that would induce identical optimal monetary policy responses of their respective central banks is rather unlikely.[2] Hence the existence of and speedy adjustment to a steady-state relationship with another countries' interest rate is evocative of monetary policy dependence nonetheless.

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[2] While there is dispute regarding the extent of output correlations across the euro area, there is a consensus that EMU members are far from displaying perfectly correlated business cycles. See, for instance, Hughes Hallett and Richter (2008); Montoya and Haan (2008); Gouveia and Correia (2008); and Afonso and Furceri (2007). Even if cycles were perfectly correlated, it is unlikely that central banks would use the identical policy model for setting interest rates, given that monetary policy transmission mechanisms tend to differ among economies.

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All of this holds implications for any econometric analysis seeking to uncover dependence patterns. Time-series econometrics has developed rapidly over the years to cope with the criticisms perhaps best encapsulated in both Yule (1926) and Lucas (1976); those of spurious significance, and of structural change. Naturally, progress is still to be made, but thankfully for the economist, he or she still has value to add: statistical processes must still be used appropriately, and interpreted suitably, meaning that while correlations and possibly causations can be uncovered, there still is a need for caution and consideration. The cointegration framework (Johansen, 1995; Juselius, 2007) allows additional insight beyond establishing steady-state relationships; it gives insight into which variables are adjusting to relationships, and which variables are driving relationships. This allows us to make further inference into the European interest rate relationships we estimate. Using this framework, we investigate monetary policy independence in the run up to EMU, and while the broad sweep of evidence presented supports the hypothesis of German dominance, and little independence for smaller European economies, we also highlight the somewhat uncomfortable example of Austria which emphasises, as always, the need for caution in interpreting the results of any study.

Cointegrating vectors play the role of steady-state relationships, and hence if such relationships exist between countries, and furthermore one country adjusts to this relationship, while another does not, then this is evidence in favour of monetary dependence of the adjusting country on the non-adjusting one. Edison and MacDonald (2003), who use a similar methodology, refrain from making monetary policy independence conclusions based on their work due to the difficulty of drawing inference on policy dependence from international interest rate movements. It could be argued that countries are simply responding to common shocks, perhaps induced by a third party. However, our modelling methodology enables us to detect the direction of dependence, and hence by considering pre-EMU economies in isolation we are able to detect the direction of interest rate movements in Europe, and hence identify whether or not Germany was leading them. Hence a lack of independence in the case of Europe is sufficient to argue our point relating to Germany's dominance in policymaking, and the subsequent gains and losses from monetary union, regardless of the nature of those shocks. It is surely the case that each country in our sample was affected by idiosyncratic shocks during the sample period, but if cointegration exists between each country rate and the German rate, then these shocks must have been of secondary importance to the country, as their dependence on Germany dictated that they must adjust to what was happening in Germany. This approach means that if we find countries that do not adjust (we include the UK as a test case), then there are at least three noteworthy implications: the country is impacted by idiosyncratic shocks that distinguish it from Germany; these shocks are large and require remedial action; and this country has the independence to react to these shocks in the appropriate manner. If however, none of these implications apply to a European country, that country can reasonably be described as dependent on Germany in monetary policy terms.

An important, if simple, contribution to the literature is made in our paper by adding a time trend to the cointegrating relationships in our models.[3] If, as must have happened in order for EMU to have begun, convergence took place, then this convergence needs to be factored into cointegrating relationships. Convergence can simply be captured by entering a linear time trend into our cointegrating space; this acts as a wedge between the two country interest rates that over time decreases as the two interest rates begin to move more and more closely together. Furthermore, if no clear convergence occurred (perhaps in the case of countries whose interest rates are very close to Germany's throughout our samples), then this time trend may be insignificant and then can be restricted to zero. Thus there is little cost to adding a time trend into our models as the cointegration theory is developed to allow such deterministic terms and still generate accurate results, while the benefit is potentially great: cointegrating relationships that would otherwise have been missed may be uncovered with the addition of this term.

The remainder of the paper is organised as follows. The next section reviews the literature on monetary policy independence. We then discuss our econometric strategy, and present our results. The final section concludes.

2. Monetary policy independence measurement in the literature

This paper builds out of two literatures, those of international economics and applied time series analysis, broadly speaking. Considering firstly the theoretical literature, monetary policy independence is framed within the context of what is described as an "impossible trinity": a country is unable to maintain an open capital account, a fixed exchange rate and an independent monetary policy simultaneously. This implies a "possible duality", where only two of the three can be maintained at the same time. Recently, however, doubts have been raised on this conventional view that exchange rate flexibility provides insulation for the conduct of monetary policy. That is, in a world of globalised financial markets even countries with flexible exchange rate regimes might be limited in the independent conduct of monetary policy — possibly even if they employ capital controls. In this paper we do not specifically investigate the validity of the impossible trinity hypothesis or the factors that influence monetary policy independence.[4] Instead, we concentrate on whether countries that were part of the European Monetary System (EMS) did or did not enjoy monetary policy independence.

The topic of monetary policy independence has been investigated empirically by a number of authors, mostly in a European context. In what became known as the German dominance hypothesis, Giavazzi and Giovannini (1989, p. 63) maintain that "Germany is the center country [of the EMS]; it runs monetary policy for the whole system, similarly to the United States during the early Bretton Woods years".[5] Von Hagen and Fratianni (1990) and Fratianni and von Hagen (1990, 1992) consider how much discretion was available to European countries that entered the exchange rate mechanism (ERM) as part of the EMS during the 1980s and reject a strict form of German dominance in the EMS. They argue that capital and exchange controls as well as the possibility of parity realignments within the ERM acted as "safety valves" to disanchor monetary policies of the other EMS member countries from the relatively restrictive policy course of the Bundesbank.[6] Edison and MacDonald (2003), who include the 1990s in their analysis, concur. According to Edison and MacDonald, EMS member countries that had adopted credible monetary policies also had some leeway to pursue an independent monetary policy — even with fixed exchange rates — at least over certain time horizons. They find that, for example, the Netherlands had over a year in which it could deviate from German interest rates.

Using a multivariate cointegration framework, Kirchgässner and Wolters (1993, 1995) back the hypothesis of German monetary dominance within the EMS. This hypothesis is also upheld by Volz (2009) who estimates monetary policy rules for European countries and the US for the period ranging from August 1971 to December 1998, i.e., from the breakdown of the Bretton Woods system to the launch of the euro. His results suggest that the monetary policy

[3] The simple inclusion of a trend may be argued to be unimportant. However, omitting a trend term when one exists in the data generating process will almost certainly result in a wrong cointegrating vector being discovered, if indeed one is found. If a relationship exists without a trend, the trend will simply be found to be insignificant, and hence our inclusion is useful and important for the general discussion surrounding EMU and convergence.

[4] This we actually do in a sister paper. See Reade and Volz (2010).

[5] See also Fischer (1987) and Russo and Tullio (1988).

[6] De Grauwe (1989); Cohen and Wyplosz (1989) and Weber (1991) come to similar conclusions.