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Did the Bundesbank react to the US dollar exchange rate?

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ABSTRACT

This study explores monetary policy conduct by the German Central Bank just after switching to floating exchange rates and before adopting the European single currency. With the world economy going through the 'great inflation' first, and the 'great moderation' then, the focus is on the DM/US dollar exchange rate, as a proxy of external constraints. A Taylor-type interest rate rule with a sufficiently high inflation coefficient emerges as an equilibrium relation in a Vector Error Correction model, and operates as a reaction function. The exchange rate enters significantly and the dynamics generated are consistent with the derived rule and the macroeconomic theory. Hence, I argue that the Bundesbank kept an eye on the exchange rate and remained devoted to the long-standing policy of price stability.

1. Introduction

Did the German central bank react to the US dollar exchange rate? Shortly after the breakdown of the system of fixed exchange rate regime and before adopting a single currency together with eleven other European countries, the Deutsche Bundesbank (DBB henceforth) has been a leading monetary authority both at the European level and internationally. Its record in terms of the domestic inflation rate is indisputably excellent; and its strategy is extensively looked into to discover worthwhile features of policy-making.

With the international economy going through extraordinary circumstances, in their nature and consequences for monetary policy setting, the present paper focuses on the DM/US dollar exchange rate, as a proxy of the DBB's external constraints. More specifically, during the period from 1974 to 1998, the world economy goes through the 'great inflation' first, and the 'great moderation' then. In the US economy, the disinflation of the early 1980s, 'the most widely discussed and visible macroeconomic event of the last 50 years of U.S. history' according to Goodfriend and King (2005), materialises after a change in the chairmanship of the Federal Reserve (Fed henceforth). In the meantime in Europe, the European Monetary System (EMS) comes into existence setting off the road to the European Monetary Union and its single currency.

During this period the German monetary policy remains unchanged in principle. According to its statute, the DBB is bound to 'safeguard the currency'. Operationally it sets targets for monetary growth that implicitly incorporate goals for inflation. But is the internal or the external value of money that the DBB seeks to stabilise? Neumann (1999) explains there is an 'inherently conflicting relationship between the targets of domestic monetary stability and exchange rate stability' that Baltensperger (1999) characterises as 'irresolvable' and connects with the independence of the central bank from the government, since it is the latter that ties the currency into an exchange rate system. Deutsche Bundesbank (1999) offers a detailed analysis of monetary policy in Germany and points out instances when external considerations influence the DBB's decisions and others they do not. These disparities are also reported by, for

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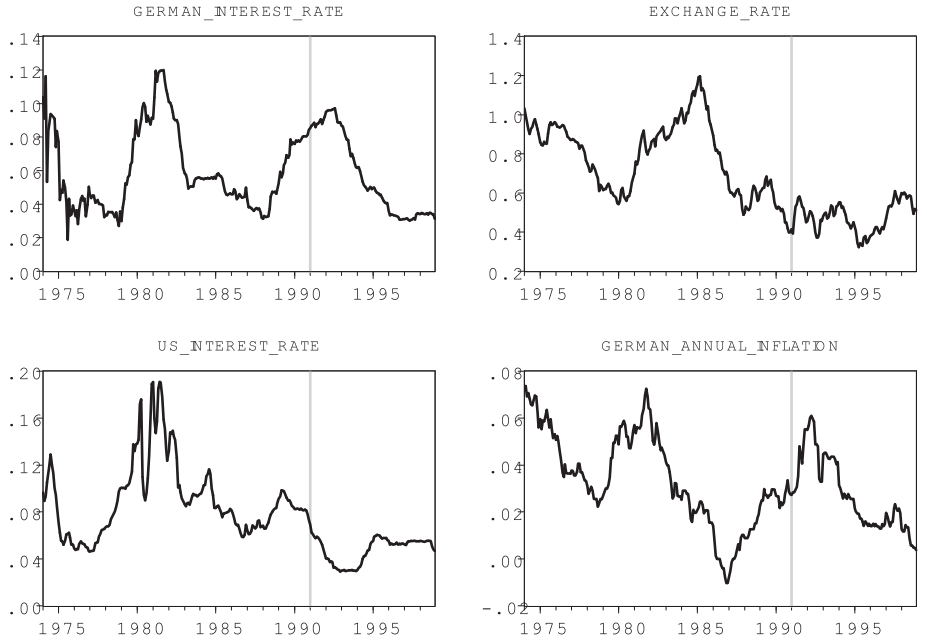

Fig. 1. Time series in levels.

instance, Mishkin and Posen (1997), Bordo, Humpage, and Schwartz (2010) and Germann (2014).

As regards empirical work, the exchange rate often appears as an additional variable of the Taylor (1993) rule applied on German data. The most famous study is Clarida, Gali, and Gertler (1998), who estimate DBB reactions functions for the period from 1979 to 1993 and find that the US rate and the real exchange enter significantly and with the right sign albeit with small values. For the latter period, i.e. from 1993 to 1998, Eleftheriou, Gerdesmeier, and Roffia (2006) propose a specification including the exchange rate together with a money stock variable. And for the entire period, Smant (2002), Bohl, Siklos, and Werner (2004), Molodtsova, Nikolsko-Rzhevskyy, and Papell (2008), Mark (2009) and Hoffmann (2013) also present exchange rate augmented interest rate rules. However, all the above studies estimate one equation rules with the pitfalls discussed in Eleftheriou (2009).

The present study explores the relevance of the Taylor (1993) rule within a framework that models the stochastic properties and the dynamics of the variables following Eleftheriou (2009). With data from a leading economy, it contributes to our knowledge on monetary policy setting in an open economy by incorporating the bilateral exchange rate in a long-run target path and exploring the generated dynamics. The next section discusses chief relevant events of the sample period and plots the series. The third section describes the integration and cointegration properties of the data as well as the econometric model, and details the estimation results. The last section summarises and concludes. In a nutshell, it is demonstrated that the DBB kept an eye on the developments of the US economy, but remained at all times devoted to the long-standing policy of price stability.

2. Discussion

The question is whether the German short term rate reacted to the evolution of the exchange rate. Or, in other words, if the Bundesbank's monetary policy setting can be described by an interest rate rule, would this include the US dollar exchange rate, or just indicators describing the domestic economy? And if this so, are the generated dynamics consistent with the expected international linkages? This is an interesting issue-albeit only partially addressed-as the involved economies are two major participants of the international scene with their central banks leading the way. To better understand the period under study, Fig. 1 plots the interest rate series of both countries, the bilateral exchange rate and the German inflation rate measured in annual terms and Table 1 reports some bilateral correlation coefficients.[1] Additionally, Table 2 collects some key events in chronological order.

Evidently, until the beginning of the 90's, i.e. around the German unification, there is a direct relation among the variables. The sample starts in 1974 and the first years are referred to as the ‘great inflation’ or ‘stagflation’ period as, due to the increases in the oil price, inflation hits high values and economic activity weakens. At the time, US inflation is considerably and persistently above the German one, but the Fed sets its rate not much higher than the DBB, this leading to a major depreciation of the American currency. And while the DBB's policy is well-established, the Fed amends its own.

In more detail, Von Hagen (1999) reports that the DBB intervenes in the foreign exchange market within the European currency

[1] Note that the posterior analysis employs monthly inflation. As for the correlation, various combinations of starting and end dates are checked, but only the relevant ones are reported.