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Does the nominal exchange rate regime affect the real interest parity condition?

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ABSTRACT

The real interest parity (RIP) condition combines two cornerstones in international finance, uncovered interest parity (UIP) and ex ante purchasing power parity (PPP). The extent of deviation from RIP is therefore an indicator of the lack of product and financial market integration. This paper investigates whether the nominal exchange rate regime has an impact on RIP. The analysis is based on 15 annual real interest rates and covers a long time span, 1870–2006. Four subperiods are distinguished and linked to fixed and flexible exchange rate regimes: the Gold Standard, the interwar float, the Bretton Woods system and the current managed float. Panel integration techniques are applied to increase the power of the tests, where cross section correlation is embedded via common factor structures. The results suggest that RIP holds as a long run condition irrespectively of the nominal exchange rate regime. However, adjustment towards RIP is affected by both the institutional framework and the historical episode. Half lives of shocks tend to be lower under fixed exchange rates and in the first part of the sample. Although barriers to trade and capital controls have been removed, they did not lead to lower half lives during the managed float.

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1. Introduction

The real interest parity (RIP) condition combines two cornerstones in international economics, uncovered interest parity (UIP) and ex ante purchasing power parity (PPP), see Marston (1995) and MacDonald and Marsh (1999). Therefore, the degree of deviation from parity can serve as an indicator for the lack of products and financial market integration. RIP states that expected real returns

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are equalized across countries. This proposition has important implications for investors and policy-makers. If national real interest rates converge, the scope for international portfolio diversification is reduced. If the linkages in international real interest rates are almost complete, national stabilization policies cannot systematically affect the economy through the real interest rate channel (Arghyrou, Gregoriou, & Kontonikas, 2009).

Because of the increased integration in international product and financial markets, one might expect that RIP is approximately in line with reality. But the evidence is less supportive. Early papers like Mishkin (1984), Cumby and Obstfeld (1984) and Cumby and Mishkin (1987) have overwhelmingly rejected the condition for the short run, see Chinn and Frankel (1995) for a review. Despite the negative result, RIP might be well interpreted as a long run anchor for real interest rates, if the deviations from the condition are stationary. However, previous papers have arrived at different conclusions. While Meese and Rogoff (1988) and Edison and Pauls (1993) detected a unit root, Cavaglia (1992) and Wu and Chen (1998) reported mean reversion in real interest differentials. Gagnon and Unferth (1995) extracted a world real interest rate by means of factor analysis that is highly correlated with the national counterparts. Ferreira and Léon-Ledesma (2007) reported evidence in favour of RIP in a sample of industrialized and emerging countries. Their analysis reveals a high degree of market integration for developed countries and highlights the importance of risk premia, if emerging markets are involved. According to Dreger and Schumacher (2003) and Arghyrou et al. (2009), RIP can be seen a long run attractor for national real interest rates in the European Monetary Union.

On the other hand, real interest rates are persistent over time, probably due to price stickiness (Rapach & Wohar, 2004; Sekioua, 2007). Real interest rate convergence is likely a gradual process, that can be subject to nonlinearities and structural breaks, see Goodwin and Grennes (1994), Holmes (2002), Mancuso, Goodwin, and Grennes (2003), Camarero, Carrion-i-Silvestre, and Tamarit (2006). The results may also depend on the maturities under study. Fountas and Wu (1999) and Fujii and Chinn (2002) have stressed that the evidence is more favourable with RIP if long term interest rates are involved. In contrast, Wu and Fountas (2000) reported convergence for the short term rates.

The aforementioned studies are restricted to the period after the collapse of the Bretton Woods system. Therefore, the evidence might be blurred by singular events such as oil price hikes and shifts in monetary policies. Moreover, there is some indication that the nominal exchange rate regime might be not neutral for RIP. Eventually, the condition could perform better if exchange rates are fixed. The argument can be stated both for the PPP and UIP ingredient. If prices are sticky, real exchange rates almost mimic the time series properties of nominal exchange rates (Mussa, 1986). As the latter behave like random walks in flexible regimes, PPP is likely violated. In fact, the evidence tends to be more in line with PPP for fixed rather than for flexible nominal exchange rates (Sarno, 2005). A similar point can be made for the UIP relationship. Frankel, Schmukler, and Servén (2004) have argued that national nominal interest rates respond more slowly to changes in their international counterparts in flexible regimes, due to a higher degree of monetary independence.

On the other hand, the integration of product and financial markets may provide increasing support for RIP, see Goldberg, Lothian, and Okunev (2003). Barriers to foreign trade and capital controls have been substantially removed over the last decades. Country specific risks can be diversified in the portfolios of international investors. In addition, critical parameters like the degree of price stickiness might change over time. Note that economic integration is by no means a continuous process. International capital controls have been more pervasive under the Bretton Woods system when compared to the classical Gold Standard.

Overall, RIP might be primarily affected by historical periods and not by institutional arrangements for the nominal exchange rate. See Grilli and Kaminsky (1991) for similar arguments regarding the time series properties of real exchange rates. Note that the periods can be also classified according to the regime of capital restrictions. While capital moved rather freely under the Gold Standard and current floating system, massive controls existed in the interwar period and the Bretton Woods era.

This paper explores whether or not the nominal exchange rate regime affects the long run validity of the RIP condition, and whether an impact exceeds the one arising from integrated product and financial markets. The analysis is built upon a comprehensive dataset based on 15 annual real interest rates and covers a long time span, 1870–2006. Four subperiods are distinguished and linked to fixed and flexible exchange rate regimes: the Gold Standard, the interwar float, the Bretton Woods system

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