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Exchange rate volatility and regime change: A Visegrad comparison

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We analyze exchange rate volatility in the Visegrad Four countries during the period in which they abandoned tight regimes for more flexible ones. We account for path dependency, asymmetric shocks, and movements in interest rates. In addition, we allow for a generalized error distribution. The overall findings are that path-dependent volatility has a limited effect on exchange rate developments and that the introduction of floating regimes tends to increase exchange rate volatility. During the period of flexible regimes, volatility was mainly driven by surprises. Asymmetric effects of news tend to decrease volatility under the floating regime. Interest differentials impact exchange rate volatility contemporaneously under either regime, although we find no intertemporal effect of interest differentials. *Journal of Comparative Economics* **34** (4) (2006) 727–753. CERGE-EI (a joint workplace of Charles University and the Academy of Sciences of the Czech Republic), P.O. Box 882, Politických vězňů 7, 111 21 Prague, Czech Republic; WDI at University of Michigan Business School, USA; CEPR, London, UK; Faculty of Social and Economic Sciences, Comenius University, Odbojárov 10/A, P.O. Box 129, 820 05 Bratislava 25, Slovak Republic.

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1. Introduction

The volatility of exchange rates under different regimes has been studied extensively in the literature.[1] Since the pioneering work of Mussa (1986), conventional wisdom indicates that exchange rate volatility is greater under a flexible regime than that under a fixed arrangement. However, the measurement of volatility has engendered much debate with the approach shifting from the use of standard deviation towards the use of foreign exchange options and conditional heteroskedasticity type models. Exchange rate volatility and its measurement take on new importance in the context of the transition process in the Central and Eastern European (CEE) countries and their integration into the European Union.

Since the early years of transition, most of the advanced reformers among CEE countries have developed independent, autonomous monetary policies. Concurrently, they have departed from fixed exchange rates by applying various exit strategies at different times and with different intensity and have moved towards a type of inflation targeting as a policy instrument, as Orlowski (2001) reports.[2] In addition, economic integration brought increased international trade openness. Égert and Morales-Zumaquero (2005) document that exchange rate volatility weakens exports with the impact varying across sectors and across CEE countries; Babetskii (2005) shows that a decrease in exchange rate volatility has a positive effect on demand shock convergence. On the institutional level, exchange rate stability is defined as one of the Maastricht criteria for monetary integration.[3] Orlowski (2003) stresses that candidate countries for the Economic and Monetary Union (EMU) accession must demonstrate their capability to manage inflation and the exchange rate risk premium as a necessary prerequisite for successful monetary convergence. Hence, Orlowski (2004) argues that diminishing exchange rate risk is a key criterion for evaluating currency stability and, thus, the effectiveness of monetary convergence to the euro.

In this paper, we analyze exchange rate volatility in the four Visegrad countries, i.e., the Czech Republic, Hungary, Poland, and Slovakia, during the period in which they were abandoning tight regimes in favor of more flexible ones.[4] In analyzing exchange rate volatility, we account for path dependency, asymmetric shocks, and movements in interest rates. We find that introduction of floating regimes tends to increase exchange rate volatility, which conforms to conventional wisdom. Moreover, the degree of persistence in exchange rate volatility differs with respect to currency but remains at a similar level under the floating regime. Furthermore, the effect of

[1] Mussa (1986), Stockman (1988), and Papell (1992) are examples of pioneering work.

[2] These events occurred relatively swiftly, often during turbulent periods of economic developments and conflicting monetary policies, which undoubtedly affected exchange rate volatility.

[3] The Maastricht criteria require that a country's currency should have participated without stress in the Exchange Rate Mechanism (ERM) for at least two years prior to being allowed to adopt the euro.

[4] As early as December 1991, the former Czechoslovakia, Poland and Hungary signed the European Agreement with the European Union. These countries have striven to establish a workable framework for international trade and cooperation in order to facilitate the transition process. Their effort was institutionalized in March 1993 in the form of the Central European Free Trade Agreement (CEFTA). In addition to the four Visegrad countries, the agreement was later signed by Slovenia, Bulgaria and Romania. On a broader scale, these four countries established a framework for political cooperation by signing the Visegrad agreement. In 1995 or 1996, each country applied for EU membership and they all became members in 2004.