Policy Brief

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Sources of Real Convergence in Emerging Markets

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The conduct of monetary policy in a small open economy is significantly influenced by the assessment of monetary conditions that consists of comparison of the real exchange rate and interest rate to their corresponding equilibrium levels. Thus, the assessment of the equilibrium real convergence (speed of the real exchange rate appreciation) represents a starting point for evaluating the state of monetary conditions. A misjudgment of the speed of real convergence generates higher volatility in macroeconomic variables than would be necessary. For instance, objectively higher than expected equilibrium speed of real convergence would imply looser monetary conditions than intended – due to looser exchange rate component. In effect, the actual inflationary pressures would be higher than expected and future policy reaction would need to be more aggressive in order to maintain price stability.

Equilibrium speed of economic convergence of emerging markets in Central and Eastern Europe (CEE) towards the developed West has been predominantly judged using the already standard paradigm of real convergence as formulated by Harrod-Balassa-Samuelson (HBS). The HBS model basically explains the convergence through the size of excessive inflation in non-tradable goods sector over tradable goods sector between countries. However, many recent empirical studies have increasingly concluded that the real convergence due to non-tradable sector effect is rather minor in the CEE countries. For instance, the average yearly pace of real convergence attributed to HBS effect in the Czech Re-

Chart 1. Real Exchange Rate Appreciation CZK/DEM
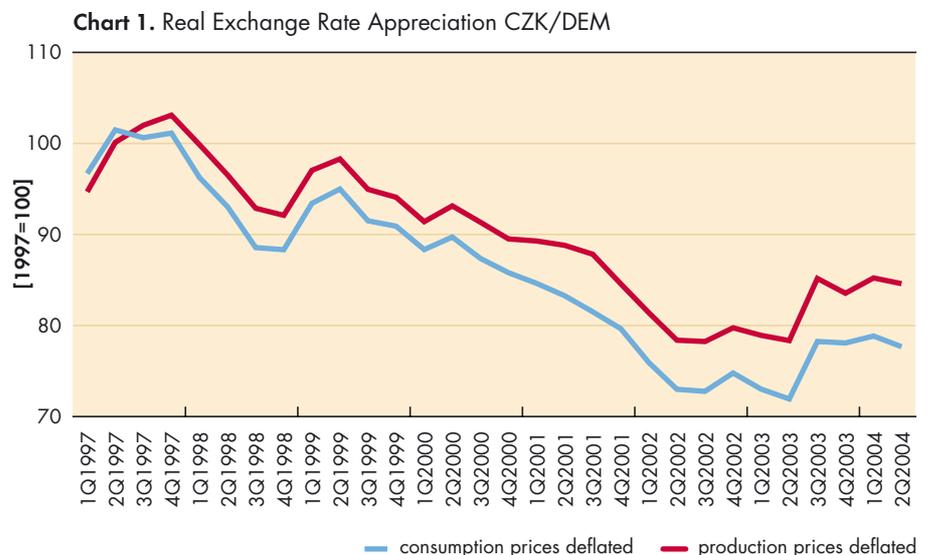
public, Slovakia and Slovenia *vis á vis* Germany in 1997–2002 was found below a third of a percentage point. Although puzzling, this evidence appears highly intuitive as there is no major difference between real exchange rates deflated by consumer and producer prices – see Chart 1 for the case of the Czech Republic. As can be seen from the Chart, the pace of real exchange rate appreciation deflated by production prices (approximating tradables) exhibits almost the same pace as that for consumer prices.

Thus, in our study, we enrich the HBS model by relaxing the assumption about the constant real exchange rate in tradable goods sector. We analyze factors that determine the dynamics in the exchange rate for tradable goods and discover basically two separable parts. One part is a *temporary disparity* in prices charged by the same producer on different markets that is due

to pricing to market, transportation costs, etc. The other part consists of the *structural trend* that is driven by a change in perception of the marketed domestic goods on both the domestic and foreign markets. The positive structural trend represents an improvement of the image and quality of goods produced in an emerging market. It is revealed through an increasing demand for these products at any level of price i.e., through a continuous outward shifting in both the domestic and foreign demand for domestic products, ceteris paribus. In other words, the quality improvement of domestic relative to foreign products must be reflected in continuous increase in prices of domestic tradable goods relatively to foreign ones (improving terms of trade), however, without loss in exported quantity. The empirical evidence suggests that indeed, this tendency materialized. For instance in the

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Table 1: Trade balance (machines, tools, and cars) [in bln CZK]

| Year | Total | y-o-y change in balance | |
		Physical effect	Price effect
1997	23.6	11.8	11.7
1998	50.9	28.4	22.5
1999	17.2	16.5	0.8
2000	-0.4	0.1	-0.5
2001	14.7	10.0	4.6
2002	44.8	41.3	3.5
2003	9.7	-4.9	14.6
2004	65.2	52.1	13.1

Czech Republic, the machines, tools and cars sector, that recorded the strongest real exchange rate appreciation, almost exclusively generated the whole improvement in the overall trade balance during 1997–2004. The average yearly improvement in the trade balance in this sector reached CZK 23 bln. and was simultaneously caused by an improvement in the physical quantity balance and the terms of trade. In larger part it was due to quantity improvement (CZK 14.7 bln.) and in the remaining part it was due to the price effect of improving terms of trade (CZK 8.3 bln.), for details, see Table 1.

Therefore, we propose evaluating this disparity first and subtracting it from the real exchange rate for tradables, hence yielding the equilibrium pace of real convergence in tradables. By combining the quality effect and the HBS effect we can judge the total equilibrium pace of real convergence in emerging markets. Table 2 summarizes the implied findings on relative convergence to Germany for the Czech Republic, Slovakia, and Slovenia in 1997–2002. In all three considered countries, the pace of real equilibrium convergence to Germany is much higher than predicted by standard theory built on the HBS model. The total convergence based on the HBS model, extended for convergence in tradables, ranges from 1 to 3 percentage points per annum and thus confirms that the CEE countries converge at least five times faster then the original HBS model would imply.

Omitting a possibly important part of the total pace of real convergence, the central banks could generate substantially higher and costly volatility in macroeconomic variables and thus complicate the further convergence process. Therefore, the proposed extension of the HBS model is potentially very important for precise evaluation of monetary policy stance in emerging markets.

Table 2: Yearly convergence

Country	Total effect	Quality effect	HBS effect
Czech Republic	3.00	2.90	0.10
Slovakia	1.06	0.80	0.26
Slovenia	2.05	1.70	0.35

Note: Data represents average real convergence over 1997–2002; in percentage points.

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