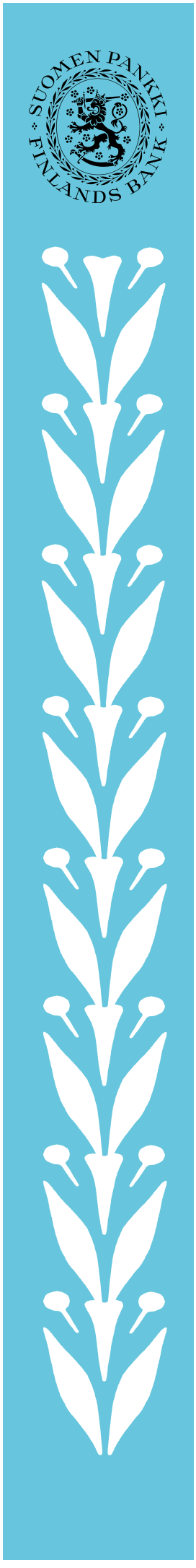

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PETER BACKÉ AND JARKO FIDRMUC

The Impact of the Russian Crisis on Selected Central and Eastern European Countries

Abstract

The paper examines the impact of the Russian crisis on five Central and Eastern European countries (the Czech Republic, Hungary, Poland, Slovakia, and Slovenia) in 1998 and 1999. The analysis starts by discussing trade effects and their impact on GDP developments. Subsequently, the focus turns to the financial channel. After a review of immediate and temporary financial contagion effects, the medium-term impact on real interest rates and its implications for investment, consumption and output are scrutinized. Finally, the paper appraises the policy measures that were taken and the policy discussions that unfolded against the backdrop of the Russian crisis.

Key words: Financial crisis, contagion effect, Central and Eastern Europe

1 Introduction

On August 17, 1998, the Russian Federation devalued the ruble and declared a partial default on its debt. The financial and economic turbulences the country experienced in the wake of these measures have been dubbed "the Russian crisis." The turmoil in the Russian Federation had worldwide ramifications. Not only did it affect Russia's trading partners. The default also upset international financial markets, with significant spillover effects on a number of emerging market economies. The purpose of this study is to analyze the effects the Russian crisis has had on five Central and Eastern European countries, namely on the Czech Republic, Hungary, Poland, Slovakia and Slovenia (CEEC5).

There are two main channels of transmission by which a crisis in one country can spread to other economies: the foreign trade and the financial channel.[1] In this study, we try to quantify both trade and financial effects in the short and medium run. We start from the hypothesis that, in contrast to the Baltic States,[2] the overall impact of the Russian crisis on the CEEC5 has been relatively small. In order to demonstrate this, we try to quantify the effects of the Russian crisis and, in doing so, our approach focusses, in principle, on the upper bound of what could conceivably be attributed to the events, based on/taking into account historical experience. This is particularly true for our calculations of the trade effects of the Russian crisis. The simulations we undertake to gauge the impact of real interest rate developments are done for a broader range of possible settings, as the link between these developments and the Russian crisis is more intricate. Here, the upper edge of the range of interest rate increases we consider as having possibly been induced by the Russian crisis deliberately represents an outright maximum value to provide insight into a theoretical worst case.

The paper is organized as follows: We start out by discussing the impact on the foreign trade of the CEEC5 in section 2. Subsequently financial market effects are examined in section 3. Based on this analysis, section 4 seeks to quantify roughly the impact real interest rate developments instigated by the Russian crisis have had on the development of the real economy in the countries under review. Section 5 outlines the policy responses the CEEC5 have taken in reaction to the Russian crisis as well as the related policy debates. The paper ends with brief conclusions.

2 The trade channel

The Russian crisis influenced the development in the CEEC5 already in the third and fourth quarters of 1998. One of the channels by which the impact of the crisis fed through was the trade channel, mainly by dampening the exports of these countries to Russia. The effects of the export collapse to Russia were compounded by the economic slowdown in the EU, especially in Germany, in the fourth quarter, which for many of these countries remains the most or one of the most important export destinations.[3] It is worth emphasizing that a significant deceleration of growth in the EU can exert a much stronger potential impact on growth in the five countries than economic developments in their other trade partners, due to the high share of exports to the EU in total exports of each country (typically in the order of 50% to more than 70%).

The CEEC5 have reoriented their foreign trade from the former CMEA (Council of Mutual Economic Assistance) area to the European Union and other developed countries since the beginning of the economic reforms in these countries. At the end of the 1980s, the former Soviet Union was the most important trade partner of the CEEC5. Russia supplied the raw materials and energy to and imported manufacturing products from the CEEC5. However, these trade flows were based on central planning within the CMEA. The quantities and prices were set centrally by the communist governments and the products did not account for the needs of final consumers. The quality of the products was generally very low. As a result, the

dissolution of the CMEA and the output declines in both Russia and the CEEC5 went in parallel with strong declines of trade between the CEEC5 and Russia at the beginning of the economic reforms. However, as Cheikbossian and Maurel (1998) show, the decline of trade among the CMEA countries had started already in the mid 1980s.

After a severe contraction in the early 1990s, the decline in trade volumes between Russia and the CEEC5 seemed to bottom out mostly in 1994. Between 1995 and 1997, exports of the five selected countries to Russia increased on average by about 17% in USD terms annually. However, this trade growth was reached mainly by Poland. Polish exports to Russia increased by 35% annually between 1994 and 1997. The exports of the Czech Republic to Russia also rose by about 12% annually between 1995 and 1997. In turn, the exports of the other three countries to Russia stagnated in this period. Nevertheless, there were several signs of a revival of exports to Russia (shorter periods with trade growth) also in these countries. Clearly, the recovery of exports to the Russian market helped to speed up growth in the CEEC5. However, the potential for further trade growth beyond the levels achieved in 1997 is fairly limited.[4]

In 1997, Russia's share in overall CEEC5 exports was between 3.4% (Czech Republic) and 8.4% (Poland). Due to this relatively low level of trade with Russia at the onset of the crisis, it was expected in the first assessments that the trade impact of the Russian crisis on the CEEC5 would be rather small, with Poland perceived as being likely to be more affected than the other countries under review here.[5]

How large was the effect of the Russian crisis on trade of the CEEC5 with Russia? According to the UN World Trade Database, the exports of the five selected countries to Russia declined on average by 25.8% in 1998.[6] The differences between the countries under review were significant. Whereas the Czech Republic faced relatively low trade losses (-11.6%) in 1998, the decline of Polish exports (-25.9%) corresponded to the regional average. Slovene exports to Russia decreased by 27.9%, while the most pronounced export declines were recorded in Hungary (-32.1%) and in Slovakia (-38.2%).[7]

In spite of the relatively high magnitude of trade losses, their effects remained low in terms of the CEEC5 GDP (see Table 1). Export losses (exports in 1998 as compared to the level of the previous year) remained below three quarters of a percent of GDP (in USD terms) in all CEEC5.

Table 1: Export Losses [a] of the CEEC5 to Russia in 1998

	Share of Russia in total exports	Export decline	Nominal GDP		Export losses		Effect expressed in terms of GDP [b]
	%	%	USD million	%	USD million	%	ppt of GDP
Hungary	5.1	32.1	47,836.8	16.2	304.1	26.0	-0.64
Poland	8.4	25.9	150,429.8	51.1	557.4	47.7	-0.37
Czech Republic	3.4	11.6	56,377.7	19.1	89.4	7.7	-0.16
Slovakia	3.7	38.2	20,369.3	6.9	125.6	10.8	-0.62
Slovenia	3.9	27.9	19,560.5	6.6	91.1	7.8	-0.47
CEEC5		25.8	294,574.2	100.0	1167.5	100.0	-0.40

Notes: [a] Difference of exports to Russia in 1998 and 1997; [b] export losses as a share of GDP (in percentage points).

Source: UN World Trade Database, EBRD Transition Report 1999

The ratio of export losses to GDP can be taken as an approximate indicator of the trade effects of the Russian crisis on the CEEC5 because it shows the difference to the GDP level which could have been reached if exports to Russia had remained at the level of the previous year. Of course, the impact would have been lower if some of the former exports to Russia could have been redirected to other export markets. But, due to the structure (and the quality) of goods exported to Russia by the CEEC5 (which is discussed in more detail below), the potential for trade redirection remained limited. Moreover, *all* countries affected have tried to redirect their Russian exports. Therefore, the Central and Eastern European producers faced increased competition on foreign markets and also on their domestic markets. Moreover, tightening competition has led, in some cases, to the reintroduction of trade barriers. Developments in the Central European Free Trade Association (CEFTA)[8] area are a case in point. In fact, attempts to redirect the exports of some sensitive products from Russia to other countries outside the European Union (which protects its market in these areas) produced a significant shock for trade within CEFTA which has, in some instances, reversed the process of trade liberalization among participating countries.[9] In general, the effects of trade redirection after the Russian crisis were ambiguous. Alternatively, such developments can be viewed as additional gains or losses in trade with other countries.

The distribution of the negative trade impact of the Russian crisis among the CEEC5 is noteworthy. Hungary and Slovakia absorbed the most significant decline of exports to Russia, which amounted to 0.6 percentage point of GDP of these countries in 1998. Slovenia, remarkably, also faced an export decline by nearly 0.5 percentage point of its GDP. In turn, Polish losses remained slightly below 0.4 percentage point of GDP in 1998. The decline of Czech exports to Russia remained below 0.2 percentage point of Czech GDP.

The actual size of the decline each country suffered was determined, to a considerable extent, by structural factors. CEEC5 exports to Russia included a relatively high share of so-called sensitive products. Most importantly, the agricultural exports accounted for somewhat more than one third of overall exports of the selected Central and Eastern European countries in 1997. For Hungary and Poland, this figure was even higher, amounting to nearly 45%. In the wake of the Russian crisis, the agricultural exports declined stronger than total exports. Therefore, the crisis induced a convergence of CEEC5 trade structures with Russia toward more standard trade structures.

Conversely, Slovak exports to Russia were concentrated on consumer products (29.3%), machinery (26.2%) and intermediate products (25.2%) in 1997. This trade structure, which resembled more closely the initial structure of trade between the CEEC5 and Russia at the beginning of transition, has to be seen in the context of attempts by the Meciar government, which was in office until fall 1998, to promote Slovak trade with Russia through a number of agreements between the two countries. Therefore, the comparatively strong decline of Slovak exports to Russia may be perceived as a forced restructuring of Slovak trade that occurred with some delay as compared to the other countries under review here.

As regards Poland, two major aspects have to be taken into account in the analysis of export losses due to the Russian crisis. First, in contrast to the other four countries under review, Poland has had considerable trade links with Belarus and Ukraine, two countries which were considerably affected by the Russian crisis. In 1997, the combined share of these two countries' exports in overall exports of Poland was 6% while it was typically around 1% for the other countries under review here. Polish exports to Belarus and Ukraine experienced smaller downturns (of -11.4% in 1998 versus 1997) than exports to Russia and the country suffered an additional loss of around 0.12 percentage point of GDP on this account in 1998. Second, as opposed to the other four countries reviewed here, Poland has traditionally had substantial border trade with its neighbors which is recorded in the country's balance of payments as "unclassified transactions." This balance worsened significantly in the wake of the Russian crisis: Its surplus dropped by USD 700 million in the last four months of 1998 as compared to the same period of 1997. It seems reasonable to attribute this fall mostly to a

drop in Polish border-trade exports to its eastern neighbors, which would imply another additional negative impact in 1998 in the approximate order of 0.4 percentage point of GDP. Summing up all three effects - officially recorded trade with Russia, officially recorded trade with Belarus and Ukraine and border trade with countries east of Poland -, one arrives at an overall trade impact of the Russian crisis on Poland in 1998 of somewhat below 1 percentage point of GDP.

The analysis of trade developments in 1999 is hampered by the availability of data and the limited comparability of different data sources (the latter is particularly true for the Czech Republic). Therefore, the following quantitative assessments have to be understood as tentative, rough orders of magnitude. The IMF Direction of Trade database contains export figures only for the Czech Republic, Hungary and Slovenia, covering the first half of 1999. These figures show that Hungarian and Slovenian exports to Russia appear to have stabilized during the first six months of 1999 at the lower levels of the immediate postcrisis phase.[10] For the Czech Republic, IMF figures suggest that the country's exports to Russia recovered to precrisis levels in the first half of 1999, while Czech sources claim that exports declined by 58% in the same period.[11] Using national sources, Slovak exports displayed the same trend as Hungarian and Slovenian exports in the first six months of 1999, while Polish exports to Russia further declined from the already lower levels of late 1998.[12]

Assuming a rough continuation of export trends for the remainder of 1999 and excluding any major revision of data, one can conclude that, for Poland, Slovakia and Slovenia, the losses should be close to half a percentage point of GDP in 1999, while they should be somewhat higher for Hungary (in the order of 0.7 percentage point). For Poland, additional losses would have resulted from trade losses with Belarus and Ukraine (0.1 to 0.2 percentage point) and, much more importantly, from the decrease in border trade exports which seems to have been in the order of USD 2 billion in 1999. If most of this is attributed to the effects of the Russian crisis, which seems to be a reasonable proposition, the losses are aggravated by another percentage point of GDP. In sum, the combined effect for Poland should be roughly around 1.7 percentage points of GDP.[13] In the Czech case, the impact of export developments to Russia in 1999 remains dubious. If IMF figures prove broadly correct and if the trend suggested by these data continued into the second half of the year, the country possibly riped a minuscule positive effect in 1999. If however national data are largely accurate, there should be a loss in the rough order of half a percentage point of GDP, i.e. close to that of Poland, Slovakia and Slovenia.

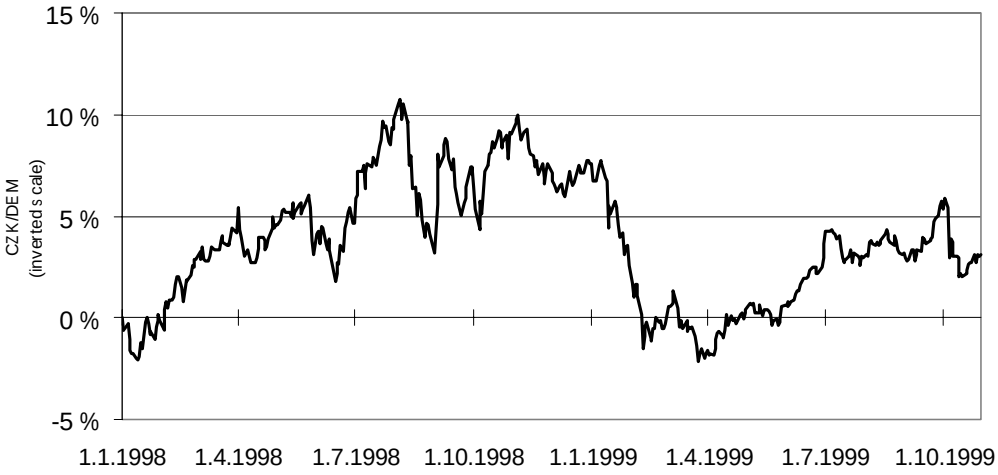
3 The financial channel

In the wake of the Russian devaluation and partial default, the CEEC5 experienced tangible financial contagion effects. In spite of relatively small trade links with Russia and (with the exception of Slovakia at the time) broadly consistent and sound domestic policies, these countries became subject, to a varying degree, to capital outflows twinned with exchange rate pressures, rising interest rates and tumbling equity prices (see charts 1a to 1e, 2 and 3). In the event, contagion effects proved temporary and outflows came to a halt in October 1998, as the turbulences on the financial markets in developed countries calmed down; exchange rate pressure in the CEEC5 abated, nominal interest rates returned to a downward path - real interest rates, though, remained stuck at higher levels than before the crisis - and stock prices started to recover.

During the turbulences, the Slovak koruna was hit strongest. In fact, shortly after the onset of the Russian crisis pressure on the Slovak currency, which was then pegged to a two-currency basket within a ±7% fluctuation band, began to mount, leading to a weakening of

the koruna within the band from -3% to -6% below parity and then to its flotation in early October 1998. Subsequently, the koruna briefly fell to levels of up to 17% below the former parity before strengthening to around 10% below the former parity during the last ten weeks of 1998.[14]

Chart 1a. Nominal Exchange Rate of the Czech Koruna



Note: Since May 28, 1997 Czech Republic had a floating exchange rate regime.

The Polish zloty, pegged to a five-currency basket under a crawling peg regime with fluctuation bands of ±10%, lost 9% falling from close to the strong edge of the band to parity, while the Czech koruna weakened, under a floating regime, by 6% against the DEM, its reference currency at the time. In turn, the Hungarian forint, linked at the time to a two-currency basket under a crawling peg regime with a band of ±2.25%, fell from the strong to the weak edge of the band. However, all three currencies recovered subsequently to pre-crisis positions. The Slovene tolar, by contrast, was only slightly affected.

Poland, the Czech Republic and Slovenia experienced short-lived increases of (nominal) short-term interest rates, while the rise in Hungary was more pronounced (up to 450 basis points) and lasted longer. In Slovakia, short-term interest rates skyrocketed in September, before descending again after the change in the exchange rate regime. Stock prices in all five countries tumbled temporarily, with the Hungarian stock market suffering the largest slide.

Hungary's and Slovakia's official foreign exchange reserves decreased during the crisis, as the central banks of these two countries - in contrast to the Czech Republic, Poland, and Slovenia - resorted to foreign exchange intervention to defend their domestic currencies. Hungary's reserves began to recover in late 1998, while this was not the case for Slovakia where reserves remained basically unchanged at low levels (see table 2).

Net FDI flows did not suffer in the wake of the Russian crisis as balance-of-payments statistics show (see table 3). In fact, they grew dynamically in the Czech Republic and Poland between 1997 and the third quarter 1999 while being broadly stable in Hungary; in Slovenia and Slovakia, FDI inflows remained subdued for most of the overall period, with 1999 inflows showing a certain downward trend. Still, overall developments show clearly that foreign direct investors take a long-term view which was not tangibly altered by the Russian crisis.

Chart 1b. Nominal Exchange Rate of the Hungarian Forint

Note: Composition of the basket: January 1, 1998 to December 31, 1998: 45% USD, 35% DEM, 10% GBP, 5% FRF, 5% CHF; January 1 to October 31, 1999: 55% EUR, 45% USD.

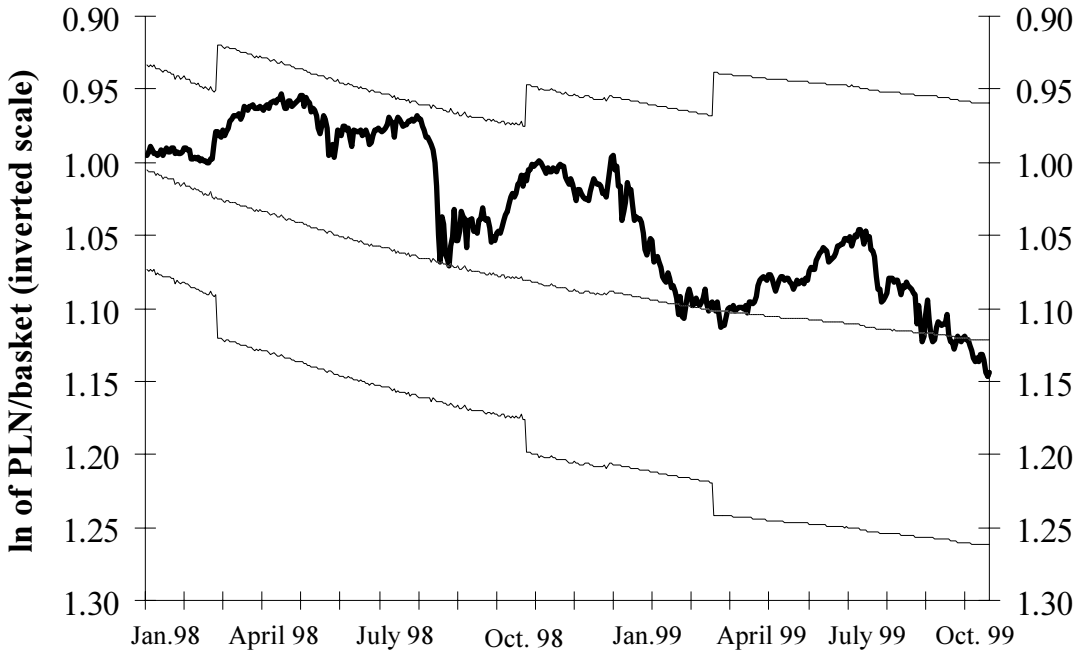
Monthly rate of crawl: January 1, 1998 to February 26, 1998: 1%; February 27 to July 17, 1998: 0.8%; July 18 to September 10, 1998: 0.65%; September 11, 1998 until March 24, 1999: 0.5%; March 25 to October 31, 1999: 0.3%.

Width of the fluctuation band: January 1, 1998 to February 26, 1998: 7%; February 27 to October 28, 1998: 10%; October 29, 1998 to March 24, 1999: 12.5%; March 25 to October 31, 1999: 15%.

Source: Economics and Research Department, National Bank of Hungary

Portfolio investments, in turn, are determined by different motivations: Market sentiment turned negative after the onset of the Russian crisis which is reflected by sizeable outflows of portfolio investments in September and October 1998. The first reaction of investors to the Russian crisis was to withdraw from all emerging markets. Sales of assets in the countries under review also served to cover losses in Russia.[15] However, portfolio inflows to Poland, Hungary and the Czech Republic resumed and in fact soared as early as in the fourth quarter 1998 despite the fact that growth expectations diminished. In Slovakia and Slovenia, portfolio capital began to return slightly later, mostly in the first quarter of 1999 (see table 4).

Chart 1c. Nominal Exchange Rate of the Polish Zloty



Note: Composition of the basket: January 1, 1998 to December 31, 1998: 45% USD, 35% DEM, 10% GBP, 5% FRF, 5% CHF; January 1 to October 31, 1999: 55% EUR, 45% USD.

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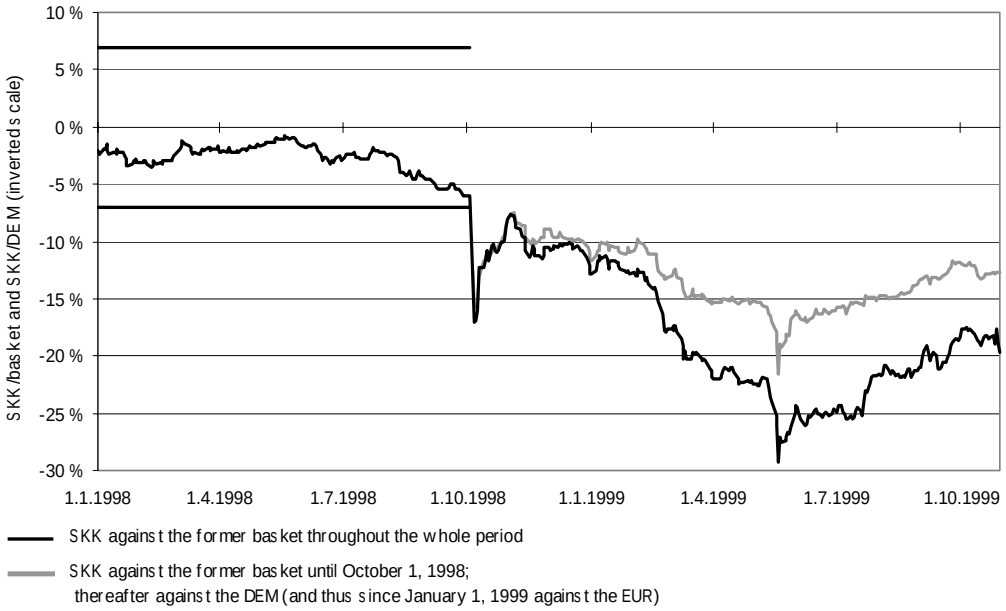
Source: Economics and Research Department, National Bank of Hungary

Chart 1d. Nominal Exchange Rate of the Slovak Koruna



Note: Fixed exchange rate regime until October 1, 1998: Composition of the basket 60 % DEM, 40 % USD; width of fluctuation band: ±7.0 % Since October 2, 1998: Floating exchange rate regime.

Chart 1e.Nominal Exchange Rate of the Slovene Tolar

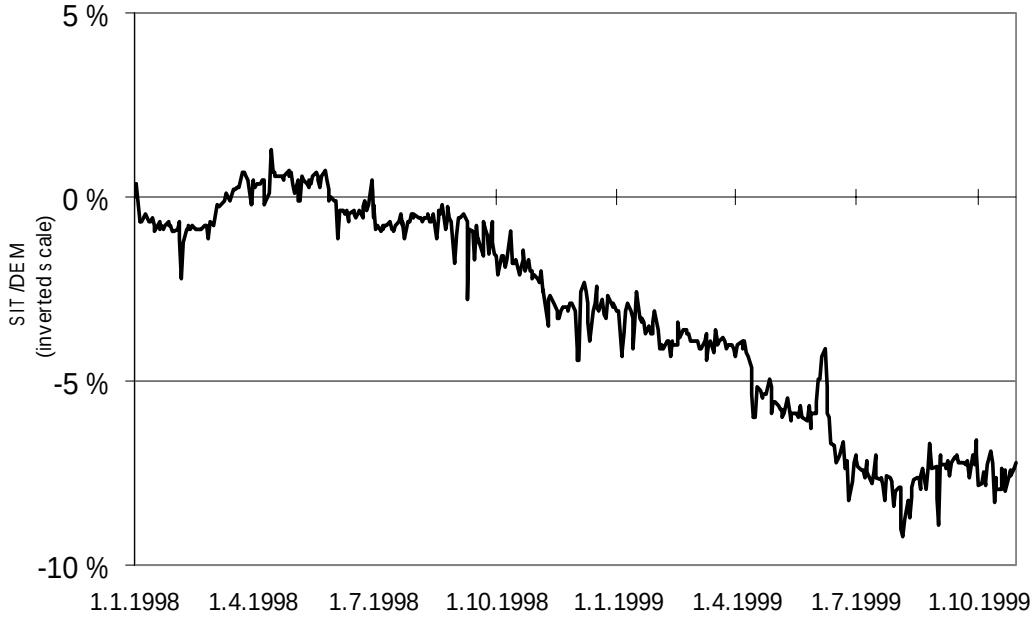


Chart 2: One Month Interbank Rates

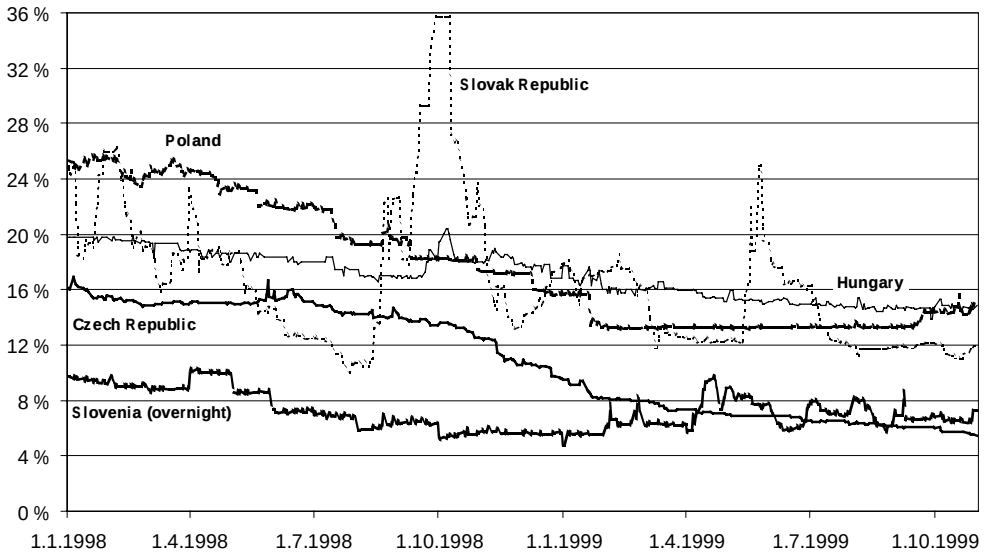


Table 2: Official Foreign Exchange Reserves (excluding Gold), in USD million

	Czech Rep.	Hungary	Poland	Slovak Rep.	Slovenia
1998M7	11,393	9,746	25,811	3,715	3,568
1998M8	11,435	9,400	26,107	3,567	3,571
1998M9	12,345	8,790	26,112	3,056	3,822
1998M10	12,704	8,249	26,149	2,932	3,853
1998M11	12,351	8,704	26,456	2,884	3,732
1998M12	12,542	9,319	26,432	2,869	3,639
1999M1	12,409	8,983	26,142	2,806	3,544
1999M2	12,077	9,432	25,859	2,856	3,523
1999M3	11,874	8,834	25,674	2,760	3,868
1999M4	11,958	8,680	25,460	2,677	3,760
1999M5	11,715	8,746	25,257	2,250	3,531
1999M6	11,693	9,339	24,986	2,898	3,311
1999M7	11,999	9,770	25,479	2,810	3,290
1999M8	11,872	9,762	25,299	2,750	3,192
1999M9	11,938	10,275	25,042	2,880	3,195
1999M10	13,135	10,199	. .	2,898	3,170

Source: IMF, IFS

Chart 3. Stock Market Indices, Index 1.1.98 = 100

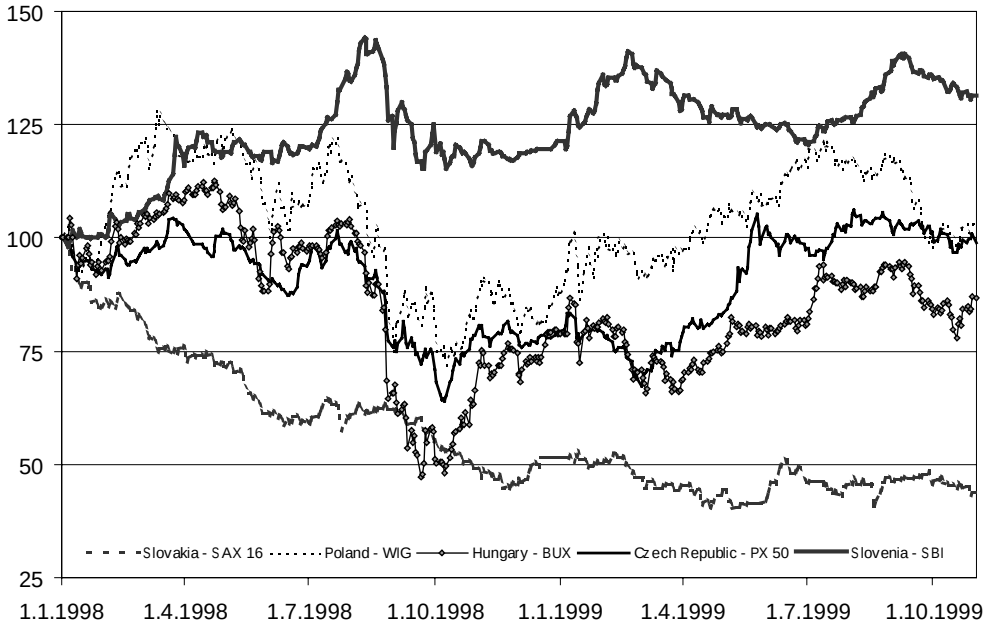


Table 3: Foreign Direct Investment Inflows, Net, in USD million

	Czech Rep.	Hungary	Poland	Slovak Rep.	Slovenia
1997	1,275	1,653	3,041	84	295
1998	2,641	1,453	4,966	431	154
1998Q1	561	330	1,004	71	11
1998Q2	478	531	1,257	104	16
1998Q3	900	170	,684	47	121
1998Q4	723	424	1,021	209	6
1999Q1	584	282	1,138	26	36
1999Q2	654	277	1,193	61	-11
1999Q3	2,149	368	2,435	65	2

Source: national central banks.

Table 4: Portfolio Investment Inflows, Net, in USD million

	Czech Rep.	Hungary	Poland	Slovak Rep.	Slovenia
1997	1,086	-1,047	2,098	25	236
1998	1,069	1,983	1,331	-178	90
1998Q1	30	999	212	-34	9
1998Q2	788	413	363	-17	183
1998Q3	-580	-520	-858	-170	-97
1998Q4	864	1,090	1,614	43	-5
1999Q1	45	128	-305	245	351
1999Q2	196	1,746	-52	-22	18
1999Q3	18	-597	-135	451	10

Source: national central banks.

Other investments took a downturn in the last quarter of 1998; in the first three quarters of 1999, developments were not uniform, with Poland and Hungary recording sizeable inflows, while the other three countries witnessed outflows of varying orders (see table 5).

Table 5: Other Investment Inflows, Net, in USD million

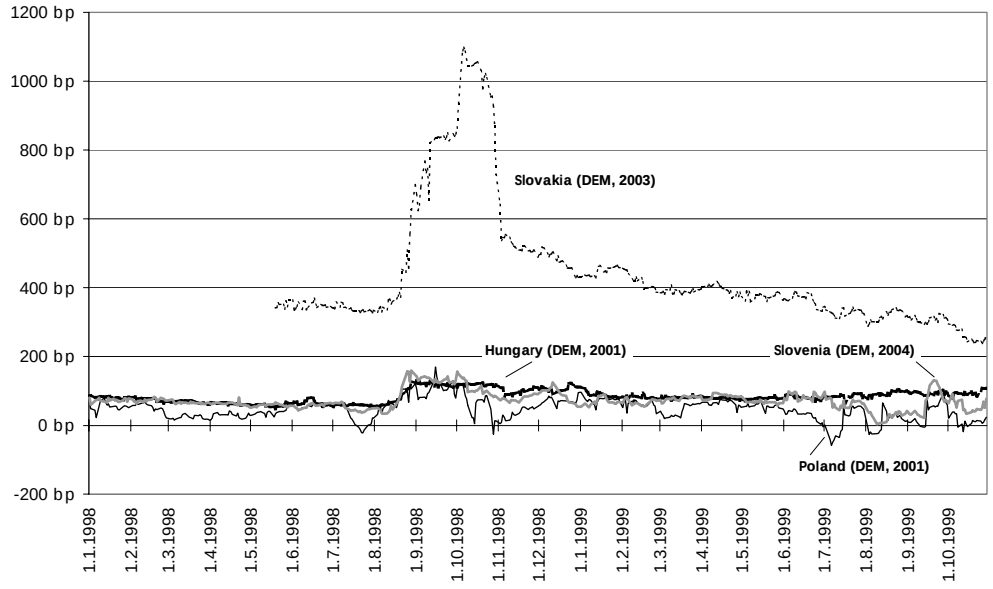
	Czech Rep.	Hungary	Poland	Slovak Rep.	Slovenia
1997	-1,279	-208	185	1,698	658
1998	-787	-763	4,431	1,520	-249
1998Q1	390	248	2,007	263	39
1998Q2	-813	-555	574	981	167
1998Q3	406	-564	1,807	144	-265
1998Q4	-835	107	43	132	-190
1999Q1	-195	278	297	-33	90
1999Q2	-1,021	-479	630	493	-19
1999Q3	-1,056	884	882	-628	-253

Source: national central banks.

Syndicated lending to the country group under review here fell in 1998, as compared to 1997, with Poland, the Czech Republic and Slovakia recording significant falls, while the available data for the first three quarters of 1999 suggest a broad stabilization for Poland and a trend towards a (further) reduction in the Czech Republic, Slovakia and Hungary. International bond placements by the economies in transition came to a temporary standstill during the first weeks of the Russian crisis. In the fourth quarter of 1998, only Hungary, Poland and a Czech company (with a state guarantee) went through with the issue of international bonds, which shows that after an initial withdrawal across the board from emerging economies, investors started to differentiate between markets. Slovenia reentered the eurobond market in March 1999, while Slovakia followed three months later. During the first eleven months of 1999, the overall (gross) volume of international bond issues from the five countries was somewhat above USD 5 billion which is very close to the volume issued during the same period of 1998. Yield spreads on international bonds hiked initially but began to decline gradually in October 1998. Nevertheless, for Hungary, Poland and Slovenia, they have remained slightly higher than before the Russian crisis (see chart 4). Spreads have been much higher for Slovakia over the whole period, the only of the five countries without an investment grade rating. However, it should be noted that, unlike for the other countries, spreads have recently fallen below the levels before the Russian crisis. This reflects major efforts at macroeconomic stabilization and the restart of structural reforms under the Dzurinda government which took office in fall 1998.

The direct impact of the Russian crisis on the financial sectors of the CEEC5 was generally limited. The exposure of the CEEC5 financial sectors to Russia was low when the crisis hit. For example, Russia's share in the overall assets of the Hungarian banking sector came to only 1.5% in mid-1998. For Poland, the same measure shows a mere 0.4%. Consequently, the exposure of individual financial institutions in the countries under review was also low in most cases. The large Czech savings bank Ceska Sporitelna constituted a certain exception, which raised the amount of public money needed to recapitalize this bank subsequently.[16] Moreover, in the case of Hungary, the financial sector was rippled by negative cash flow effects resulting from losses from activities on forward and future markets. As most speculators were unable to honor their contracts, most of these losses had to be taken on by the financial sector. According to calculations of the National Bank of Hungary, these losses reached an approximate order of 0.4% of GDP.[17]

Chart 4. Yield Spreads of Central and Eastern European Eurobonds



4 Assessing the impact of the Russian crisis on the real economies of the CEEC5

4.1 The Russian crisis and real interest rate developments in the CEEC5

Table 6 shows the development of nominal and real interest rates in the CEEC5 since 1993. Although the developments are neither fully clearcut nor easy to interpret, one can legitimately conclude that real interest rates have tended to increase in the five countries under review in recent years. This rise is most clearly discernable in Hungary, but it is also apparent in Poland, the Czech Republic and Slovenia, if 1997 figures are regarded as outliers (due, for example, in the Czech Republic to a tightening of monetary policy and relatively high risk premia in the immediate aftermath of the May 1997 collapse of the country's pegged exchange rate regime). Slovakia constitutes a special case: The extraordinarily high nominal and real interest rates in 1997 and 1998 reflect an entirely uneven policy mix of very expansive fiscal and strictly tight monetary policies.

This raises the question of whether the Russian crisis played a role in instigating this trend increase in real interest rates and, if so, to what extent this was the case. In our view, it would be intrinsically difficult to establish a formal causal relationship between the Russian crisis and real interest rate developments in the CEEC5. However, there are several arguments which would suggest that there was a link.

Table 6: Nominal and Real Interest Rates in the CEEC5

	in %	1993	1994	1995	1996	1997	1998	1999
Hungary	Lending rate	25.6	29.7	32.2	24.0	20.8	18.8	15.5
	CPI	22.5	18.8	28.2	23.6	18.3	14.3	9.8
	Real interest rate	2.5	9.2	3.1	0.3	2.1	3.9	4.7
Czech Republic	Lending rate	14.1	12.8	12.7	12.5	13.9	10.5	8.0
	CPI	20.8	10.0	9.1	8.8	8.5	10.7	2.2
	Real interest rate	-5.5	2.5	3.3	3.4	5.0	-0.2	5.7
Poland	Lending rate	35.0	31.0	24.0	23.3	25.8	19.6	16.7
	CPI	35.3	32.2	27.8	19.9	14.9	11.8	6.6
	Real interest rate	-0.2	-0.9	-3.0	2.8	9.5	7.0	9.5
Slovakia	Lending rate	14.1	14.4	14.6	14.4	21.9	22.6	21.3
	CPI	23.2	13.4	9.9	5.8	6.1	6.7	9.3
	Real interest rate	-7.4	0.9	4.3	8.1	14.9	14.9	11.0
Slovenia	Lending rate	42.6	38.5	28.0	18.3	20.3	12.3	13.9
	CPI	32.9	21.0	13.4	9.9	8.4	8.0	5.8
	Real interest rate	7.3	14.5	12.9	7.6	11.0	3.9	7.7

Note: Lending rates are at year-end (for precise definitions, see EBRD 1999), inflation rates are average annual rates; for 1999: most recent data, usually September 1999 data for lending rates and January-to-September 1999 data for inflation rates.

Source: EBRD, IMF (for 1993 to 1998), national sources (for 1999).

In the case of Hungary, one could base such a reasoning on the fact that interest rate premia for the country increased in the wake of the Russian crisis by 2 to 3 percentage points.[18] This rise may have been a consequence of the international capital markets shifting from an assessment in which country-specific factors played a major role to an assessment in which the regional aspect dominated, in the wake of the Russian crisis.[19] It is plausible to conclude that this rise played an important role in the real interest rise in Hungary.

For the other countries, especially for the Czech Republic and Poland, it would be much more difficult to follow a similar line of argumentation, mainly for the fact that expectations about future exchange rate developments are nonobservable/nonmeasurable for countries which operate fully or nearly fully flexible exchange rate regimes.[20] Therefore, it is also much more tricky to calculate risk premia developments and interpret the results one would get. If premia were calculated despite such concerns (based on the rate of crawl in Poland and nominal exchange rate stability in the Czech Republic), one would basically see that, after some short-lived increase in the first weeks after the onset of the Russian crisis, premia fell tangibly for the Czech Republic and, overall, much more moderately for Poland, at least until recently when the Polish premium began to rise again to levels observed before the Russian crisis.

There are potential further channels by which the Russian crisis could have influenced real interest rate developments. Again on interest rate premia, one could contend that, other things equal, risk premia should have fallen much more substantially against the backdrop of the inflation performance, for example in Poland. Moreover, it could be argued that the significant fall in inflation in last months of 1998 and the first months of 1999 and thus the rise in real interest rates was partly a consequence of the Russian crisis.[21]

Moreover, it should be noted that, for the benefit of the further analysis, table 6 refers to lending rates. Banks may have raised interest rates in the wake of the Russian crisis for loans to those companies which served the Russian market (due to the worsening profitability prospects of these companies), while keeping interest rates unaltered on other loans. Furthermore, when interpreting the figures contained in table 6 it should also be taken into account that interest rate changes feed only gradually through into lending rates, affecting only new loans and, to some extent, exisiting loans with variable rates.

Taken all these arguments together, we have chose a range of 0.5 to 1.5 percentage points of real interest rate increase in 1998 and 1999 each, as the possible size of the impact the Russian crisis may have had on real interest rate developments in the countries under review, with the upper edge constituting a hypothetical worst case.[22]

4.2 Simulation of the impact of increased interest rates on the real economies of the CEEC5

Increased real interest rates negatively influence investment and private consumption. Fidrmuc and Fidrmuc (1999) estimate the determinants of consumption and investment functions for a panel data set of the CEFTA countries. The results are summarized in table 7. They show that the interest rates and public consumption (and real income in the regression for private consumption) are significant determinants of private consumption and investment in these countries.

These estimates can be used for an econometric assessment of the real effects of higher real interest rates in the CEEC5 after the Russian crisis.[23] The estimated interest rate elasticities of capital formation imply that a 1 percentage point increase of real interest rates reduces the real investment in the subsequent year by 1.5 (Czech Republic) to 2.0 (Hungary) percentage points. However, the elasticities estimated for Poland and Slovenia are not significant. Furthermore, it appears that Slovakia represents a specific case in Eastern Europe. Real interest rates are revealed to have a positive (significant) effect on capital formation in Slovakia. This

can only be explained by the expansive fiscal policy of the Slovak government in the years to 1998. The government undertook large infrastructure investments financed by borrowing which led to a surge in real investment (annual growth rates of up to 40%). Such massive public investments pushed up interest rates, as can be seen in the positive effects of the real interest rates on capital formation.

To simulate the possible size of financial effects on their real economies, we take the elasticities as estimated for the Czech Republic and Hungary and use them for all five countries under review. The results of this simulation should be understood and interpreted as representing the additional burden for the real economy rather than actual income effects. In other words, higher real interest rates do not necessarily have to affect GDP developments immediately, as they can be offset by government subsidies or can lead to a rise in nonperforming loans. In the longer term, however, higher fiscal expenditures will have to be offset by additional revenues and contingent liabilities will have to be coped with, which will negatively affect economic activity.

Table 7: Panel Data Estimations of Private Consumption and Capital Formation in the CEFTA Countries, 1993 to 1997

	Private consumption	Capital formation
Real public consumption (first differences)	0.085 (1.801)	0.425 (1.847)
Real wage growth (first differences)	0.400 (6.442)	
Country specific interest rate effects (lagged one year)		
CZLNR	-0.079 (-2.758)	-1.521 (-2.799)
HULNR	-0.086 (-2.988)	-1.924 (-3.320)
PLLNR	-0.076 (-2.627)	1.351 (1.202)
SKLNR	-0.081 (-2.834)	1.104 (2.499)
SILNR	-0.077 (-2.609)	0.024 (0.760)
BGLNR	-0.078 (-2.578)	-0.164 (-2.141)
ROLNR	-0.079 (-2.517)	-0.226 (-2.538)
Constant	2.762 (8.085)	
Country Specific Fixed Effects		
HU		11.627 (3.664)
PL		-3.443 (-0.650)
CZ		9.732 (3.908)
SK		-2.375 (-1.251)
SLO		2.629 (2.373)
RO		3.645 (3.115)
BG		3.410 (3.701)
Adjusted R^2	0.793	0.323
Number of observations	35	35

Note: The dependent variable is the index of real private consumption and the index of real capital formation in the CEFTA countries (Bulgaria, the Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia). All dependent and explanatory variables (except for dummy variables) are in logs and in first differences. The covariance matrices of the coefficients are corrected for possible heteroscedasticity. T-values are shown in parenthesis. The data used in the regressions are from the EBRD Transition Report 1998.

An increase of the real interest rate level by 1.5 percentage points, the upper edge of the chosen range, reduces real investment by 1.3 percentage points (for the low interest rate elasticity) and by 3.0 percentage points (for the high elasticity). Prior to the Russian crisis, the weight of real investment in GDP had been between 22% (Hungary) and 34% (Slovakia) in the CEEC5. Therefore, as shown in table 8, the GDP decline (after one year) which reflects the change of real investment caused by the rise in the real interest rate is between 0.5 and 0.8 percentage point if the lower elasticity of real investment to the real interest rate is assumed. The impact is slightly higher, namely between 0.6 and 1.0 percentage point, if the higher elasticity is used in the simulations.

Similarly, the growth of real interest rates in the CEEC5 is likely to reduce private consumption as well. However, according to our estimations, the effects of real interest rates are relatively small, although very similar and significant in all CEEC5. The estimated interest rate elasticities of private consumption imply that a 1.5-percentage-point increase of real interest rates reduces the real private consumption after one year by only 0.08 percentage point and, consequently, the effects on GDP remain very moderate (0.06 to 0.07 percentage point).

Alternatively, a rise in real interest rates of only 0.5 percentage point, the lower band of the selected range, has an impact on real investment between 0.17 and 0.32 percentage point, while the effect on consumption comes to 0.02 percentage point.

The results imply that Slovakia and the Czech Republic face the largest declines of GDP as a result of rises in real interest rates. This is caused by the comparatively high weight of investment in Slovak and in Czech GDP.

As the simulated adverse impact of increased real interest rate levels materializes with a lag of one year, it began to work its way through to the real economies of the CEEC5 in 1999. This impact will also be effective during the year 2000, as real interest rate increases continued in 1999, probably still instigated to some extent by the aftereffects of the Russian crisis.

Table 8: Simulation of the Impact of Real Interest Rates Increases (0.5 and 1.5 Percentage Points) on the Real Economies of the CEEC5

	Share of Investment	Impact on GDP [a]		Share of Consumption	Estimated c. elasticity [d]	Impact on GDP [e]		Total impact on GDP [d]	
		$\varepsilon_{I,r}$=-1.521 [b]	$\varepsilon_{I,r}$=-1.924 [c]			Low [b]	High [b]	Low $\varepsilon_{I,r}$ [b]	High $\varepsilon_{I,r}$ [c]
Czech Republic	30.38	-0.23	-0.88	52.49	-0.079	-0.02	-0.06	-0.25	-0.94
Hungary	22.34	-0.17	-0.64	50.16	-0.086	-0.02	-0.06	-0.19	-0.71
Poland	23.79	-0.18	-0.69	63.16	-0.076	-0.02	-0.07	-0.20	-0.76
Slovakia	33.52	-0.25	-0.97	48.93	-0.081	-0.02	-0.06	-0.27	-1.03
Slovenia	23.53	-0.18	-0.68	56.46	-0.077	-0.02	-0.07	-0.20	-0.74

Note: [a] impact of increased interest rates on GDP using the respective shares of investment in GDP in the CEEC5 (in percentage points), under assumed lower and higher elasticity of real investment to real interest rates ($e_{I,r}$); [b] low interest rate increase (0.5 percentage point) assumed; [c] high interest increase (1.5 percentage points) assumed; [d] estimated elasticity of private consumption to real interest rate (see table 3); [c] impact of interest rate increase on GDP using the respective shares of private consumption in GDP in the CEEC5 (in percentage points), under estimated elasticity of private consumption to real interest rates; [e] total impact of increased interest rates (0.5 and 1.5 percentage points respectively) on real investment (assumed high and low elasticity of real investment to real interest rates) and on private consumption as computed for GDP in percentage points. See text for more detailed description.

5 Policy responses to the Russian crisis

How have the countries of Central and Eastern Europe reacted to the effects the Russian crisis has had on their economies? To answer this question, this section reviews policy measures that have been taken as well as current policy discussions that have unfolded against the backdrop of the Russian crisis.

In the area of monetary and exchange rate policy, change has been fairly small in the Czech Republic, Hungary, Poland and Slovenia, but more pronounced in Slovakia. In the Czech Republic, Hungary, Poland and Slovenia, the established monetary strategies have been implemented and developed further, and the Russian crisis has not had a significant impact on the process. Two of these four countries have switched to direct inflation targeting, the Czech Republic at the beginning of 1998, Poland a year later (while retaining, for the time being, a crawling peg within a wide fluctuation band).[24] Slovenia has relied on monetary targeting since the introduction of its own currency in October 1991, but has also placed a strong weight on real exchange rate stability most of the time. Hungary's monetary policy has steadily operated within a crawling peg framework with narrow intervention bands since 1995. In Slovakia where a fixed peg to a basket had been in place ever since the introduction of the koruna in February 1993,[25] the koruna was floated in early October 1998 (see section 3). Since then, the Slovak central bank has employed an eclectic monetary strategy which has included elements of monetary and of inflation targeting.[26]

Amidst the Russian crisis, Hungary and Poland lowered the rate of the crawl, thereby showing continuity in exchange rate policies, raising the (ex post) yield of domestic debt instruments expressed in foreign currency and dampening inflation expectations.[27] Apart from Slovakia, there was no immediate move to greater exchange rate flexibility. In particular, Hungary did not widen its relatively narrow fluctuation band, stressing the benefits of its approach (nominal anchor, predictability, disciplining role for fiscal policy, better control of medium-term real appreciation) while arguing that its disadvantages are limited (even a narrow band gives some room for monetary policy if markets are volatile; the narrow band has not increased the vulnerability of the exchange rate regime, using the exchange rate as a shock absorber would have caused costly over- and undershooting). The gradual extension of the Polish fluctuation band which had started back in 1995 was maintained before and, without any strategic change, after the Russian crisis: The band was extended from ±7 to ±10% in February 1998, to ±12.5% in October 1998 and finally to ±15% in March 1999. Other recent adaptations of exchange rate regimes were mostly related to the introduction of the euro. In this context, Poland and Hungary adapted their baskets,[28] while the other three countries which operate floating regimes switched to using the euro as reference currency instead of the Deutsche mark.

While some transition economies (especially Poland) accepted, in the wake of the Russian crisis, a tangible (temporary) weakening of the exchange rate, this policy option was only to some extent available to Hungary under its exchange rate regime (see section 3). Hungary, unlike the other countries, saw the need to raise headline interest rates by 100 basis points on September 22, 1998, to support the forint's exchange rate. But already in November 1998, the country re-embarked on its earlier course of gradually reducing interest rates.

More generally, the central banks of the Czech Republic, Hungary and Poland undertook significant reductions of headline interest rates after late October 1998, against the backdrop of a disinflation performance that was better - or even much better - than expected and first signs of a slowdown of growth in most countries. This trend continued, in a more moderate manner, during 1999, although inflation has picked up, to a varying degree, in the countries under review since mid-1999 (in Poland, since the spring of 1999). Only in the latter case, the central bank reacted by increasing headline interest rates in the fall of 1999.[29]

Table 9: Exchange Rate Regimes in the CEEC5 Before the Outbreak of the Russian Crisis and as of mid-January 2000

	August 17, 1998	January 15, 2000
Czech Republic	Managed float Reference currency: DEM	Managed float Reference currency: EUR
Hungary	Crawling peg versus basket (70% DEM, 30% USD) Fluctuation band: ±2.25% Automatic monthly devaluation: 0.8%	Crawling peg versus EUR Fluctuation band: ±2.25% Automatic monthly devaluation: 0.4%
Poland	Crawling peg versus basket (45% USD, 35% DEM, 10% GBP, 5% FRF, 5% CHF) Fluctuation band: ±10% Automatic monthly devaluation: 0.65%	Crawling peg versus basket (55% EUR, 45% USD) Fluctuation band: ±15% Automatic monthly devaluation: 0.3%
Slovakia	Fixed peg to a basket (60% DEM, 40% USD) Fluctuation band: ±7%	Managed float Reference currency: EUR
Slovenia	Managed float Reference currency: DEM	Managed float Reference currency: EUR

Against the backdrop of the Russian crisis, a general discussion about monetary and exchange rate strategies evolved in the countries under review.[30] The debate focussed mainly on two issues, namely on the robustness of different exchange rate regimes and on their performance in a crisis-prone environment, in particular in terms of the borrowing costs associated with various arrangements. The Central and Eastern European experience does not lend support to the current mainstream view that intermediate exchange rate regimes are inherently unstable in a globalized world economy: The robustness of typical intermediate regimes (the Hungarian narrow-band crawling peg, Slovenia's heavily managed float) has not differed much from that of more flexible regimes (Poland's wide-band crawling peg, the Czech Republic's managed float) during recent years. At least up to the current stage of transition, intermediate regimes have been reasonably viable, if they were backed up by sound and consistent macroeconomic and structural policies, especially financial sector reform (focused on ensuring that financial institutions have a strong capital base and are subject to functioning ownership control, and effective supervision).

The collapse of the Slovak exchange rate regime in early October 1998 cannot be seen as evidence for an intrinsic fragility of intermediate regimes, either. Indeed, it should be explained by shifts in domestic economic fundamentals rather than being interpreted as a crisis of the self-fulfilling variety, driven by financial contagion: The breakdown of the peg originated from very expansive fiscal policies between 1996 and 1998 and major deficiencies in structural reforms which were unsustainable and inconsistent with the maintenance of the fixed exchange rate regime. The crisis in Russia helped trigger the breakdown of the regime, but it was not itself the underlying cause of the collapse.[31]

Discussions about the performance of different exchange rate regimes in times of international financial market crisis started out from the fact that, in the aftermath of the Russian crisis, interest rates increased significantly in Hungary and remained at relatively high levels in the months after the crisis, while there was only an insignificant and transient blip of interest rates in the Czech Republic or in Poland. Moreover, stock prices fell more sharply in Hungary than in the two other countries. Whether this rise in Hungary's cost of borrowing was directly linked to the type of the exchange rate regime or to other factors and whether it persisted beyond immediate crisis times, remains a contested issue. In our view, the Central and Eastern European experience does not support claims that intermediate exchange rate regimes are associated with higher borrowing costs over a longer time horizon than other arrangements; for immediate crisis periods the evidence is less clearcut.[32]

None of the five countries adopted capital controls in reaction to the Russian crisis. Still, the momentum towards further liberalization has slowed down in some of the countries under review and full capital account liberalization will probably be delayed until (just before) EU accession in most cases. Authorities have become more cautious about removing the remaining restrictions which still exist to a varying degree in the CEEC5, especially those on short-term movements, and have begun to put more stress on the need to establish appropriate macroeconomic and structural conditions before capital movements can be fully freed. Recent steps towards further liberalization in this area have primarily been driven by (the intention to fulfill) commitments to the OECD and to the EU. This is true for a new Polish foreign exchange act that went into force at the beginning of 1999 and removed all remaining restrictions on medium- and long-term transactions with the OECD area, the relaxation of capital controls in Slovenia on financial credits and portfolio investments during the course of 1999 as well as a new foreign exchange act which took effect in April 1999, and finally the modest relaxation of foreign exchange regulations in Slovakia at the beginning of 2000.[33]

In turn, Hungary which had intended to liberalize short-term movements by the end of 2000, declared that it would keep its restrictions in this area until joining the European Union. Slovenia has taken a similar position, although its association agreement with the EU foresees virtually full liberalization by 2003. Poland delayed the liberalization of short-term movements which it had committed itself vis-a-vis the OECD to undertake by end-1999; the government decided to put this step off "until the current account [which recorded a deficit in the order of 7% of GDP in 1999] is stronger and Y2K concerns fade."[34] Reportedly, the authorities, alerted by financial crises elsewhere, are concerned that liberalization would be followed by a wave of short-term capital inflows encouraged by interest rate differentials which would make the zloty more vulnerable to a speculative attack.

Moving to the fiscal policy realm, the Russian crisis hit when governments were in the midst of budgetary planning for 1999. It sparked a debate on whether the macroeconomic scenarios underlying the budgetary process should be altered to the changing external environment. In Hungary, for example, thought was given to the idea of drawing up two budget variants, one based on an unchanged growth forecast and the other assuming a tangible slowing of growth. In the end, the budget was put together on an unchanged growth assumption, but a special reserve was included.[35] Overall, the budget plans of most countries under review were eventually based on fairly optimistic growth assumptions and, accordingly, expenditure plans were only mildly adjusted to a potential slowdown of nominal GDP expansion. Probably, policymakers refrained from more substantial adjustments, as the reduction of growth in Western Europe, the main determinant for lower growth in the CEEC5, was perceived to be temporary and, consequently, looser monetary and fiscal policies would permit a smoothing of domestic demand during this transient growth dip.

The 1999 budgetary targets were exceeded in all five countries, typically by around half a percentage point of GDP.[36] One of the reasons for this was lower growth than expected, which was only partly a consequence of the Russian crisis (see sections 2 and 4) but resulted mainly from the subdued import demand of the European Union (especially during the first months of the year). In some countries, the Russian crisis had an additional direct impact on budgetary developments, namely by stepped-up government intervention in the markets for agricultural products (in order to buy up surplus production which had been meant for the Russian market). Furthermore, interest payments in some countries exceeded targets, again partly due to the effects of the Russian crisis (in particular in Hungary). However, other reasons, unrelated to the Russian crisis, were also important, in particular a higher-than-anticipated fiscal impact of structural reforms, especially in Poland. Moreover, apart from underlying growth assumptions, budget projections seem to have been too optimistic in several areas. For example, in the case of Hungary, structural effects on value-added-tax revenues (it had been hoped that the increasing role of shopping centers in retail trade would

cause VAT collection to soar) were overestimated. Finally, in several cases, tax collection capabilities have proved to be less developed than expected. It should be noted that, among the five countries, Slovakia took the strongest fiscal measures in the course of the year to avoid a larger overshooting of budgetary targets.[37]

In general, the Russian crisis has not had a significant impact on the overall pace of structural reforms. Other factors, such as political cycles, government strength and parliamentary bottlenecks, alongside with the need to fulfill external commitments, especially vis-à-vis the EU, remain the key variables to look at when explaining the dynamics of reforms. However, one could argue that the crisis contributed to speeding up the privatization of large commercial banks in the Czech Republic, as the losses Ceska Sporitelna had suffered from the Russian crisis added to the urgency of improving the governance of large financial institutions in the country. Also, the crisis may have quickened the strengthening of specific prudential regulations for banks in the countries under review, although it must be said that a number of important steps were taken already before August 1998 (e.g. the tightening of risk provisioning standards for banks' foreign loans by the National Bank of Hungary in June 1998), perhaps as a consequence of the lessons which had been drawn from the Asian crisis but surely driven by the integration objectives of the countries under review.

6 Conclusions

This paper has examined the impact of the Russian crisis on five Central and Eastern European countries (the Czech Republic, Hungary, Poland, Slovakia and Slovenia, denoted as the CEEC5). The analysis has focussed on the two major transmission channels through which the Russian crisis has influenced these economies, namely trade and financial channels. The study has sought to quantify both of these effects in the short and medium run.

The exports of the CEEC5 to Russia declined in the second half of 1998 and then apparently stabilized on a significantly lower level in the course of 1999. On an annual basis, exports of the countries under review to Russia dropped between 11.6% (Czech Republic) and 38.2% (Slovakia). The actual size of the decline each country suffered was determined, to a considerable extent, by structural factors. Poland and Hungary had relied heavily on agricultural exports to Russia which suffered overproportionally from the crisis. Slovakia, in turn, had not deeply changed its export patterns to Russia during the years up to 1998. In both cases, the crisis forced a restructuring of exports to Russia which have become tangibly more similar in their composition to overall CEEC5 exports.

Nevertheless, the effects of trade losses on economic activity have remained relatively low in the CEEC5. The decline in exports that ensued from the Russian crisis corresponded to between 0.2 percentage point of GDP (for the Czech Republic) and 0.6 percentage point of GDP (for Slovakia and Hungary) in 1998. These results do not account for possible trade redirection, which we consider a legitimate approach, as the potential for redirecting products destined for the Russian market to other countries was likely limited, not least because of the high share of sensitive goods. Moreover, as all countries affected tried to redirect exports, competition increased on foreign but also on domestic markets, which made the overall effects of trade redirection ambiguous. As a matter of fact, trade redirection efforts have led to strong disputes and the introduction of new trade barriers within the Central European Free Trade Association (CEFTA) area which includes the five countries under review as well as Bulgaria and Romania.

The distribution of the negative trade impact of the Russian crisis among the CEEC5 is noteworthy. Slovakia faced almost the highest negative trade-related impact of the Russian crisis in 1998, despite Russia's relatively low share in Slovak total exports. Once more, this underscores the importance of economic reforms and restructuring for transition countries.

The relatively small size of the trade effect on Poland's GDP in 1998 is also remarkable. Among the CEEC5, this country had (and has) the highest share of exports to Russia in its total exports, and it faced an average decline of exports to Russia. Nevertheless, in terms of GDP, the country was only moderately affected, mostly because it has a much less open economy than the four other countries under review. However, for Poland, two additional aspects have to be taken into account. First, in contrast to the other four countries under review, it had considerable trade links with Belarus and Ukraine which were affected by the Russian crisis, though with only modest GDP losses of somewhat more than 0.1 percentage point of GDP. Second and much more important, Poland, unlike the other four countries, has traditionally had substantial border trade with its neighbors which is not recorded in the country's official trade statistics. Based on "unclassified transactions" figures of Poland's balance of payments, we have found another additional negative impact on 1998 GDP in the approximate order of 0.4 percentage point of GDP.

Despite the apparent stabilization of CEEC5 exports to Russia in the course of 1999, annual export volumes to Russia declined again, because low postcrisis levels compare to higher annual bases in 1998. Apart from the Czech Republic, where different data sources point into opposite directions, the impact of this fall was probably roughly of the same magnitude in GDP terms in 1999 as in 1998 (typically around half a percentage point of GDP, a bit higher in the case of Hungary). Again, for Poland, this has to be qualified with respect to trade with Belarus and Ukraine and with respect to border trade which together led to approximate losses of somewhat more than one percentage point of GDP in 1999. Taking 1998 and 1999 together, the combined negative trade effect of the Russian crisis on the CEEC5 was below one percentage point of annual GDP for the Czech Republic, roughly around or somewhat above one percentage point of annual GDP for Slovenia, Slovakia and Hungary and close to two-and-a-half percentage points of annual GDP for Poland, if trade with Belarus and Ukraine as well as border trade effects are included.

The Russian crisis triggered major turbulences in international financial markets, with significant spillover effects on many emerging market economies. Financial contagion did not spare the countries reviewed in this study. To a varying degree, the Czech Republic, Hungary, Poland, Slovakia and Slovenia experienced capital outflows that led to exchange rate pressures, rising interest rates and falling equity prices. In the event, Slovakia was forced to give up its fixed exchange rate regime. However, contagion proved temporary and outflows came to a halt in October 1998, as the turbulences on the financial markets in developed countries calmed down; exchange rate pressure in the CEEC5 abated, nominal interest rates returned to a downward path and stock prices started to recover. In contrast to other transition economies, the CEEC5 retained access to international capital markets, while yield spreads, though declining after an initial hike, have mostly remained a bit higher than before the crisis.

Real interest rates in the CEEC5 have tended to rise during recent years, as inflation has come down more strongly than nominal interest rates. While it would be very difficult to establish a formal causal relationship between the Russian crisis and real interest rate developments in the CEEC5, we have presented several arguments which would suggest that there has been a link, so that some portion of the increase can conceivably be attributed to the Russian crisis. We suppose that this portion has plausibly been in the order of 0.5 to 1.5 percentage points per annum over a two-year period, with the upper edge constituting a hypothetical worst case.

Using estimated elasticities of real investment and real public consumption with respect to lagged real interest rates, we have simulated that the total financial impact of increased real interest rates could amount to between 0.2 and 0.3 percentage point of GDP per annum for the lower edge of the chosen range and to between 0.6 and 1.0 percentage point of GDP per annum for the upper edge. Among the five countries, Hungary, Poland and Slovenia appear to be tangibly less affected than the Czech Republic and Slovakia, which mostly reflects the

high investment shares of GDP in the latter two countries. These simulation results should be understood and interpreted as representing the additional burden for the real economy rather than actual income effects. As the simulated adverse impact of increased real interest rate levels materializes with a lag of one year, it began to work its way through to the real economies of the CEEC5 in 1999 and will also be effective during the year 2000, as real interest rate increases have continued in 1999, probably still instigated to some extent by the after effects of the Russian crisis.

Looking at the overall picture, it is important to note that the trade effects were already fully absorbed in 1998 and 1999, any future downturns in CEEC5 exports to Russia could no longer be seen as a consequence of the 1998 crisis. 1999 was the only year in which both effects, the trade and the interest rate effects, were simultaneously at work. From 2000 onwards, solely the interest rate effects will remain and, as the Russian-crisis-related impact on interest rate developments has probably surpassed its peak already, these effects will peter out from 2001 onwards. Generally, as we adopted rather restrictive assumptions for our calculations of trade losses and the response of real interest rates to the Russian crisis, we believe that our general result, i.e. that the overall impact of the Russian crisis on the CEEC5 has remained relatively moderate, is robust.

We rounded off the analysis with a survey of the policy responses implemented by the CEEC5 in the wake of the Russian crisis and the related policy discussions. The Russian crisis had little impact on exchange rate and monetary policy strategies in the Czech Republic, Hungary, Poland and Slovenia. The intermediate exchange rate regimes of Hungary and Slovenia proved robust, as they were embedded into an overall set of sound and consistent macroeconomic and structural policies. The collapse of Slovakia's exchange rate peg was due to the lack of just such a coherent policy mix; financial contagion from the Russian crisis apparently helped trigger the breakdown of the regime, however it was not the underlying cause for its demise. None of the five countries adopted capital controls in reaction to the Russian crisis but authorities have become more cautious about further liberalization of capital movements, in particular of short-term capital transactions. The Russian crisis contributed to straining fiscal positions but other factors also affected budgetary developments negatively. Overall, 1999 fiscal outcomes were slightly worse than targetted. Finally, the Russian crisis did not have a significant impact on the overall pace of structural reforms in the CEEC5.

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Notes

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[1] See e.g. van Rijckeghem and Weder (1999).

[2] For analyses on the effects of the Russian crisis on the Baltic States, see Taro (1999) and Korhonen (1999).

[3] It could be claimed that the slowdown of growth in the EU may itself have been, to a certain extent, a consequence of the Russian crisis. In this study, the analysis is confined to the impact of direct trade between the CEEC5 and Russia; indirect trade effects are only dealt with, if the link to the Russian crisis can be clearly delineated and if it is sizeable.

[4] See Fidrmuc et al. (2000).

[5] See, for example, Krzak (1998).

[6] We use the UN World Trade Database because of the quality and reliability of the data it contains. As this database has only annual trade figures, we do not differentiate, at this stage, between changes in exports during the first seven-and-a-half months of 1998 (i.e. before the outbreak of the Russian crisis) and the fall thereafter, thereby attributing overall annual change to the Russian crisis. This appears to be justified, as trade developments during the precrisis months can be understood, to a large degree, as foreeffects of the ensuing acute crisis developments. Moreover, the UN World Trade Database contains data on the goods structure of trade which are used in a subsequent step of the analysis.

[7] Comparing these results, based on annual data, with trade losses for the immediate postcrisis period (August to December 1998 versus August to December 1997, based on monthly data from the IMF's 'Direction of Trade' database), the picture is very much the same for the Czech Republic, Hungary and Slovenia, while postcrisis losses are lower for Poland and Slovakia whose exports to Russia had fallen significantly already during the first seven months of 1998. (It should be noted that cumulated annual data of the 'Direction of Trade' database of the IMF are largely comparable to UN World Trade Database which was used in Table 1.)

[8] CEFTA includes the five selected countries as well as Bulgaria and Romania.

[9] Between 1992 and 1998, CEFTA succeeded to liberalize a significant part of industrial trade: 80% to 90% of industrial trade are currently fully liberalized. By contrast, agricultural trade remained subject to significant trade restrictions, which increased further in 1999. In March 1999, the Czech Republic abolished the preferential duty on sugar imports from CEFTA countries, increasing it temporarily by 80% to 141%. This measure was primarily aimed to contain soaring imports of sugar from Poland. In April 1999, Poland introduced higher duties on CEFTA imports of sugar, wheat, pork, poultry and milk products, which mainly hit Hungarian exports to Poland. In response to these trade barriers, Hungary withdrew preferential tariffs on Polish cheese, potatoes and sugar. Only Slovakia did not establish any new trade barriers vis-a-vis other CEFTA countries, but it introduced a general import surcharge of 10% in June 1999, affecting 75% of all its imports, in order to get a grip on trade and current account deficits.

[10] Hungarian exports were down by 68% (after a decline of 69% in the immediate postcrisis period August to December 1998), while Slovenian exports exhibited a decrease of 62% (after 61% in the last five months of 1998). The most recent national figures which cover the first nine and elevens month of 1999, respectively, show that exports continued to stagnate. This implies that exports after mid-August 1999 stood roughly at the levels recorded a year earlier.

[11] According to Czech sources, the decrease in the first ten months slowed to 49% which would indicate an approximate stabilization at the lower levels of the first half of 1999.

[12] In Slovakia, the decline slowed from 36% in the last five months of 1998 to 31% in the first half of 1999. However, the most recent figures show a further fall during the remainder of the year: Slovak exports to Russia in the first eleven months of 1999 were half of what they had been in the same period of 1998. In Poland, the fall quickened from 32% to 70%. In the first nine months, the decrease was 59% which suggests that the decline in Polish exports to Russia may have bottomed out in the third quarter of 1999.

[13] This is not far from estimates by the National Bank of Poland according to which the negative impact of the Russian crisis on Poland's GDP was in the order of close to 1.5 percentage points in 1999.

[14] For a thorough analysis of the events, see OECD (1999).

[15] See Krzak (1998) and, for a more differentiated picture on Hungary, Darvas and Szapáry (1999).

[16] The bank's exposure to Russia was close to USD 200 million when the crisis hit.

[17] Darvas and Szapáry (1999).

[18] In the underlying calculations, the Hungarian interest rate premium was defined as the annualized three-month money market interest rate less the preannounced depreciation less the annualized three-month foreign interest rate (weighted average of basket currency interest rates), see Backé (1999).

[19] This argument is made by Darvas and Szapáry (1999).

[20] While exchange rate expectations in tight exchange rate regimes, if they are credible (as Hungary's narrow-band crawling peg), can be largely derived from the rate of crawl, this is much more problematic for more flexible arrangements.

[21] As some of the products destined for Russia were redirected to the domestic market, inflation was pushed downwards; this is especially true for the prices of agricultural goods and foodstuff which fell in nominal terms in several countries under review in late 1998 and into 1999. Moreover, the Russian crisis and its global effects may have reinforced the fall of commodity prices in late 1998/early 1999 which had begun earlier, driven mainly by the impact of the Asian crisis.

[22] The upper edge is drawn from the average increase of real interest rates in Hungary in recent years (the country where interest developments have been smoothest). In this worst case, the entire change is ascribed to the Russian crisis.

[23] When interpreting and using these estimates, some caution is warranted, as the number of observations is relatively small.

[24] The Czech central bank targets net inflation, which is defined as the CPI change excluding the impact of tax, tariff and administrative price increases, while Poland's central bank targets consumer price inflation. The Czech central bank undershoot its targets in both 1998 and 1999 by a considerable margin, while inflation in Poland was tangibly above the target in 1999. The target ranges for 2000 are 3.5% to 5.5% in the Czech Republic and 5.4% to 6.8% in Poland respectively (12-month rates at year-end). For a more detailed review on direct inflation targeting in transition economies, see Krzak and Ettl (1999).

[25] Since July 1994, the basket had consisted of 60% DEM and 40% USD. During the existence of the peg, there had only been one change in the parity rate (10% devaluation in July 1993). Between January 1996 and January 1997, the fluctuation band had been widened in three steps from ±1.5% to ±7%.

[26] The Slovak central bank uses M2 as an intermediate target. At the same time, it announces inflation targets. In 1999, this target referred to net inflation, which excludes changes in regulated prices, food prices, indirect taxes and subsidies, and it was met. For 2000, the central bank shifted to announcing a target for core inflation, which includes food prices; the targetted range is 4.5% to 5.8% (12-month rate at year-end).

[27] In late August 1998, Hungary announced a reduction of its automatic monthly crawl rate from 0.8% to 0.7% which took effect at the beginning of the fourth quarter of 1998; in late October 1998 a further cut to 0.6% was proclaimed which became effective in January 1999. Poland, which had reduced its crawl rate from 0.8% to 0.65% in mid-July 1998, effected another reduction to 0.5% as of September 10, 1998. More recently, both countries have cut crawl rates further: On March 24, 1999, the Polish rate was reduced to 0.3%, while Hungary undertook further reductions to 0.5% as of July 1, 1999, and to 0.4% as of October 1, 1999, both of which had already been announced in April 1999.

[28] Hungary moved from a 70% DEM/30% USD basket to a 70% EUR/30% USD basket on January 1, 1999 and to a 100% EUR link a year later. Poland streamlined its basket from 45% USD, 35% DEM, 10% GBP, 5% FRF, 5% CHF to 55% EUR/45% USD as of January 1, 1999.

[29] After a minor interest rate hike in September 1999, the National Bank of Poland raised its key rates between 250 and 350 basis points in November 1999 in order to meet the inflation target for end-2000.

[30] For a more detailed account, see Backé (1999).

[31] Notwithstanding its differences from the Slovak case, the collapse of the Czech peg in May 1997 was also fundamentals-based (see Backé, 1999).

[32] See Backé (1999) who reviews and discusses the two opposite positions of Begg and Wyplosz (1999) and Darvas and Szapáry (1999).

[33] Slovakia freed inward and outward financial credits with a maturity of more than one year (so far: more than three and five years respectively) and the purchase of real estate by foreign financial institutes for their business activities. Furthermore, rules on the trading of foreign securities at the Bratislava stock exchange were eased.

[34] Statement by the Polish government, quoted according to Reuters, January 11, 2000.

[35] According to the budget plan, this reserve, if frozen, should allow the country to meet the fiscal target, even if growth turns out to be up to one percentage point lower than expected. In fact, the reserve was frozen already in February 1999.

[36] In the case of Hungary, the government announced that it had met the 1999 public sector deficit target of 4% of GDP. However, a significant part of the revenues of social funds came from the sale of company shares (which, by international standards, should be treated as financing items rather than deficit-lowering revenue items). If all privatization receipts are recorded according to international standards, Hungary's 1999 consolidated public sector deficit would probably come to around 4.5% of GDP.

[37] Except in the Czech Republic and Slovenia, budgets for 2000 were approved by parliament before end-1999. A tangible reduction of the general government deficit in relation to GDP (in comparison with budget outcomes in 1999) is planned in Poland and Hungary, while Slovenia's draft budget, as it stands, aims at more moderate reduction. In Slovakia, the public deficit for 2000 is envisaged to remain roughly at 1999 levels. The same is true for the Czech Republic, provided that the government's most recent budget proposal is adopted.

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Bank of Finland
Institute for Economies inTransition

P.O. Box 160
FIN-00101 Helsinki

Phone: +358 9 183 2268
Fax: +358 9 183 2294

E-mail: bofit@bof.fi
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