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## **Slovakia: A Catching Up Euro Area Member In and Out of the Crisis**

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February 2013

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## ABSTRACT

### **Slovakia: A Catching Up Euro Area Member In and Out of the Crisis**\*

The Slovak economy experienced a strong but short recession in 2009. The recovery afterwards was driven by exports and investment. While GDP growth was one of the strongest in OECD, employment did not reach the pre-crisis level and unemployment remains stubbornly high. This paper argues that Slovakia joined the euro area after a period of unprecedented real appreciation, which generated a threat for competitiveness of its export-oriented manufacturing industry. The response combined internal devaluation with productivity increasing measures, including capital deepening and laying off low productivity workers. While this strategy was successfully restoring an external equilibrium, its consequences for domestic demand and employment are less positive. This development is compared with Estonia and Slovenia, two other small and very open economies, recently entering the euro area.

JEL Classification: E20, F41, G01

Keywords: Slovak Republic, Estonia, Slovenia, crisis, job-less recovery, domestic demand

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As a small economy in the process of catching up, entry into the euro area brought about a significant change in the macroeconomic framework for Slovakia. In the run-up to entry, borrowing costs fell, the exchange rate risk disappeared and the growth outlook for the economy improved (Huefner and Koske, 2008). Together with earlier financial sector privatisation and liberalisation, the introduction of the euro reduced barriers for borrowers (Backé and Wójcik, 2008; Huefner and Koske, 2008). However, in the Slovak case, the international financial crisis aborted the expected boom before it could take hold.

For peripheral euro-area member economies, the financial crisis worsened access to international financial markets because of perceived liquidity problems and contagion effects, which have only recently been taken into account by enlarging the toolkit of the ECB and by establishing a European sovereign debt intervention architecture. Furthermore, the fact that the exchange rate is no longer available as a macroeconomic stabilisation tool has raised fears that the country cannot adequately deal with adverse external shocks, thereby becoming more likely to be a victim of contagion.

This paper describes how Slovakia navigated the crisis and how a return to strong, though jobless, growth resulted. Further insights are provided by a comparison with Estonia and Slovenia, two other countries which have recently adopted the euro. The combination of a sound financial sector, a stability-oriented macroeconomic policy framework, flexibility-enhancing labour market regulations and competition-friendly product market regulation is of key importance for a small euro member country to absorb adverse external shocks (Brixiova *et al.*, 2009; Berka *et al.*, 2012). The specific challenge for Slovakia is to replace the historically important, but now fading, external drivers of growth, which have been dependent on large-scale FDI plants, with domestic sources of growth which emphasise innovation and knowledge-intensive start-ups, while utilising and fostering the opportunities of a transition to green growth. At the same time, public finances will need to be brought back to a sustainable path.

### **How did the crisis hit the Slovak economy?**

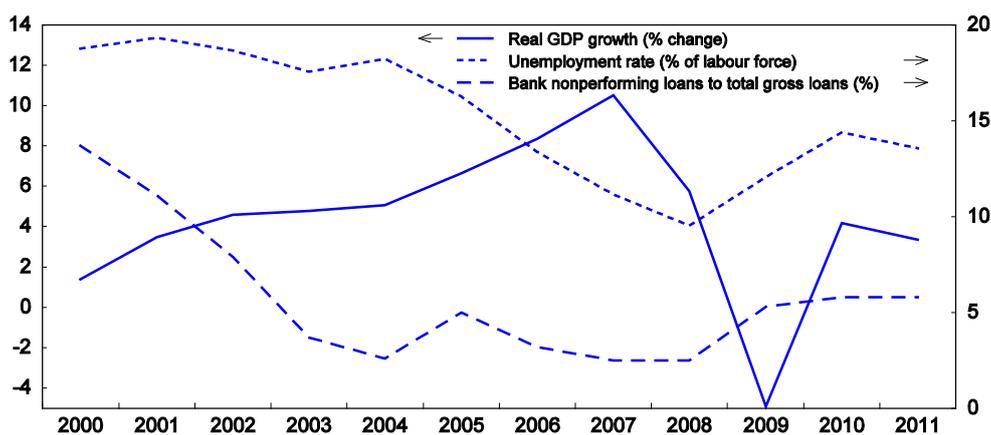
The worldwide financial crisis affected Slovak economy severely. In 2009, GDP declined by 4.9 per cent (Figure 1). This decline was stronger than in other regional economies (growth of 1.6 per cent in Poland, a decline of 4.6 per cent in the Czech Republic in 2009). The initial shock was actually larger than in Spain (-3.7 per cent in 2009) and Greece (-3.3 per cent), while it was less dramatic than the output decline in Slovenia (-7.8 per cent) and in Estonia (-14.3 per cent). However, the Slovak economy recovered as early as 2010 and returned almost to the “normal” pre-boom growth rates of about 4 per cent in 2010 and 2011, exceeding the pre-crisis peak in the second quarter of 2011. This pattern is similar to Estonia, but very different from Slovenia, which experienced only slow growth after 2009 and even another recession since 2012.

Unsurprisingly for a global crisis, foreign trade was hit particularly hard. In 2009 exports fell by about 20% in Estonia and Slovenia and 15% in Slovakia. Imports fell by more than 30% in Estonia and about 20% in Slovakia and Slovenia. Net exports therefore supported economic activity, because the slump in domestic demand also hit foreign suppliers. The subsequent export driven recovery was strongest in Estonia, followed by Slovakia, while Slovenia experienced a rather shallow recovery of foreign trade.

Although the origin of the crisis was external, domestic demand took a hard hit (Table 1 below). The reasons for the dismal performance of domestic demand are manifold. Credit standards were tightened, income growth declined and borrowing costs increased, while the labour market deterioration weighed on consumer confidence and the negative external outlook caused firms to revise their investment plans downward. Last but not least, fiscal consolidation exercised a negative short term effect on domestic demand.

The recession caused a slight increase in nonperforming loans in 2009, which largely stabilised in 2011 (Figure 1). Nevertheless, nonperforming loans remained at 5 per cent of total gross loans, which was below the levels prior to the EU accession. The well capitalised, foreign-owned private banking sector played a helpful role to secure financial stability. This is again similar to Estonia, but in contrast to Slovenia where the domestically owned banking sector has to be recapitalised with public funds (OECD, 2012a).

**Figure 1. GDP growth, unemployment and non performing loans**



Source: OECD, OECD Economic Outlook database; World Bank, World Development Indicators database.

***The labour market response was strong, but skewed to the downside***

The output shock was transmitted to unemployment with some delay (Figure 1). In response to the output declines, unemployment increased by 2.5 and 2.4 percentage points in 2009 and 2010 and stabilised at about 13.5 per cent in 2011, about 4 percentage points above the pre-crisis low (OECD, 2012a). As GDP returned to its pre-crisis level in 2011, employment reductions contributed to improvements of productivity (Box 1). The responsiveness of unemployment to GDP growth has thus declined since the crisis, because the output increase was absorbed more by productivity increases than inducing job growth. As a general pattern it appears that strong growth is needed in order to reduce unemployment, while employment immediately falls if growth slows.

**Box 1. Recent labour market developments**

Employment is still below its pre-crisis level, despite the strong economic recovery. During the crisis in 2008-2009, employment reacted to the sharp decline in GDP with some delays but deteriorated sharply and persistently. In 2010 and 2011 the economy recovered strongly with one of the highest growth rates in the OECD. The labour market reacted only by mid-2010, as employment started to recover. The economy is still missing approximately 60 thousand workers compared to the pre-crisis period. In addition, employment has decreased since the first quarter of 2012 while GDP has continued to grow.

In order to further analyse the relationship between labour market developments and demand, we use a simple regression estimating employment outcomes relative to GDP.

$$\Delta empl_t = \alpha + \sum_{i=0}^n \beta_i \Delta gdp_{t-i} + \sum_{j=1}^n \gamma_j \Delta empl_{t-j} + \delta [empl_{t-1} - \theta gdp_{t-1} - c] + \varepsilon_t$$

with *empl* being the log level of employment and *gdp* the log level of real GDP. A simple two-stage OLS estimation for the observation period 1993Q4 to 2012Q1 generates the following result (standard errors are in parentheses):

$$\Delta empl_t = -0.001 + 0.14 \cdot \Delta gdp_t + 0.42 \cdot \Delta empl_{t-1} - 0.06 \cdot \left[ empl_{t-1} - 0.16 \cdot gdp_{t-1} - 10.63 \right]$$

(0.001)
(0.04)
(0.10)
(0.03)
(0.01)
(0.23)

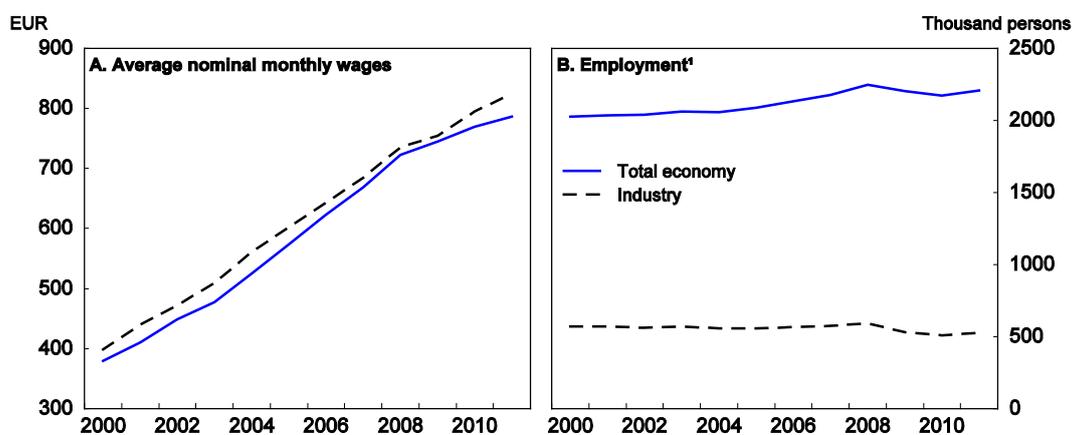
The relationship between GDP and employment growth deviated from the estimated trend in the crisis and after. Employment was higher than the model suggested in 2008 and remained below the level the GDP development would have suggested between 2010 and 2012. The main reasons behind the missing employment could be summed up as follows:

- The pre-crisis level of employment did not fully represent the production capacity of the economy. Estimates suggest that there was an overheating in 2008. This is in line with the empirical evidence that the actual unemployment rate fell below the structural unemployment rate (Sramkova 2010).
- Flexibility in working hours played an important role in employment developments. When GDP started to fall, employers were reluctant to lay off workers and decreased working hours instead. When demand picked up, working hours were increased sharply to exceed pre-crisis level at the end of 2009, compensating for a low level of hiring.
- Productivity per hour worked increased at a relatively high pace by OECD standards. In 2009 the neighbouring countries experienced a significant devaluation of their currency, increasing the pressure on Slovak companies to keep costs low to maintain competitiveness.
- The fiscal consolidation led to layoffs in the public sector.
- More generally there are factors at work, which make recoveries after a financial crisis either job- or wage-less (Calvo *et al.*, 2012). With increasing risk aversion and tightening lending standards financing of workplaces will be biased in favour of higher capital intensity and make the recovery jobless. Competition for jobs in this environment will lead to overshooting real wage adjustment, which is most likely achieved by a combination of low or no wage increases and overshooting inflation.

The labour market demonstrated a substantial degree of downward flexibility in response to the financial crisis, consistent with a low level of employment protection legislation (EPL) and the close relationship between wage settlements and labour market performance at the plant level. Employers terminated labour contracts, although similar arrangements for subsidised short hours programmes as in Germany were introduced. Conversely, the high share of long-term unemployment indicates that it seems to have been difficult for unemployed workers to find a new job indicating a strong skills mismatch (OECD, 2012b)

Wage growth slowed in 2011 (Figure 2). Given the revival of inflation in 2011, wage moderation went hand-in-hand with a real decline in labour income. Moreover, wages in the services and other non-tradable sectors showed a higher degree of wage moderation, which resulted in an increasing wedge between the wage levels in industry and the total economy from 2009 (Figure 2.A). The different evolution of compensation in manufacturing is also in line with the observation that companies mainly laid off unskilled, less-productive workers, earning low wages, resulting in a further deterioration of the labour market prospects for unskilled workers (Figure 3). Some of these workers may have been re-employed in the service sector, allowing a slight increase in employment in 2011 (Figure 2B). In turn, industrial employment has declined since the financial crisis.

Figure 2. Wage adjustment and employment

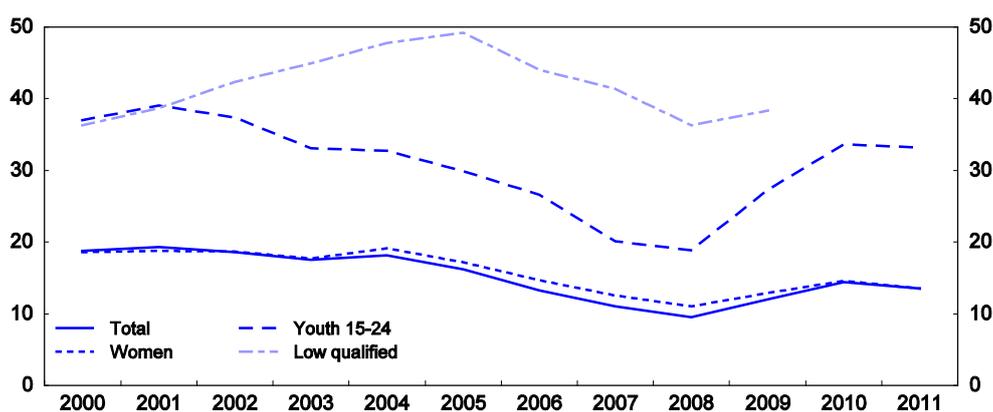


1. According to National Accounts methodology.

Source: Statistical Office of the Slovak Republic and OECD, Quarterly National Accounts database.

Figure 3. Unemployment rates in the Slovak Republic

In percentage of labour force



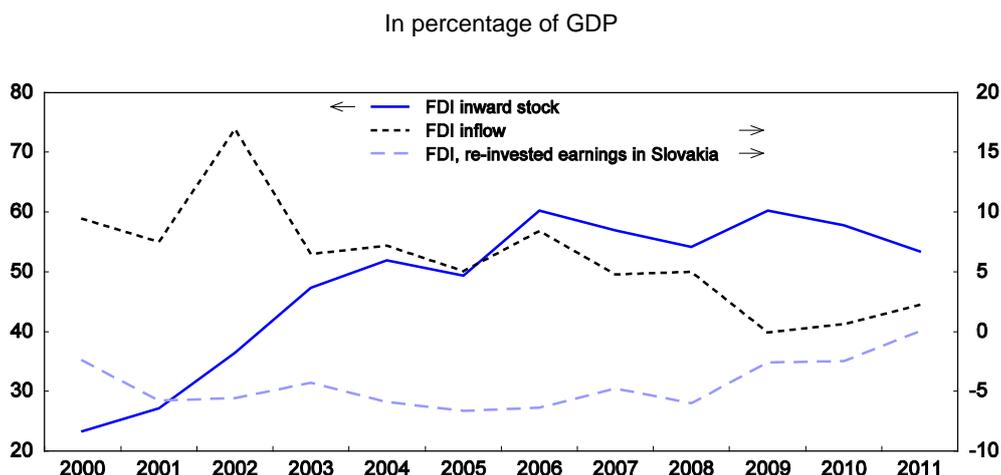
Source: OECD, Labour Force Statistics database and Education at a Glance 2011.

### *New FDI inflows helped regaining competitiveness*

An active investment promotion policy, business friendly structural reforms, low corporate income taxes and the prospect of euro accession resulted in a surge in inflows of FDI from the early 2000s. However, the financial crisis reduced the worldwide supply of investment funds, in particular for emerging economies in the EU and euro area (Walch and Wörz, 2012). Furthermore, euro appreciation vis-a-vis the CEECs outside the euro area reduced the relative attractiveness of Slovakia as an investment location for export production. Moreover, frequent legislation changes imposed by new governments and an associated risk of regulatory uncertainty in important areas possibly diverted investors from Slovakia to other emerging economies. FDI actually, fell significantly in 2010 (the remaining inflows concerned mainly equity investment in the financial sector) and remained negligible afterwards. Thus, FDI did not contribute to the recovery from the financial crisis, while it was an important building stone of the previous growth model (Fidrmuc and Martin, 2011). The successful Slovak business model has thus come under pressure and a new source of stimulus is needed for the continuation of a rapid catch-up of the Slovak economy.

The nature of FDI inflows has changed. While in the years before the crisis FDI flows were dominated by large greenfield investments, since the crisis investment in existing plants has become more important (Figure 4). These investments have created fewer additional employment opportunities and have been undertaken to defend the viability of existing operations in the face of the strong real appreciation before euro adoption, new competitors in the region and the worse outlook for Slovakia's main export goods (cars and flat screens).

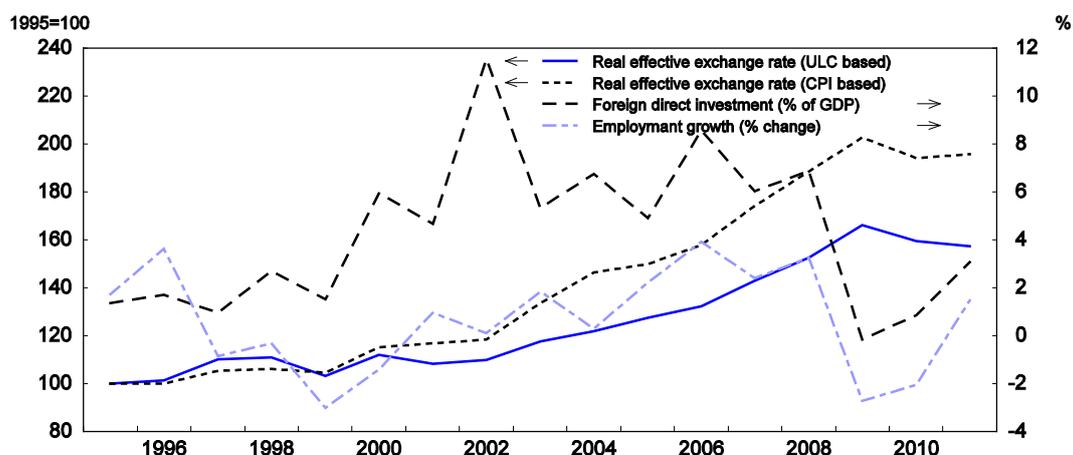
**Figure 4. FDI inward flow and stock, and re-invested earnings in Slovakia**



Source: OECD, International direct investment database and Eurostat.

FDI inflows have exerted a strong influence on the Slovak economy. Employment growth was positively correlated with FDI inflows (Figure 5). The real exchange rate has appreciated during the periods of large capital inflows, but the overall effects remained moderate, though positive, up to 2011. Until 2009, FDI inflows and employment growth were increasing as the real exchange rate appreciated, while from 2009 on, the real exchange rate depreciated slightly and employment growth and FDI inflows decelerated.

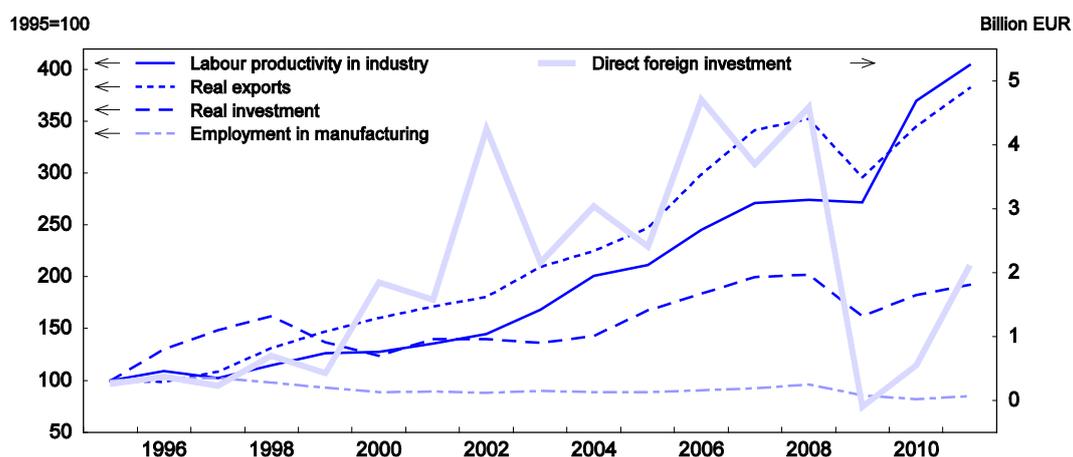
**Figure 5. Real effective exchange rates, foreign direct investment and employment growth**



Source: OECD, OECD Economic Outlook database.

Productivity gains were achieved both by new investments and by reduction in low-productivity employment, both contributing to an acceleration of productivity growth in manufacturing (Figure 6). Actually, while industrial employment was roughly constant throughout the 2000s, it continued to fall after the 2009 crisis. Moreover, productivity and export performance are closely related: FDI inflows (e.g. to sectors such as automotives) appear to be geared to productivity increases and maintaining export competitiveness.

Figure 6. Competitiveness indicators



Source: OECD, OECD Economic Outlook and Quarterly National Accounts databases; European Central Bank Data Warehouse.

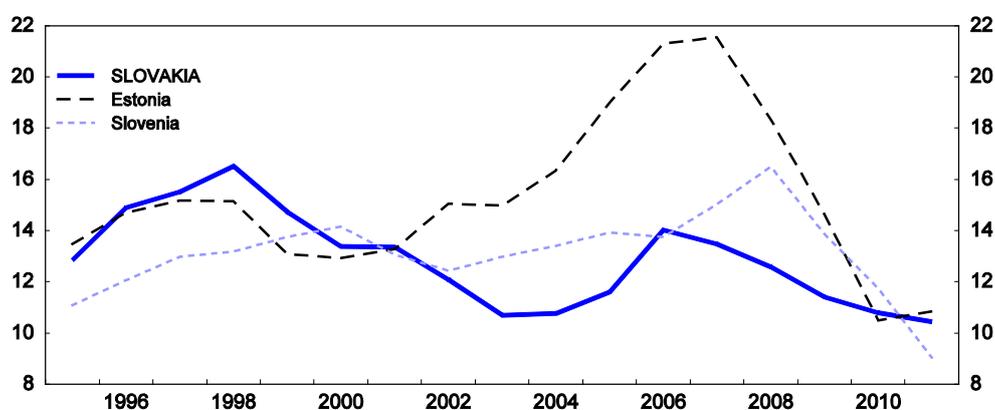
### *Domestic demand stagnates in the face of reversing terms-of-trade improvements*

As a consequence of budget consolidation, low income growth, stagnating employment, deteriorating terms-of-trade and the increase in servicing costs of loans as a percentage of income, domestic demand growth fell from an average of about 6% before the crisis by 6% in 2009 and has not yet reached the pre-crisis level of 2008.

Construction investment has remained relatively constant in Slovakia since 1996 (Figure 7). Moreover, before the crisis investments in buildings (as share of GDP) were lower in Slovakia than in Estonia and Slovenia. As a consequence of the lower response in building volume, supply constraints contributed to soaring real estate prices (Fidrmuc and Senaj, 2012), generating a considerable need for a house price correction after the crisis.

**Figure 7. Investment in buildings**

In percentage of GDP

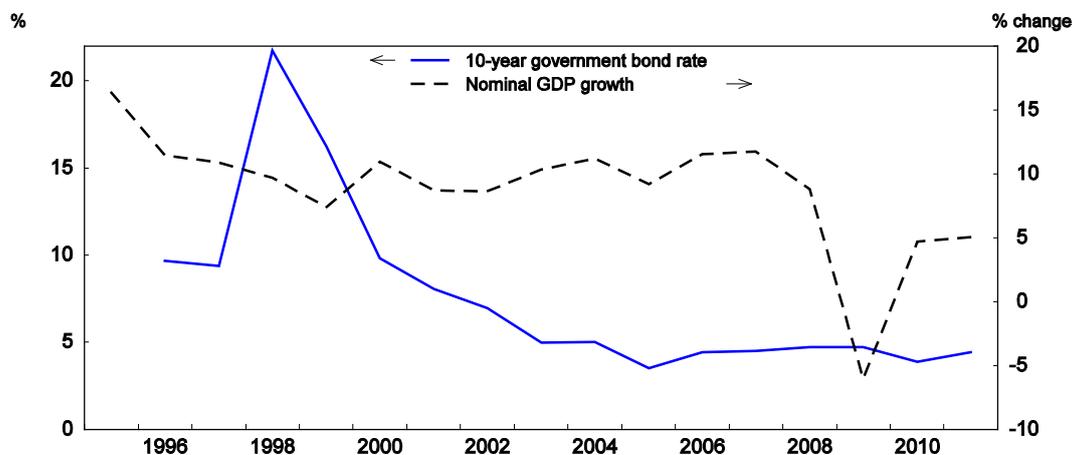


Source: OECD, OECD Economic Outlook and Quarterly National Accounts databases.

Before the crisis mortgage loans and other borrowing by private households were facilitated by a large differential between income growth and borrowing costs (Figure 8). Loans were easily financeable out of income increases, without having to sacrifice current consumption. This has changed dramatically since the crisis. Wages stagnated in 2009 and 2010 and with less bright future income prospects borrowers (and lenders) have become more cautious, increasing the savings rate. Currently servicing old loans means less money is available for current consumption spending and real estate investments. Consequently, the demand for loans has weakened recently.

Prior to the financial crisis, Slovakia succeeded in reducing public debt levels, while experiencing a favourable development in the relation between borrowing costs and nominal income (Figure 8). The 10-year government rate declined from its peak of above 20 per cent in 1998 to below 5 per cent in 2008 while, at the same time, nominal GDP growth accelerated from below 10 per cent annually in the late nineties and early 2000s to significantly above 10% between 2003 and 2007. Having increased up to the early 2000s, gross public debt then decreased strongly until the crisis hit in 2009 and increased strongly after, although remaining below the level of the beginning of this decade (Figure 9B). Despite the strongly falling debt-to-GDP ratio, fiscal policy was too loose during the good times, requiring pro-cyclical tightening at a time when the labour market is already under stress. While there is no alternative to public sector consolidation and the private household savings rate is endogenous, it is nevertheless important to organise the return to sustainable public sector balances in a form which is least growth damaging (OECD, 2012c, Chapter 1).

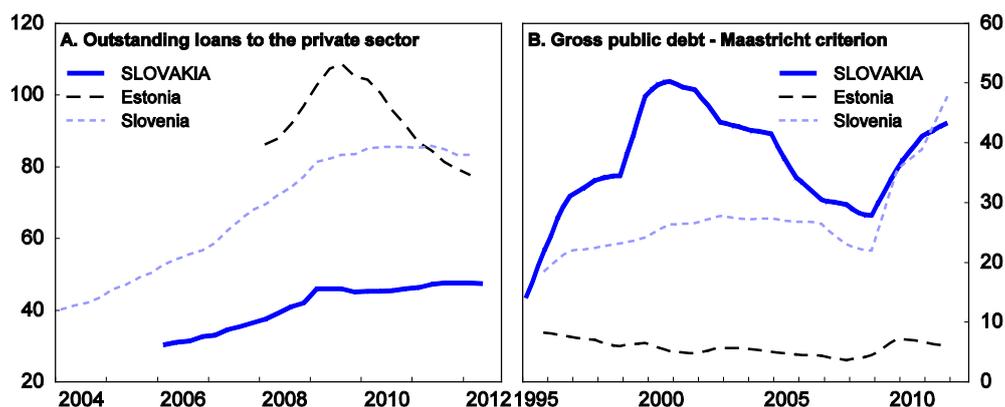
Figure 8. Borrowing costs and nominal GDP increases



Source: OECD, OECD Economic Outlook database.

Figure 9. Private and public debt

In % of GDP

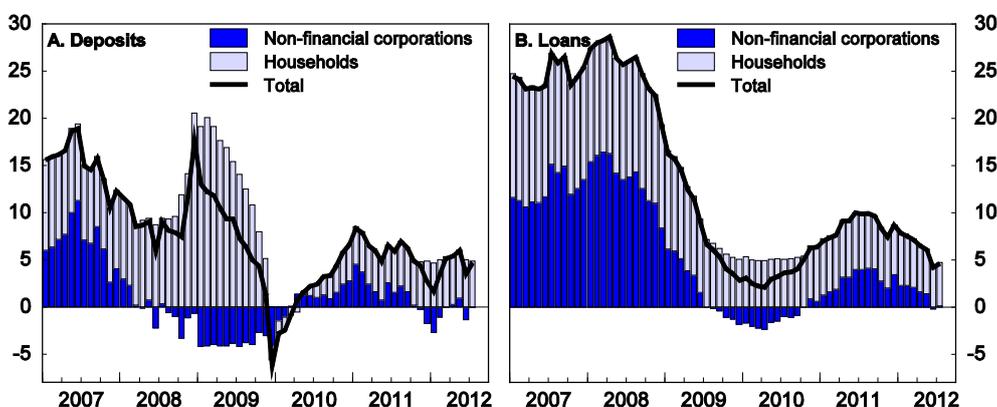


Source: European Central Bank Data Warehouse; OECD, OECD Economic Outlook database.

Despite historically low interest rates, due to both the euro introduction and the financial crisis, credit growth was lower than in other CEECs and it slowed further in Slovakia at the end of 2011 as the sovereign debt crisis escalated and credit standards were tightened, in particular for consumer credit and real estate mortgages. Lending has been following more closely the development of deposits (Figure 10), as a result of a growing segmentation of financial markets within the EMU since the financial crisis. Before August 2008, the borrowing of households and even more that of firms was negatively correlated with deposit growth, implying consumption smoothing and increasing access of firms to financial markets. Since the autumn of 2008, deposits and lending to households and firms have, in turn, both shown a correlation of above 0.7.

**Figure 10. Contributions to the annual growth rate of private sector deposits and loans**

In percentage points



Source: European Central Bank Data Warehouse.

As a consequence of a conservative lending policy, the Slovak banking sector is in good shape. According to Barisitz (2011) and UniCredit (2012), non-performing loans are among the lowest in the region. However, recently several regional financial supervisory institutions have issued macroprudential recommendations which effectively limit new loans to the stable domestic deposit base. The lack of domestic financial resources may present a significant burden on growth in next years. Thus, despite EMU membership, Slovakia could become subject to a possible credit-constrained growth recovery.

Unwinding the pre-euro-entry boom and post-euro-entry bust cycle is made more complicated by the ongoing euro crisis, which brought about a re-pricing of risks and contagion effects on emerging markets in general. The main consequence of the ongoing euro sentiment crisis is the disruption of financial markets and contagion on sovereign debt markets, in particular for small peripheral catching up economies, even if - as in the case of Slovakia - the fiscal situation is sound.

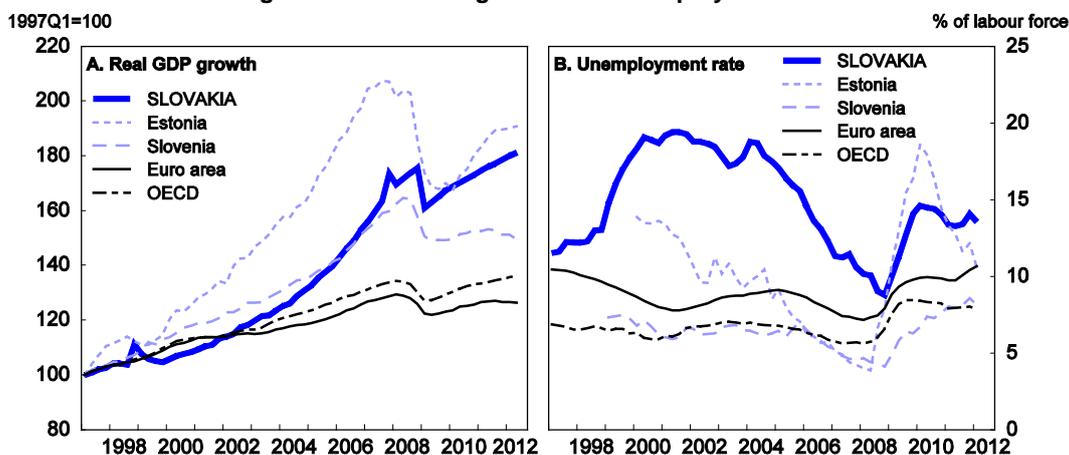
Since euro entry nominal convergence is limited to the Balassa Samuelson effect, which currently is masked by the extreme cyclical position of the economy with a closed output gap but a significant unemployment gap. Nominal convergence will therefore be slower than before the crisis and contribute to tighter financial conditions because of higher real interest rates associated with lower inflation expectations. Égert (2011) estimates that the Samuelson-Balassa effect (related to productivity differences between the traded and non-traded goods sectors) was, at 1.2 to 2.0 percentage points annually, larger in Slovakia than in other new member states of the EU. According to Oomes (2005) a maximum appreciation of up to 3 percentage points annually can be achieved by price changes related to faster productivity improvements in export-oriented manufacturing relative to domestically oriented services.

### **Interactions between euro adoption and the crisis went in both ways**

Although the 2009 crisis was a common factor, economic developments in Slovakia have been different from other recently-joining, small euro area member countries (Figure 11). As elsewhere, GDP fell significantly; however, contrary to Slovenia and Estonia, the recovery was forceful enough bring GDP back to its pre-crisis level during 2011. However, the labour market reaction was very strong in Estonia, where the unemployment rate has fallen, and relatively weak in Slovenia, where it has continued rising, while developments in Slovakia have been in-between, as unemployment has been stuck at high levels. What is not immediately clear is what caused the occurrence of a jobless recovery with relatively high rates

of GDP growth in Slovakia and the nature of the constraints the country faces for increasing the job-richness of the ongoing strong recovery.

Figure 11. Real GDP growth and unemployment rate



Source: OECD, OECD Economic Outlook database.

The adoption of the euro in Slovakia happened after a long boom period but just before the outbreak of the financial crisis. This timing was particularly advantageous in the sense that the accession criteria (in particular the fiscal criteria) were easier to meet than for Estonia, which joined just one year later. Estonia had to implement a 10% fiscal consolidation package to keep the general government deficit in line with the euro-accession criterion. At the time of the accession monitoring period in Spring 2008, the benchmark Slovak 10-year bond rate was still unaffected by the re-assessment of sovereign risks, fiscal balances were still benefiting from the final stages of the boom and inflation was being restrained by two successive revaluations of the Slovak koruna.

Notwithstanding the positive effects of introducing the euro, the interaction of the crisis and the strong real appreciation in the run-up to joining the euro area, generated challenges which are still important for recent economic developments:

- First, the exchange rate was probably locked in at a too high level.
- Second, the focus of fiscal policy on nominal targets to meet the Maastricht criteria meant that Slovakia possibly missed the opportunity to run a stricter fiscal course during the boom years. As a result, it inherited a pro-cyclical policy bias, which made fiscal expansion during the crisis particularly costly and painful to reverse.
- Third, the crisis radically changed the external environment of the highly export-dependent Slovak economy.

Nevertheless, the early decision on euro adoption may have ensured that Slovakia faced the financial crisis with lower vulnerabilities than other countries. Euro membership also meant early participation in all collective crisis-related measures and hence much more financial and capital market stability (IMF, 2011).

Despite euro adoption Slovakia has avoided a credit boom and bust scenario (Figure 12A), the reason mainly being the outbreak of the crisis simultaneously with euro adoption and the relatively cautious lending policy of banks before that. Slovenia (euro adoption in 2007) and Estonia (euro adoption in 2010 and currency board since the early nineties) experienced a rapid credit expansion before the crisis

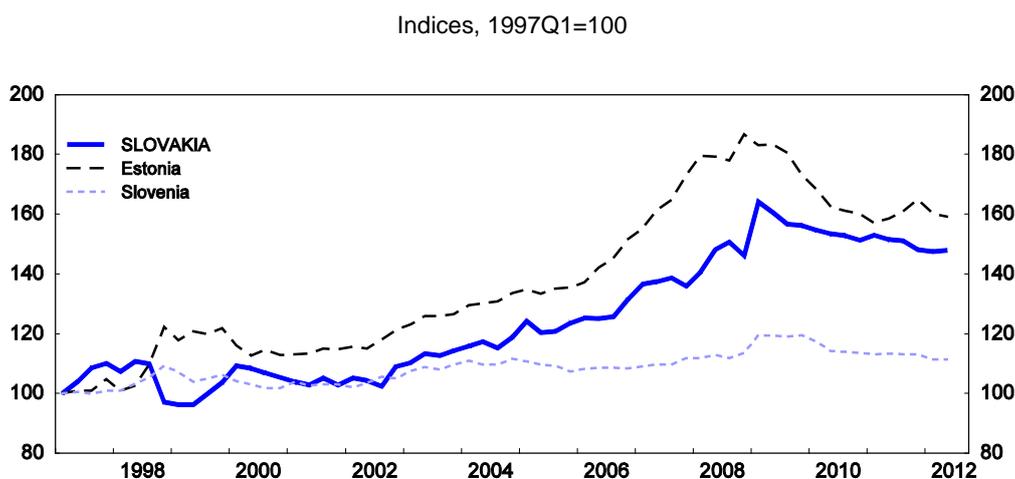
(Brixiova *et al.*; 2010). For Estonia, and to a lesser extent Slovenia, strong deleveraging needs imposed a burden on the export-led recovery. By contrast, Slovakia recorded a relatively moderate increase in the ratio of credit to GDP, from 30 per cent in 2006 to 39 per cent in summer 2008 and immediately after euro adoption the credit share hiked further to 46 per cent in the first quarter of 2009. It then stagnated during the financial crisis, avoiding a strong deleveraging episode. Overall, credit development in Slovakia was not characterised by the accumulation of financial vulnerabilities to the same extent as in other emerging economies in Central and Eastern Europe (Fidrmuc and Hainz, 2010).

Slovakia achieved a substantial reduction in gross public debt during the preparations for the euro adoption (Figure 9B). Starting with a favourable public debt position of around 50 per cent of GDP in 2000, during the conversion process Slovakia reduced the debt level to only 28 per cent of GDP in 2008. However, the pressure on fiscal discipline was significantly reduced by euro adoption. Correspondingly, public expenditure revived as a response to the financial crisis and the debt to GDP ratio nearly reached its initial level, at 43 per cent. By contrast, fiscal developments in Slovenia were characterised by a smaller decline in debt prior to euro adoption but a much steeper increase in public debt as a consequence of the crisis. Estonia, which entered the euro area only in 2010, after the financial crisis, has kept the public finances stable and below 3% of GDP during the whole period.

***Slovakia has entered the euro area with a probably overvalued exchange rate***

The ten years prior to the crisis were characterised by a rapid growth of GDP in Slovakia of around 6%, about three times the euro area average. Rapid convergence came hand in hand with the strongest nominal and real appreciation among OECD member countries, outpacing the safe havens of Switzerland and Japan as well as resource-rich globalisation winners like Canada and Australia. Inflation and unit labour cost growth above the euro area average contributed to nominal convergence and added to the real appreciation stemming from nominal appreciation. Currency revaluations accelerated this development shortly ahead of the crisis. As a result, the Slovak currency appreciated by nearly 30 per cent in real terms between 2006 and 2009 (Figure 12). The financial crisis was also accompanied by an external (price) competitiveness shock for Slovakia because several neighbouring economies in Central Europe reacted to weaker external demand by strong competitive depreciations: the real effective exchange rate appreciated by a further 9 per cent in 2009, after the country had entered the euro area.

**Figure 12. Real effective exchange rate based on unit labour costs**

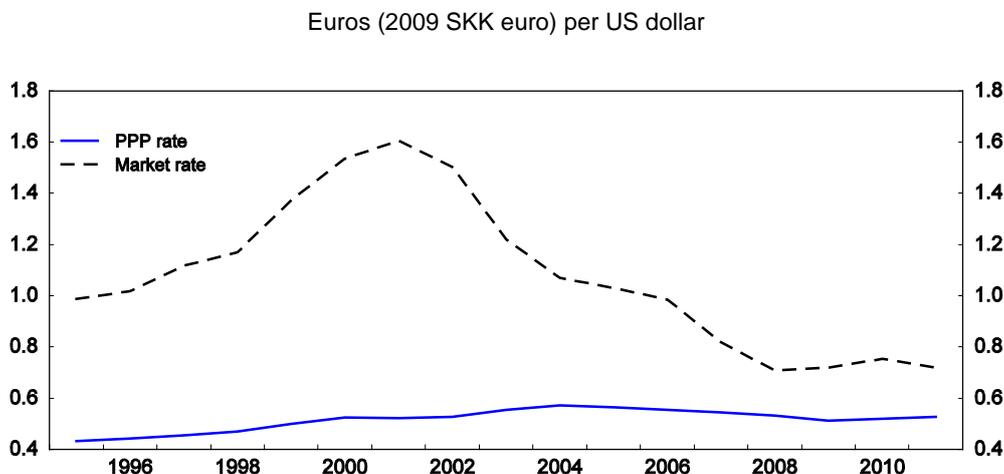


Source: OECD, OECD Economic Outlook database.

While it is normal that a rapidly growing economy also experiences a real exchange rate appreciation, it may nevertheless be questioned whether the acceleration of appreciation immediately before the crisis would not have been reversed if the nominal exchange rate had not been fixed just at the outbreak of the crisis. Considering that regional peers had strongly depreciated their currencies by between 5% (Czech Republic), 10% (Hungary) and 20% (Poland), it is not far-fetched to conclude that Slovakia entered the euro area with an exchange rate which turned out to be overvalued in the face of the crisis. This is not in contradiction with the IMF (2012) assessment that Slovakia does not suffer from an external imbalance, because competitiveness has been restored via an endogenous adjustment, which has included wage restraint and productivity-increasing investment.

Since euro adoption, real exchange rate movements have been determined mainly by the inflation and unit labour cost differentials vis-à-vis Slovakia's main trading partners. Actually, inflation has shown a relatively large degree of fluctuation in this period. The adoption of the euro arrested the earlier appreciation of the nominal euro exchange rate and related declines in import prices. Thus, domestic inflationary pressures were fully translated into rising inflation in the second half of 2008. However, the financial crisis exerted a strong downward pressure on inflation. Thus, inflation declined to less than 1 per cent in 2009 and 2010, below the average Balassa-Samuelson contribution to inflation because of the nominal convergence of non-traded goods prices. It could therefore be concluded that Slovakia came close to a state of “effective” deflation, with negative consequences for domestic demand. Simultaneously, wage increases decelerated dramatically from around 8% before the crisis to less than 1% in 2011. Indeed, nominal price level convergence came to a halt from about mid 2008 (Figure 13). Contrary to other countries, labour productivity increased strongly after the crisis – outperformed only by Estonia, helping to keep unit labour costs down and to reverse the excessive pre-crisis real appreciation to some extent.

**Figure 13. Purchasing power parity (PPP) relative to market rate**



Source: OECD, OECD Economic Outlook database.

Euro adoption changed the composition of drivers of growth dramatically. Disinflation, enforced by the large output gap and increased unemployment, contributed to wage moderation and imposed a cap on job-rich domestic demand growth. Together with sizeable productivity increases, wage moderation allowed modest real exchange rate depreciation of about 2 per cent in 2010 and 2011, helping to prevent employment in manufacturing falling more strongly, but not generating new employment. However, the pace of exchange rate depreciation was considerably slower than that of the appreciation before the crisis, indicating less capacity for internal devaluation than present in Estonia (Figure 12).

It is interesting to note that the development of the real exchange rate was similar before the crisis in Estonia and Slovakia, although in Estonia it was only driven by differences in unit labour costs and not by changes in the nominal exchange rate, while it was completely different for Slovenia (Figure 13). This pattern also corresponds to a different development of unemployment, which fell strongly in Estonia, stayed high in Slovakia and increased in Slovenia. Domestic demand in turn showed healthy growth in Estonia, stagnated in Slovakia and appears to nose-dive in Slovenia (Table 1). The next section explores the reasons why domestic demand growth in Slovakia is so weak.

**Table 1. Domestic demand growth in Estonia, Slovakia and Slovenia, 2007-2014**

	2007	2008	2009	2010	2011	2012	2013	2014
Estonia	9.2	-9.0	-21.3	1.3	9.4	4.2	3.4	3.3
Slovakia	6.3	6.0	-6.7	3.8	1.1	0.0	0.5	1.5
Slovenia	9.0	3.3	-10.0	-0.3	-0.7	-5.9	-5.1	-1.0

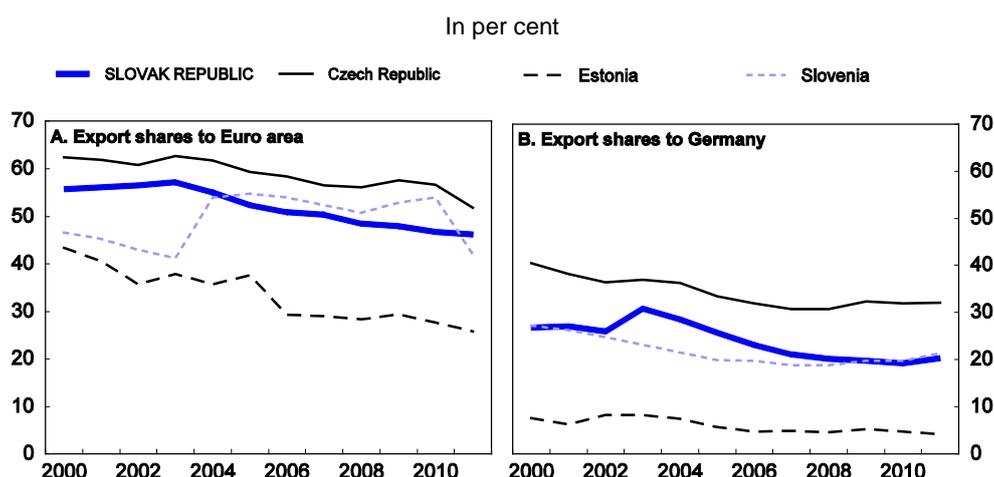
Source: OECD Economic Outlook No. 92, November 2012

## Spillover effects from the euro area crisis are large

### *Trade linkages were strengthened with FDI inflows*

Tight trade linkages with Germany and other euro area countries mean that growth shocks in those countries (often themselves being caused by external shocks, as in the case of Germany) are transmitted to Slovakia also via slower trade growth. The trade channel is further strengthened by strong financial links, including FDI. Slovakia is especially sensitive to developments in Germany and in the euro area, on which it has nearly the highest trade dependence (following Czech Republic, which is also an important trading partner of Slovakia) (IMF, 2012). Figure 14 shows that the weak economic performance of the euro area resulted in declining shares of this region in the exports of Slovakia and other new member states. These export market losses have been only partly compensated by exports to more rapidly growing destinations outside the euro area.

**Figure 14. Export shares to Euro area and Germany**



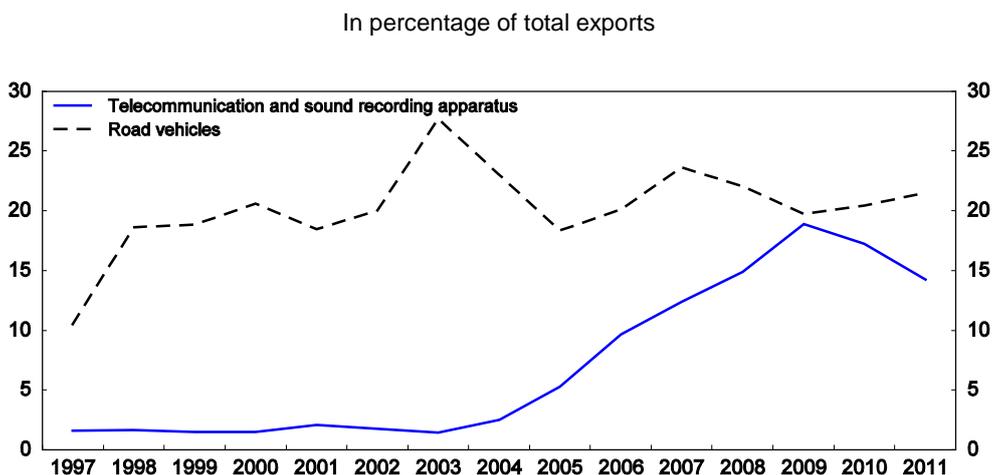
Source: OECD, International Trade by Commodity Statistics (ITCS) database.

It is interesting to note that the share of the euro area in Slovak trade started to decline before EU accession in 2005. It confirms that trade between CEECs and the existing EU member states was already at

its potential level before the EU accession (Bussière *et al.*, 2008). Moreover, the declining EU trade shares of Eastern European euro entrants cast doubt on the importance of the trade effects of a currency union, as intensively discussed in the literature (Frankel and Rose, 2002), but viewed rather sceptically before the Eastern enlargement of the euro area (Baldwin, 2006).

During the past decade, Slovakia has performed a successful restructuring strategy. Export industries have received special attention. Various measures were used to attract foreign direct investors, although this policy was efficient especially before the accession to the European Union. Most importantly, the automobile industry has become the most important exporting industry in Slovakia. According to Figure 15, the export share of the automobile industry doubled between 1997 and 2007 (to 20 per cent of total exports), but it was also subject to significant cyclical fluctuations. According to de Broeck *et al.* (2012), the reported improvements of exports were also strong in building fixtures and telecom equipment. The traditional export industries performed less well (iron and steel and footwear). With the exception of iron and steel, unit labour costs declined in all major export industries between 1998 and 2007. This is in line with the dominating importance of price competitiveness for Slovak exports (Fabrizio, Igan, Mody; 2007).

**Figure 15. Export shares of specific commodities**



Source: OECD, International Trade by Commodity Statistics (ITCS) database.

However, this export-led growth strategy has also had its vulnerabilities. The Slovak economy has become strongly dependent on foreign demand, especially from Germany and the euro area. Business cycles in the industries concerned are often more pronounced than in other industries, especially services. As an example during the 2008/9 downturn the drop in demand was especially strong for automobiles, iron and steel, and building materials. Furthermore, the export industries that have expanded are mainly capital intensive, meaning that growth of production translated only marginally into a reduction of unemployment. The focus on large companies increases the mismatch on the Slovak labour market, which is characterized by large regional imbalances. A significant part of unemployment is located in more remote rural regions with a low population density. Last but not least, the rapid success of the export-led growth strategy was also achieved by a concentration on mobile industries which, though they could move in quickly, could also leave easily, meaning that a relatively minor worsening of business conditions or cost competitiveness can result in significant capacity outflows.

### ***Macroeconomic linkages are dominated by real exchange rate rigidity***

The industrial mix in Slovakia is different from that of the euro zone, both because of the energy-intensity of the basic goods industries inherited from the central planning period and the concentration of foreign direct investment in specific export industries (such as the automobile sector and consumer electronics). As a consequence, the degree of co-movement of business cycles in Slovakia and the euro area is declining (Krugman, 1993).

Despite the significant real exchange appreciation in the run-up to euro adoption, Slovakia was among the most competitive new member states (de Broeck *et al.*, 2012). The 2012 IMF Article IV examination concludes that Slovakia does not have an external competitiveness problem, although the repercussions of maintaining competitiveness with productivity increases in existing enterprises and wage restraint for domestic demand are not taken into account, thereby overestimating the underlying strength of export capacity.

Euro introduction has often been associated with a slight increase in prices, especially of day-to-day consumer products and services (Brachinger, 2008, Fluch and Stix, 2005). This increases the perceived inflation, although overall inflationary effects remain small. Similar change-over effects were expected in Slovakia (Hüfner and Koske, 2008); however, the deflationary effects of the financial crisis generated a negative impact, which lowered inflation in Slovakia up to 2011.

Inflation accelerated again at the end of 2011 in a response to increasing energy and food prices, tax changes and rises in administrative prices. Inflationary pressures are likely to gain strength in the next recovery, which may not reduce the competitiveness of Slovak exports to the extent that wage determination has a strong plant-specific element and can thus be expected to respond to small competitiveness changes.

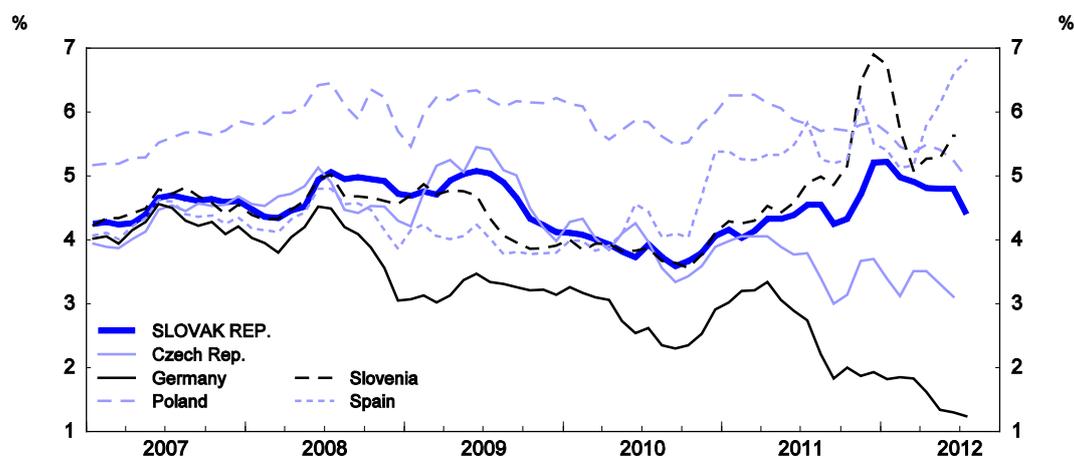
### ***Financial linkages are dominated by the foreign ownership of financial institutions***

The financial sector is dominated by foreign-owned banks (based in Austria and Italy and to a lesser extent the Czech Republic and Belgium), which acquired stakes in the privatisation process and established their own networks (IMF, 2012). The deep integration of financial markets implies that shocks such as the sovereign bond crisis rapidly spill over to Slovakia. Banking conditions generally improved in 2011, reflecting the improving conditions of the Slovak economy. The direct exposure of Slovak banks to foreign assets is rather low, but they can be affected through the impact of sovereign risk crises on their parent banks in case of some euro area countries. Similarly, Slovak government bonds represent a large share of bank securities portfolios (IMF, 2011). This can be a source of financial risks if contagion effects will be transmitted to Slovakia. The main challenge is therefore, to avoid the slightest risk of default, which could trigger an immediate shutdown of access to financial markets.

### ***The direct impact of the euro area debt crisis comes from contagion***

Bond spreads increased during the crisis due to a general increase in risk aversion. Credit ratings have also been affected by countries' contributions to rescue funds (a major justification for the recent across-the-board S&P downgrade). Slovak bond spreads increased significantly from mid 2011 (by 328 basis points compared to Germany in December 2011, the seventh highest spread in the euro area) and Slovakia was downgraded by Standard & Poor's and Moody's at the beginning of 2012. Despite the downgrading, bond spreads remained constant and even decreased slightly in the spring of 2012 (Figure 16). Moreover, the increase in Slovak government bond rates remained below that experienced by Slovenia. Finally, despite new hikes of government bond rates in Spain in summer 2012, Slovak government bond rates have remained constant, which indicates a certain degree of market confidence.

Figure 16. 10 year-government bond rates



Source: OECD, OECD Economic Outlook database.

At the beginning of 2012, two rating agencies downgraded the long-term sovereign credit rating of the Slovak Republic, Standard & Poor's from A+ to A Moody's from A2 to A1. These actions were a part of a downgrading of nine European countries by both rating agencies (but not by Fitch). The downgrade for Slovakia was explained partially by uncertainties regarding the development in the euro area and its impact on Slovak economy. Behind these factors OECD analysis of ratings in emerging economies showed that the rating for Slovakia corresponded relatively closely to the level implied by the standard fundamentals (macroeconomic developments and institutional and political risks) (OECD, 2010a). In particular, low inflation, low public debt and output growth were the main determinants of the advantageous rating of Slovakia. In turn, OECD (2010a) pointed to political risk and institutional effectiveness as the main areas of weakness. Actually, all factors stressed by this analysis have worsened recently. This confirms that Slovakia has to strengthen her institutional reform in order to maintain its ratings.

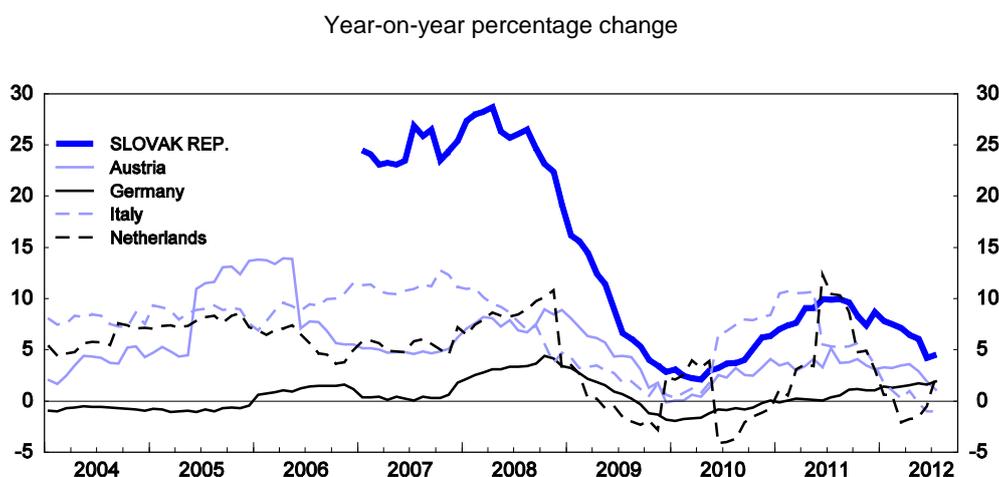
#### *Indirect effects come through parent banks lending strategies*

Lending conditions, notably in the case of a fully foreign-owned banking sector, increasingly depend on the situation of the banking sector in countries from which the parent banks originate (mainly Austria, but also Belgium, Germany, Italy, Netherlands).<sup>1</sup> Figure 17 shows the importance of foreign owned banks in the banking system and its impact on economic development. The high degree of co-movement between Austrian, Italian and Slovak credit growth confirms that credit growth is driven by the situation in the parent banks. In particular, credit growth rates reached 30 per cent annually before the financial crisis, this being about four times higher than in Austria. However, credit growth rates dropped to about 5 per cent in both countries in 2010. The difference between Slovak and source-country credit developments increased only slightly in the past year, which confirms the role of source country factors.

Correlation analysis confirms these findings. Before the financial crisis, Slovak credit growth reported a medium degree of correlation (0.6) with the source countries (except for Italy with negative correlation). After the financial crisis, the correlation increased to 0.9 between Slovakia and Austria, while it remained largely unchanged for the other countries.

1. In 2009, more than 80% of all banks assets were controlled by Austrian (Erste Group Bank, 21%; Raiffeisen Zentralbank, 17%; Volksbank, 3%), Italian (Intesa San Paolo, 19%; Unicredit, 6%) and Belgian (KBC Bank, 11%; Dexia, 5%) groups. (IMF, 2011 Article IV).

**Figure 17. Loans to private non monetary financial institutions**



Source: European Central Bank Data Warehouse.

### **What are the domestic and foreign imbalances of the Slovak economy?**

Imbalances are illustrated by a jobless recovery, stalling convergence, and a persistently high unemployment rate. Unemployment had reached 20 per cent of labour force in the early 2000s. However, strong growth and convergence brought a reduction in the unemployment rate to a low of 10 per cent in 2008. Following this, the fall in exports in 2008/9 was associated with a new increase in unemployment to nearly 15 per cent. The jobless recovery of 2011 did not succeed in improving the situation in the labour market. Entrants have been affected especially strongly by the economic downturn leading to a youth unemployment rate of 33%. A similar situation obtains for unqualified labour, whose situation had actually worsened during the period of economic convergence. Women, on the other hand, have not been significantly more affected by unemployment than men.

The following imbalances – of domestic and foreign origin – need to be tackled in order to push the economy more towards a job-rich growth which is high and sustainable enough to underpin a continuation of the successful catch-up process of the early to the late 2000s:

- The government tax base depends mainly on consumption taxes and taxes on wages. Both contribution bases have a rather weak medium term outlook. Taxation of property and environmental consumption is low.
- Risk assessment by rating agencies is increasingly concerned about the inability to combine sound public and private balance sheets with sustainable economic growth. For Slovakia there is a tension between fading external drivers of growth and large and growing consolidation needs.
- Export capacity is dependent on the competitiveness of existing FDI plants with little or no integration into local supply networks and a weak outlook for job creation. Competitiveness is driven by wage restraint and productivity increases and less by the development and exploitation of comparative advantage in knowledge intensive operations with a high local value added content and a high job creation capacity.

- Domestic demand depends on income generated by the foreign-owned export sector. Adverse external shocks are therefore not mitigated, but rather propagated by the positive correlation of private consumption and residential investment with income growth in the export sector.

Domestic sources of growth are not well developed. Spending for innovation purposes is low and the interaction between domestic knowledge producers and the economy is weak. Regional mobility is low and regional differences in labour market performance are large. Social housing is not geared towards regions with a growing employment potential. Capital market financing of business start-ups is underdeveloped. The lending of the financial sector is restricted to the local deposit base, which may become a constraint once a new growth cycle sets in. Consumption and mortgage financing are overrepresented. The green growth potential is far from fully utilised (OECD, 2010b).

The jobless recovery in Slovakia fits well with considerations about the recovery pattern after a financial crisis (Calvo *et al.*, 2012). The growing risk aversion of lenders increases the ratio of the collateral value to the loan, which favours capital intensive investment projects in existing enterprises. Maintaining the employment level during a financial crisis would therefore require a larger wage adjustment than what would follow from the cyclical response of wages to increasing unemployment. The consequence of reduced lending by the financial sector is a combination of wage and job restraint. This underlines the importance of a sound financial sector for the recovery from a financial crisis.

## BIBLIOGRAPHY

- Anioła, P., Golaś, Z. (2012), “Differences in the Level and Structure of Household Indebtedness in the EU Countries”, *Contemporary Economics*, Vol. 6 (1), 46-59
- Artis, M. J., Fidrmuc, J., Scharler, J. (2008), “The transmission of business cycles”, *Economics of Transition* 16(3), 559-582.
- Backé, P., Wójcik, C., (2008). Credit booms, monetary integration and the new neoclassical synthesis, *Journal of Banking and Finance* 32(3), pp. 458-470.
- Baldwin, R. (2006). ‘The euro’s trade effects’, *Working Paper No. 594*, ECB, Frankfurt.
- Barisitz, S. (2011). “Nonperforming Loans in CESEE – What Do They Comprise?” *Focus on European Economic Integration No. 4*, Oesterreichische Nationalbank, 46-68, [www.oenb.at/de/img/feei\\_2011\\_q4\\_studies\\_1\\_tcm14-241680.pdf](http://www.oenb.at/de/img/feei_2011_q4_studies_1_tcm14-241680.pdf).
- Berka, M., Devereux, M. B., Engel Ch. (2012), “Real Exchange Rate Adjustment in and out of the Eurozone”, *American Economic Review: Papers & Proceedings* 2012, 102(3): 179–185.
- Brachinger, Hans Wolfgang, (2008). “A new index of perceived inflation: Assumptions, method, and application to Germany,” *Journal of Economic Psychology, Elsevier*, vol. 29(4), pages 433-457, August.

- Brixiova, Z., M. Morgan and A. Wörgötter (2009), "Estonia and Euro Adoption: Small Country Challenges of Joining EMU", *OECD Economics Department Working Papers*, No. 728, OECD Publishing. doi: 10.1787/220860037027.
- Brixiova, Z. and B. Egert (2012), Labour Market Reforms and Outcomes in Estonia, *Comparative Economic Studies*, 54, 103–120
- Brixiova, Z., L. Vartia and A. Wörgötter (2010), "Capital flows and the boom-bust cycle: The case of Estonia," *Economic Systems, Elsevier*, vol. 34(1), pages 55-72, March.
- Bussière, M., Fidrmuc, J. Schnatz, B. 2008. EU Enlargement and Trade Integration: Lessons from a Gravity Model, *Review of Development Economics* 12(3), 562-576.
- Calvo, G., A., F. Coricelli and P. Ottonello (2012), The Labour Market Consequences of Financial Crises with or without Inflation: Jobless and Wageless recoveries, *NBER Working Paper* 18480.
- Égert, B., (2011), Catching-up and inflation in Europe: Balassa-Samuelson, Engel's Law and other culprits. *Economic Systems* 35(2), 208-229.
- de Broeck, M., Mehrez, G., Guscina, A., (2012), "Assessing Competitiveness Using Industry Unit Labor Costs: an Application to Slovakia", *Working Papers* 12/107, International Monetary Fund, [www.imf.org/external/pubs/ft/wp/2012/wp12107.pdf](http://www.imf.org/external/pubs/ft/wp/2012/wp12107.pdf).
- Fabrizio, St., Igan D. and Mody A. (2007), The Dynamics of Product Quality and International Competitiveness, *Working Paper* 07/97, International Monetary Fund, [www.imf.org/external/pubs/ft/wp/2007/wp0797.pdf](http://www.imf.org/external/pubs/ft/wp/2007/wp0797.pdf)
- Fidrmuc, J., Hainz, C., (2010), Default rates in the loan market for SMEs: Evidence from Slovakia. *Economic Systems* 34 (2), 133-147.
- Fidrmuc, J., Senaj, M., (2012), Human Capital, Consumption and Housing Wealth in Transition, *Working Paper* No. 2, National Bank of Slovakia, Bratislava, [www.nbs.sk/\\_img/Documents/PUBLIK/WP\\_2-2012.pdf](http://www.nbs.sk/_img/Documents/PUBLIK/WP_2-2012.pdf).
- Fluch, M. and Stix, H. (2005): "Perceived Inflation in Austria – Extent, Explanations, Effects", *Monetary Policy & the Economy*, Q3/05, pp. 22–47. Vienna: Oesterreichische Nationalbank. [www.oenb.at/en/img/mop\\_2005\\_q3\\_analysis2\\_tcm16-34757.pdf](http://www.oenb.at/en/img/mop_2005_q3_analysis2_tcm16-34757.pdf).
- Frankel, J. and Rose, A. (2002), "An estimate of the effect of common currencies on trade and income", *Quarterly Journal of Economics*, 117, 437-466.
- Fuentes, A. (2007), "Improving Employment Prospects in the Slovak Republic: Building on Past Reforms", *Economics Department Working Papers*, No. 579, OECD Publishing. <http://dx.doi.org/10.1787/081484472812>.
- Hüfner, F. (2009), "Adjusting Housing Policies in Slovakia in Light of Euro Adoption", *Economics Department Working Papers*, No. 682, OECD Publishing, doi: 10.1787/226173687724.
- Hüfner, F. (2011), "Increasing Public Sector Efficiency in Slovakia", *Economics Department Working Papers*, No. 839, OECD Publishing, doi: 10.1787/5kgj3l0m0q0r-en.

- Hüfner, F. and Koske, I., (2008), "The Euro Changeover in the Slovak Republic: Implications for Inflation and Interest Rates", *Economics Department Working Papers*, No. 632, OECD Publishing, doi: 10.1787/240631807010.
- IMF (2011), "Slovak Republic: 2011". Article IV Consultation—Staff Report; Informational Annex; and Public Information Notice on the Executive Board Discussion, *Country Report* No. 11/122, IMF Washington, [www.imf.org/external/pubs/ft/scr/2011/cr11122.pdf](http://www.imf.org/external/pubs/ft/scr/2011/cr11122.pdf).
- IMF (2012), "Slovak Republic: 2012 Article IV Consultation—Staff Report"; [www.imf.org/external/pubs/ft/scr/2012/cr12178.pdf](http://www.imf.org/external/pubs/ft/scr/2012/cr12178.pdf).
- Koske, I. (2009), "Achieving Fiscal Flexibility and Safeguarding Sustainability: The Case of Slovakia", *Economics Department Working Papers*, No. 681, OECD Publishing, doi: 10.1787/226231818862.
- Krugman, P., (1993), "Lessons of Massachusetts for EMU", Torres, F., Giavazzi, F. (eds), *Adjustment and Growth in the European Monetary Union*, Cambridge: Cambridge University Press.
- Morvay, K., Okáli, I. Gabrielová, H., Hvozdíková, V., Šikulová, I., Frank, K. Jeck, T., (2012), "Economic Development of Slovakia in 2011 and Outlook Up to 2013", *Ekonomický časopis/Journal of Economics*, forthcoming.
- OECD (2007), *Economic Surveys: Slovak Republic*, Paris.
- OECD (2009), *Economic Surveys: Slovak Republic*, Paris.
- OECD (2010a), Annex 2.A1, Estimated models for EMBI spreads and credit ratings, OECD Economic Surveys, Turkey, OECD Paris, 96-99.
- OECD (2010b), *Economic Surveys: Slovak Republic*, Paris.
- OECD (2012a), Economic Outlook No. 91, Paris.
- OECD (2012b), Employment Outlook, Paris.
- OECD (2012c), *Economic Surveys: Slovak Republic*, Paris.
- Oomes, N., (2005), "Maintaining Competitiveness Under Equilibrium Real Appreciation: The Case of Slovakia," *IMF Working Papers* 05/65, International Monetary Fund.
- Sramkova L. (2010), "Output Gap and NAIRU Estimates within State-Space Framework: An Application to Slovakia", *Working paper*, Ministry of Finance.
- Staehr, K. (2010), The global financial crisis and public finances in the new EU countries in Central and Eastern Europe: Developments and challenges, *Public Finance and Management*, Vol. 10, No. 4.
- UniCredit, (2012), "Banking in CEE: The new normal", *CEE Banking Outlook*, January 2012, [www.bankaustria.at/informationpdfs/CEE\\_BankingOutlook\\_10012012\\_13h.pdf](http://www.bankaustria.at/informationpdfs/CEE_BankingOutlook_10012012_13h.pdf).
- Walch, N., Wörz, J. (2012), "The Impact of Country Risk Ratings and of the Status of EU Integration on FDI inflows in CESEE Countries", *Focus on European Economic Integration, Oesterreichische Nationalbank*, Issue 3, 8-26.