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ECONOMIC ANALYSIS FROM EUROPEAN COMMISSION'S DIRECTORATE-GENERAL FOR ECONOMIC AND FINANCIAL AFFAIRS

HIGHLIGHTS IN THIS ISSUE:

- *Net foreign liabilities of the Czech Republic increased by nearly 50% of GDP between 1999 and 2011*
- *Their level is still moderate compared with other EU-10 Member States*
- *The predominance of equity among foreign liabilities limits short-term financial risks*
- *However, investment inflows have fostered emergence of medium-term vulnerabilities*

The Czech Republic's Net International Investment Position

By Milan Lisický* and Petr Maleček**

External deficits may not be the true source of a problem but it is nonetheless prudent to be vigilant (Obstfeld, 2012).

Summary

This Country Focus analyses the accumulation of net liabilities by Czech residents with respect to the rest of the world. We show that, unlike most other EU-10 countries, the main driver of the deteriorating net international investment position (NIIP) has been investment in equity such as foreign direct investment (FDI). Valuation changes resulting from fluctuations in the exchange rate and asset prices have also tended to worsen the NIIP. We estimate that for the NIIP to stabilise at its current ratio to GDP, trade surpluses would have to exceed 5% of GDP on a permanent basis.

The bias towards equity and a low level of debt in the NIIP are positive factors that reduce the exposure of the Czech economy to international financial disturbances. We note, however, that the inflow of investment has contributed to the emergence of moderate vulnerabilities such as rising house prices and increasing indebtedness of households. Moreover, it went hand-in-hand with considerable wage growth in all sectors of the economy. This has led to a rising gap in unit labour cost between the tradable and non-tradable sectors because the non-tradable sector was not able to keep pace with the productivity increases achieved in the tradable sector.

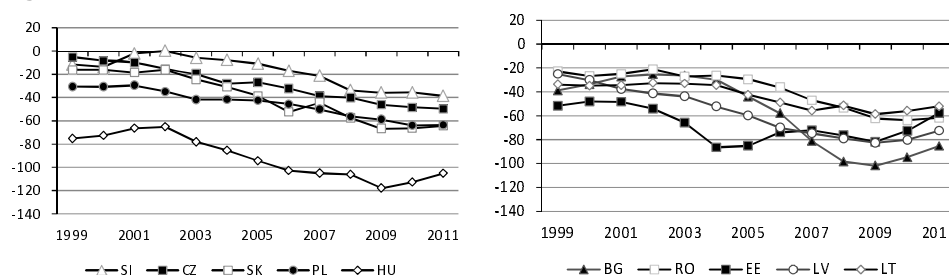
We conclude that, despite the numerous benefits foreign capital brought to the Czech economy, it has also given rise to risks that could undermine its competitiveness over the medium-term. Addressing these issues, especially by adopting measures to raise productivity in all sectors of the economy, would strengthen the sustainability of the Czech international investment position.

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Introduction

Steadily decreasing net international investment positions have been a characteristic feature of all Central and Eastern European EU Member States over the past decade, as shown in Figure 1. This trend reflects the catching-up process, which has often been partly financed through a mobilisation of foreign savings. With a NIIP falling from -5% of GDP in 1999 to -50% in 2011, the Czech Republic is no exception. The NIIP is a *stock* indicator derived from the balance of payments. It reflects the value of accumulated assets and liabilities vis-à-vis the rest of the world that result from investment in foreign businesses and international borrowings. Both the current account balance of the balance of payments and the NIIP (as a share of GDP) are often used as indicators of external vulnerability.

Figure 1: NIIP in EU-10 countries (national currencies, % GDP)



Source: Countries' National Banks, Eurostat.

Our aim is to re-examine the risks embodied in the NIIP-to-GDP ratio for the Czech Republic.

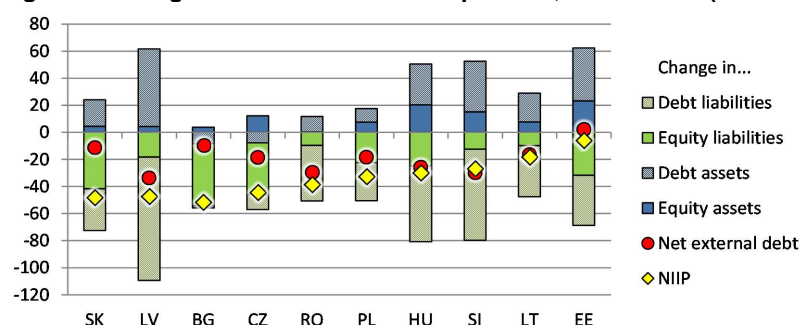
The mainstream view for catching-up countries, underpinned by the inter-temporal approach to the balance of payments (Obstfeld and Rogoff, 1996), is that the deterioration in the NIIP reflects a process of consumption smoothing. Prospects of higher income in the future generate expectations of higher returns on investment, which allow catching-up countries to attract capital for productive investment at the cost of temporary current account deficits. A build-up of liabilities thus helps achieve convergence, which facilitates their repayment. This Country Focus re-examines this view. It investigates the factors that have contributed to the deterioration in the Czech NIIP, compares it to the experience of the other EU-10 countriesⁱ and assesses the nature of the challenges that it has brought about. Many aspects pertinent to the sustainability of external positions of three EU-10 countries (Bulgaria, Hungary and Slovenia) were analysed in In-depth Review reports published by the European Commission in May 2012 (EC, 2012c, d, e).

International Investment Position in EU-10 countries

Rising indebtedness accounted for the deteriorating NIIP in most EU-10 except for the CZ, BG and SK.

Starting from the onset of the transition process in the 1990s, the net IIP positions deteriorated in all EU-10 countries because their liabilities to the rest of the world grew faster than assets of domestic residents abroad (see Figure 2). On the liability side, all EU-10 countries attracted significant capital inflows and saw their foreign liability-to-GDP ratio increase, on average, from 73% at the beginning of 2000 to 136% at the end of 2011. This is not surprising given the initially low level of domestic capital and high capital needs during the convergence process. Foreign assets expanded at a slower pace, from 41% to 73% of GDP during the same period. It is noteworthy that the change in the net IIP was almost equal to the change in net external debt in most countries. Only the Czech Republic, Bulgaria and Slovakia avoided a large-scale accumulation of net debt liabilities, which may have helped to preserve the resilience of their banking sectors during the crisis.ⁱⁱ

Figure 2: Change in the NIIP and its components, 2000 – 2011 (% of GDP)



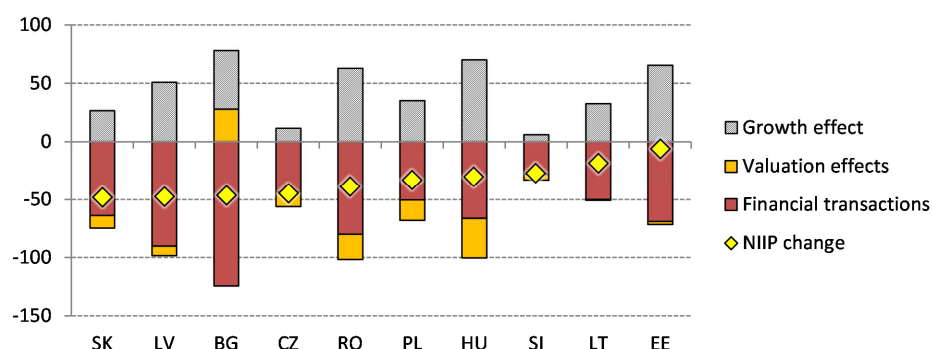
Note: See footnote (ii) for definitions. Data for BG start from 2001. Source: Eurostat; authors' calculations.

The changes in stocks of assets and liabilities reported in Figure 2 can, in principle, occur for three reasons. First, they may reflect transactions recorded in the financial account of the balance of payments, i.e. new additions to the NIIP (*transaction effect*). Secondly, the stocks of financial instruments are subject to holding gains/losses that change the value of accumulated assets and liabilities (*valuation effect*). Finally, when expressed as a share of GDP, changes in the denominator can affect the ratio as well (*growth effect*).

Revaluations of stocks in the NIIP proved to be larger for countries with a floating currency.

Most of the decrease in the NIIP in the EU-10 countries was due to the transaction effect and reflects the sustained financial inflows over the last decade (see Figure 3). The contribution of valuation changes was smaller and more varied across countries. It played a larger – negative - role in countries with floating exchange rates (Hungary, Romania, Poland, and the Czech Republic). Bulgaria, with a positive contribution from valuation effects, is an outlier. Bulgaria's NIIP figures were influenced by debt rescheduling at the beginning of the decade, which affected the value of its debt liabilities during the period under analysis; from 2004 onwards, Bulgaria has been following the experience of other countries with a fixed exchange rate. Dynamic GDP growth, supported by the inflow of foreign investment, has in all countries helped attenuate the rise in the NIIP-to-GDP ratio.

Figure 3: Decomposition of the change in the NIIP, 2000 – 2011 (% of GDP)



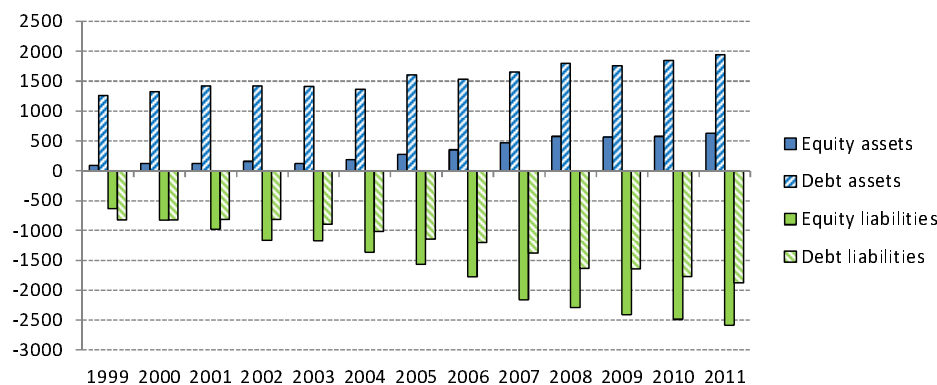
Source: Eurostat; authors' calculations.

International Investment Position in the Czech Republic

Stock of foreign equity in the CZ (such as FDI) has quadrupled since 1999...

In the Czech Republic, the NIIP-to-GDP ratio decreased by 45 pps during the past decade. Figure 4 shows that the two most dynamic items in the NIIP were purchases of equity: equity-based liabilities increased by more than 300% and equity-based assets by even more, although from a much smaller base. Net external debt increased primarily due to the accumulation of debt by Czech residents in the period 2003-08, while increases in debt assets, mostly due to the accumulation of the central bank's reserves, were much more limited. The onset of the crisis put these trends on a halt and the four groups of financial instruments shown in Figure 4 have posted more moderate growth since then. However, corrections in the total value of stocks were small and affected more the asset side of the NIIP. This is consistent with the fact that the Czech banking sector has not engaged in large cross-border debt operations as has been the case in some advanced economies.ⁱⁱⁱ

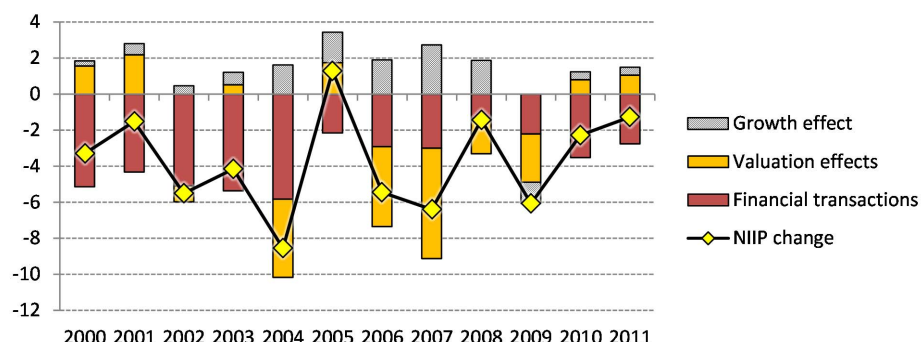
Figure 4: Stock of assets and liabilities in Czech NIIP (CZK bn, current prices)



Note: Liabilities are shown with a negative sign. Values are in current prices but the price-level effect (24% increase in the GDP deflator from 1999 to 2011) accounts only for a fraction of the nominal changes in the values of stocks. To interpret the magnitude of the figures, note that CZK 2500 bn corresponded to 66% of GDP in 2011. Source: Eurostat; authors' calculations.

Most of the changes described above were driven by transaction effects. Out of the 45 pps decrease in the NIIP-to-GDP ratio, 44 points were accounted for by financial inflows, while the negative contribution of valuation effects (13% of GDP) was almost exactly offset by the residual effect of nominal GDP growth (12% of GDP). Figure 5 shows the development of these components over time.

Figure 5: NIIP in the Czech Republic (% of GDP)

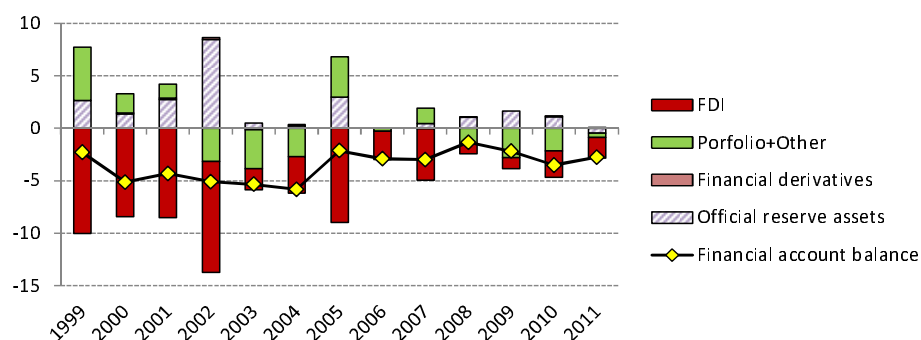


Source: Eurostat; authors' computations.

...but new equity FDI have been steadily decreasing, which suggests that a saturation point may have been reached.

Two significant features emerge in Figure 5. First, there seems to be a downward trend in net financial inflows (as a percentage of GDP), which started already some years before the onset of the crisis. Net financial transactions averaged 5% annually between 2000 and 2004 but decreased to around 3% in the period that followed. A decomposition of the effect into standard components of the balance of payments is shown in Figure 6. The large financial inflow in the first half of the decade was underpinned by FDI associated with the completion of the privatisation process, integration of Czech suppliers into foreign production chains stimulated by public FDI support, and also by the increase in penetration of the Czech market by large retailers. Once opportunities for big FDI projects were exhausted, the (net) inflow decelerated and portfolio and other investment gained in relative importance. Since 2006, the inflow of new equity FDI has been smaller than the relatively stable inflows of reinvested earnings (around 2% of GDP), which is yet another sign that foreign investment plans have shifted from an expansion mode to a saturation phase.^{iv} In 2011, the inflow of new equity FDI to the Czech Republic was to close zero, which reflects a greater dependence on the FDI flows from Western Europe compared to other EU-10 countries.

Figure 6: Net financial transactions (% of GDP)



Note: Negative values imply a build-up of net liabilities. Source: Eurostat.

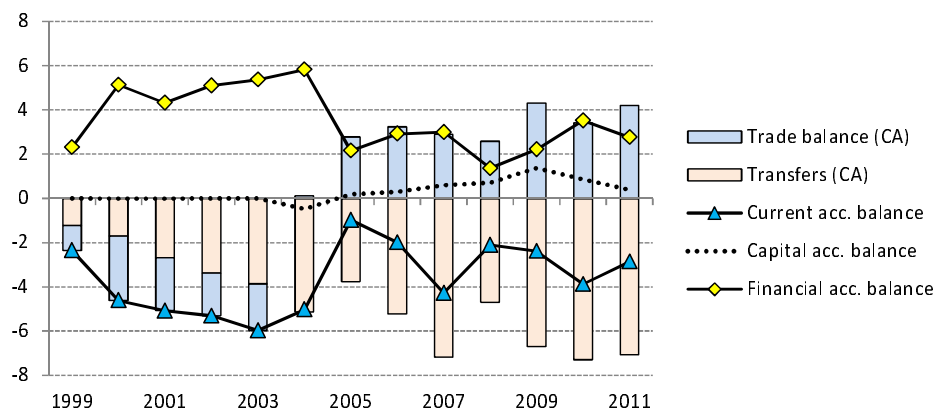
FDI helped increase trade balance but the profits they generate keep weighing on the current account.

The build-up of net liabilities in the financial account was mirrored by sustained deficits in the current account (see Figure 7). However, in parallel with the inflow of FDI, the trade balance (which forms part of the current account balance) swung to large positive values within a relatively short period of time. This development was facilitated by the geographical proximity of the Czech Republic to core European markets, which led foreign investors to enter export-oriented sectors to a larger extent than in other EU-10 countries. Incidentally, because of their exposure to international competition, these were also the sectors with greater potential for productivity growth compared to domestically-oriented sectors.^v However, the flipside to this development was growing deficits in the investment account, which records dividends and reinvested profits generated by foreign-owned companies. Because the investment account is also part of the current account, the overall

improvement in the latter was rather limited. We illustrate the relationship between returns to foreign-owned equity and the deteriorating NIIP in a greater detail in Figure 9.

In terms of the saving-investment balance, which links the current account balance to the use of disposable income in national accounts, the largest shortfalls originated in the sector of non-financial corporations. This was the case until 2008 when the average investment rate in this sector fell substantially (by 5 pps between 2008 and 2009) as the crisis started to unfold. Since then, current account deficits have been sustained by the deteriorating savings position of the general government.

Figure 7: Balance of payments (% of GDP)



Note: Transfers (CA) denotes the sum of the investment account balance and the balance of current transfers in the current account. The trade balance is the sum of the balances of trade in goods and in services. Source: Eurostat.

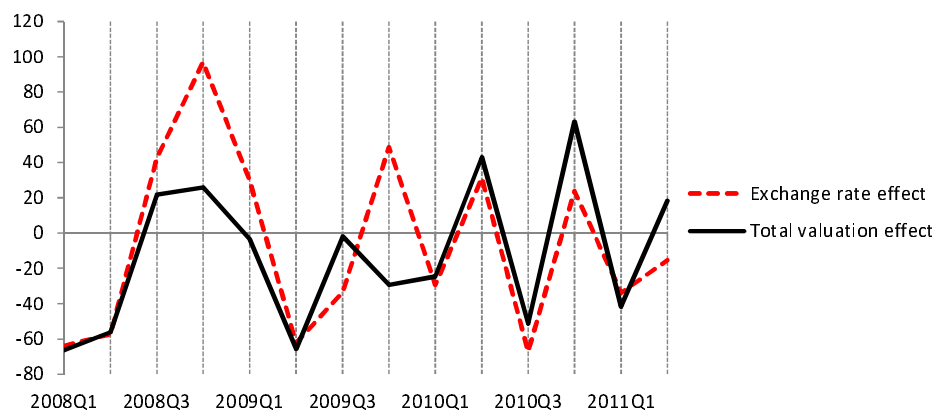
Re-valuations of stocks considerably contributed to the NIIP-to-GDP ratio in some years...

Another observation based on Figure 5 concerns the role of valuation effects. Re-valuation of assets and liabilities may affect the NIIP in both directions. Currency fluctuations are an obvious factor that could explain the impact of valuation changes in an economy with a flexible exchange rate because foreign assets and liabilities may be partly denominated in a foreign currency and therefore movements in the exchange rate induce changes in the NIIP.

According to estimates provided by the National Bank,^{vi} the Czech Republic (like most advanced economies) has a net creditor position in instruments denominated in foreign currencies and a net debtor position in domestic currency. In particular, while around 88% of assets, including international reserves, are denominated in foreign currencies, the corresponding share in total liabilities is only about 25%. The lower share of liabilities is due to the fact that nearly all equity liabilities (such as FDI in the domestic economy) are denominated in Czech koruna, while only about 50% of debt liabilities is denominated in foreign currencies. Figure 8 shows the part of valuation changes of the NIIP that is explained by currency fluctuations. It suggests that exchange rate fluctuations are a good predictor of the overall valuation effect.

...mostly due to fluctuations in the exchange rate. The CZ is a net creditor in foreign currencies.

Figure 8: Decomposition of valuation effects (bn CZK, quarterly data)



Source: Czech National Bank, authors' calculations.

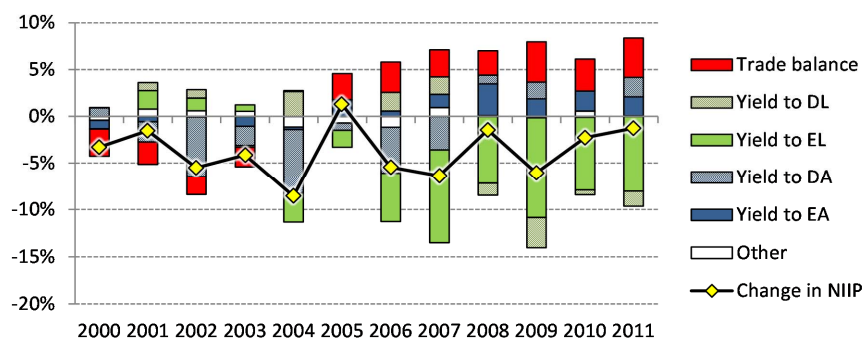
A net creditor position in foreign currencies implies that an effective depreciation,^{vii} all other things equal, tends to improve the NIIP. Several authors have concluded that depreciation could help the external re-alignment in some countries by both stimulating net

exports and increasing the value of net foreign assets (see e.g. Cavallo and Tille, 2006). The structure of the Czech NIIP suggests a similar conclusion. Following Higgins, Klitgaard and Tille (2006), we use the underlying currency structure of the NIIP and estimate that, other things equal, a 10% effective depreciation would improve the NIIP-to-GDP ratio by 3.4 pps.^{viii} Given the size of net liabilities, this seems too small to help improve the NIIP substantially. Nevertheless, given that the Czech Republic has a floating exchange rate regime, the adjustment can be facilitated by the valuation effect.

Reconciling stocks and flows

So far, we have described the NIIP separately from the point of view of transaction flows and re-valuations of accumulated stocks. Lane and Milesi-Ferretti (2007) show that identities linking the NIIP to the financial account of the balance of payments (BoP) allow for a consistent assignment of the transaction, valuation and growth effects to the financial instruments from which they originate. To apply this framework, which reconciles the NIIP stock with flows in the BoP, we proceed in two steps. First, we cast the financial account balance in terms of its counterparts in the current and capital account balances. Secondly, we merge the re-valuations of stocks of financial instruments with investment income recorded in the current account. For instance, an increase in the value of Czech assets abroad, either due to a genuine price increase in the foreign financial instrument or due to a depreciating *koruna*, is captured as higher investment income from assets abroad, i.e. an improvement of the current account balance. Because the investment income now also includes valuation changes, we label it as *yields* on the underlying instruments.

Figure 9: NIIP and flows in the balance of payments (% of GDP)



Note: 'Yields' refer to investment income from the current account plus valuation gains on a given type of financial instrument (where DL/EL stands for debt/equity liabilities and DAEA for debt/equity assets). 'Other' includes remittances from the investment account and transfers, both from the current and the capital account, and errors and omissions.

The initial decrease in the NIIP was due to negative yields on debt assets...

Figure 9 summarises the results of our calculations and points to three observations. The first is the large negative contribution of yields on debt assets, which was the main driver of the deterioration of the NIIP-to-GDP ratio before 2007. This was due to a relatively slow accumulation of foreign debt assets (including international reserves) compared to GDP growth and a substantial currency appreciation, which averaged 4% between 2000 and 2007. The recent positive contribution of this component is, however, likely to be temporary because it has been reinforced by exchange rate depreciation and below-average real GDP growth.

...but negative yields on equity liabilities took over as the driving force from 2006 onwards

Secondly, yields on equity liabilities have become the main driver of the deteriorating NIIP-to-GDP ratio since 2006. Average returns to foreign direct investment in the Czech Republic (measured as investment income on equity over stock of equity in $t-1$) reached two-digit figures in the past decade and were the highest among EU-10 countries; they peaked at 17% in 2007 and remained high also during the crisis (11.4% in 2009-2011). As the stock of foreign equity gradually rose, high returns, and especially the rising share of repatriated earnings, have therefore started to weigh on the NIIP. Slower growth in equity prices during the crisis somewhat moderated the negative contribution of equity liabilities through the valuation channel but as the domestic economy recovers and equity markets regain confidence, the yield of equity liabilities may increase further.

The trade balance has improved substantially but would need to improve further for the NIIP to stabilise.

The final observation is a restatement of the role of the trade balance mentioned earlier: in the first wave of accumulation of foreign liabilities, which was driven mostly by unsterilised FDI inflows, the financial surplus resulted in modest trade deficits. Once foreign investment projects matured, net exports started to rise (mostly exports of goods) and from 2005 onwards the trade balance has consistently been posting surpluses of 3-4%

of GDP. The crisis has not altered the trend in net exports substantially because both domestic and foreign markets were hit. How large would trade surpluses vis-à-vis the rest of the world have to be to stabilise the NIIP? Using the decomposition of the change in the NIIP to the components shown in Figure 9, we estimate that under plausible assumptions the trade balance would have to reach 5.6% of GDP over the medium-term for the NIIP to stabilise at its current level.^{ix}

Discussion and concluding remarks

In this note, we have documented the accumulation of net liabilities of Czech residents to foreigners. We have shown that, while a build-up of financial liabilities took place in all EU-10 countries, there are significant differences across countries in the nature of these liabilities. While the deterioration in the NIIP-to-GDP ratio was due to rising external indebtedness in most countries, in the Czech Republic, Bulgaria and Slovakia, the main driver was investment in equity such as FDI. We have further shown that gains/losses on holding foreign assets and liabilities, which arise from fluctuations in the exchange rate and asset prices, have so far tended to worsen the NIIP. Finally, for the NIIP to stabilise at the current level (relative to GDP), the trade balance would have to run sustained surpluses around 6% of GDP in the medium term. The international investment position is therefore likely to continue accumulating further net foreign liabilities over and above the levels that triggered adjustments in the current account balance and the exchange rate in other countries.^x What are the risks then?

The low level of external debt is a positive factor in assessing short-term risks...

The bias towards equity and a low level of debt in the NIIP is a positive factor when assessing the short-term risk of losing access to international capital markets. Gourinchas and Obstfeld (2012) find that countries that did not experience excessive leverage (which is often coupled with losing international competitiveness) were less susceptible to the financial crisis. In the Czech Republic external debt stood at 44% of GDP in 2011, the lowest among the EU-10 countries.^{xi} While the share of short-term liabilities (30%) was slightly above the EU-10 average, the short-term roll-over needs of the debt are still moderate given the relatively low level of debt. Moreover, the share of foreign-currency liabilities, which is a relevant indicator for countries with a floating exchange rate in case of disruptions in the currency market, is relatively low in the Czech Republic compared to other EU-10 countries not using euro as their currency.^{xii} The share of public borrowing in external debt has been fairly stable (around 20% of external debt) since 2005, with more than 95% of this in long-term liabilities. Overall, the low share of debt in foreign liabilities and its structure do not point to sizeable short-term risks.

...but there are medium-term challenges.

Does the equity-driven deterioration in the NIIP pose medium-term challenges? In a stylised case, where the deficit in the current account reflects only a redistribution of profits (transfer of wealth) generated from successful investment projects, there are few additional risks in the medium term.^{xiii} Foreign liabilities may remain on the economy's balance sheet for long and, when the foreign-owned corporations eventually cease to generate profits, the liability is erased from the NIIP through holding losses. However, the situation becomes less clear-cut if the financial inflows simultaneously allow the build-up of macroeconomic imbalances such as rising indebtedness, asset price bubbles or unsustainable wage growth that could undermine future productivity. Has this been the case in the Czech Republic?

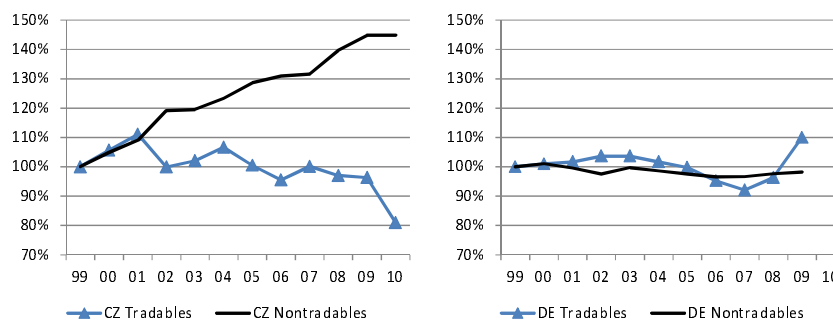
- The increase in external debt has been modest so far (see Figure 2), and so was the overall credit flow to the domestic private sector – EC (2012a) reports that the stock of private debt remains one of the lowest in the EU. However, there was a noticeable rise in household indebtedness especially in the years of the pre-crisis boom.
- Regarding asset prices, the real house price index compiled by Eurostat grew by 45% from 2005 to 2008, the sixth largest increase out of the 20 EU Member States for which data are available. The bubble has somewhat abated since but the house price index remains high.^{xiv}
- Finally, Figure 10 plots the development of nominal unit labour costs (nominal wage cost per unit of real output) in the tradable and non-tradable sectors. The pressure of international competition has forced producers of tradables to upgrade production technology, which allowed wages to increase without increasing unit labour costs.

Pay rises in the tradables sectors have subsequently spilled over into the non-tradable sector through both higher demand and the wage bargaining process. Consequently, unit labour costs in non-tradables rose nearly by 50% from 2000 to 2010.^{xv}

Some sectors are already undergoing adjustment...

These considerations, taken together, are a cause for concern. A fast build-up of debt among households may become an additional burden during a period of protracted stagnation of the economy, especially if coupled with rising unemployment. A decrease in the elevated house prices and cuts in public investment are already weighing on the construction sector. However, the impacts of higher indebtedness of households and falling house prices have been so far well absorbed by the strongly profitable Czech banking sector and have not had economy-wide repercussions.

Figure 10: Unit labour cost, CZ and DE, tradables and non-tradables (1999=100)



Note: Authors' calculations based on Eurostat data. ULC is defined as compensation to employees over real gross value added. See footnote (xiv) for the definition of sectors. Non-tradables account for 40% of the economy when public sector services are excluded.

...while others may follow. Unit labour cost in non-tradables may pose challenges for future growth...

High wage growth in the non-tradable sector^{xvi} is not a direct concern for international competitiveness, as non-tradables do not compete on global markets. However, they do affect the medium-term growth outlook because higher wage growth in non-tradables may hinder labour market adjustment towards industries that have more scope for productivity growth^{xvii} and because price pressures in non-tradables may lead to second-round cost pressures in the tradable sector.^{xviii} The performance of Czech exporters has been remarkable but Dubska (2012) documents that 75% of export sales are attributable to foreign-owned companies. Furthermore, labour productivity in manufacturing (the main tradable sector) is still the sixth lowest in the EU and is growing only at an average pace compared to other Member States.^{xix} If new equity FDI continues to decrease (a trend that was evident even before the crisis) and the price pressure from non-tradables carries on unabated, the growth prospects of the Czech economy could be considerably challenged.

...unless addressed with further productivity-enhancing reforms.

A thorough discussion of measures to address these medium-term risks is beyond the scope of this note. However, as pointed out in EC (2012b), there appears to be ample scope to improve the quality of the business environment, i.e. the institutional and regulatory framework, as well as the performance of research and education. Furthermore, wage restraint in the non-tradable sectors would help reduce the productivity gap between the tradable and non-tradable sectors.^{xx} Finally, a growth-friendly fiscal consolidation would likely contribute to reducing the current account deficit.

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ⁱ EU-10 countries comprise Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia.

ⁱⁱ Throughout this study, we define *equity assets* as the sum of the following IIP items: FDI (equity and reinvested earnings), equity portfolio investment and financial derivatives. *Debt assets* are the sum of other FDI, debt portfolio investment, other investment and reserve assets. *Equity and debt liabilities* are defined in a parallel manner (there are no international reserves on the liability side). *Net external debt* is then defined as a difference between debt assets and debt liabilities. Note that we treat financial derivatives as equity, in accordance with the External Debt Statistics Guide (2003).

ⁱⁱⁱ The rise in debt assets and debt liabilities for several advanced countries is reported in Obstfeld, 2012.

^{iv} A similar conclusion reaches Dubska (2012) when analysing the development of the share of foreign-owned enterprises.

^v Kinoshita (2011) reports that, out of 14 CEEC countries, the Czech Republic recorded the second largest FDI (as a percentage of GDP) in sectors producing tradable goods and shows empirically that a greater share of FDI in tradable sectors facilitates improvements in the trade balance. The point that the sectoral composition of FDI matters is also made by Babecky, Bulir and Smidkova (2008).

^{vi} Due to lack of data on the currency structure of the NIIP, we rely on estimates provided by the Czech National Bank (CNB) covering the period from Q1 2008 to Q2 2011. The estimate is based partly on data reported directly by the government, the CNB and banks but partly it is an informed guess of CNB's experts. The data provided divide the IIP into instruments denominated in CZK and an aggregate of other currencies. The exchange-rate effect is obtained by applying a relevant exchange rate to the value of foreign-currency assets and liabilities. The relevant exchange rate is typically vis-à-vis the euro; for reserve assets we use an exchange rate based on a basket of the euro and the dollar (the euro receives a weight of 68%) as a proxy for the actual currency composition of reserves; other NIIP items receive intermediate values (we assume that an average share of euro-denominated foreign-currency NIIP items of 80%).

^{vii} Since the currency mix is important in determining the size of the valuation effect, the depreciation is calculated against a basket of currencies that reflect the composition of foreign-currency assets and liabilities in the NIIP.

^{viii} This is a mechanical effect based on the currency structure of the NIIP. What we are calculating here is only the direct effect on the numerator of the NIIP-to-GDP ratio, i.e. a partial-equilibrium analysis. A depreciation leads also to changes in the prices of imports and exports and possibly real wealth effects (if valuation effects are perceived to be permanent), which can affect the denominator.

^{ix} This estimate assumes that the exchange rate fluctuates around its current level so that the average change is zero. Should currency appreciation resume half of its trend from 2000-2011, the NIIP-stabilising trade balance would rise to 6.0% of GDP (or more, factoring in the typical impact of stronger currency on net exports). As argued, an appreciation increases the required surplus because of the particular currency structure of the Czech NIIP. Higher real GDP growth would lower the required trade surplus but its positive effect is likely to be compensated by higher returns on domestic equity, which are a function of domestic growth, and would be also possibly accompanied by a stronger koruna. A higher GDP deflator would lower the NIIP-to-GDP ratio through its direct effect on the denominator: doubling the growth rate of the deflator would decrease the NIIP-stabilising trade balance from 5.6% to 4.8%. The following assumptions underlie these results: real GDP growth equals 1.7% (average of European Commission's 2012 spring forecast for 2012-16), GDP deflator is 1.5% (2000-11 average), the elasticity of valuation effects to the exchange rate is computed based on the CNB data, other valuation changes are zero, flows on the investment account (measured as % returns to the corresponding IIP stocks) are equal to their 2000-11 averages, other components of the balance of payments are zero, and the starting value for NIIP/GDP is that of the end of 2011. Details of the computation can be found in Lane and Milesi-Ferretti (2007).

^x Benhima and Havrylychuk (2006) find that level of the NIIP in the Czech Republic exceeds the equilibrium NIIP based on fundamentals such as catching-up opportunities, the demographic structure and the return on capital. Consequently, when included in an empirical crisis-prediction model, the Czech Republic becomes a borderline case regarding the likelihood of a crisis.

^{xi} Gross external debt is from WB External Debt Statistics (Q4 2011); GDP is converted to USD (Eurostat data).

^{xii} This is based on Frait, Gersl and Seidler (2011)'s analysis of the share of foreign-currency (FX) bank loans in total loans. In this context, Rosenberg and Tirpak (2009) argue that among the reasons for low FX indebtedness are low domestic inflation and a flexible exchange rate, both of which help keep the real interest rate differential perceived by domestic borrowers relatively low. Large domestic-currency deposit base plays a role too.

^{xiii} With home bias in domestic spending, the transfer of wealth additionally worsens the current account of the country from which money is transferred because the recipient is getting richer and spends relatively more on domestic goods (a parallel to the Keynes-Ohlin controversy about German post-war reparations).

^{xiv} The real house price index is a ratio of the house price index to the deflator of final consumption expenditure; the most recent data are for 2010. Cadil (2009) and Zemcik (2011) find evidence of a moderate housing bubble in the Czech data.

^{xv} This is the Balassa-Samuelson effect, which explains the tendency for real appreciation among catching-up countries.

^{xvi} Tradables are defined as NACE2 activities A, B, C (agriculture, mining, manufacturing excl. C18 printing and C33 repair), H (transport excl. H52 warehousing and H53 postal services), J58 publishing, J62-63 programming, consultancy, and information services, and M (professional services). Non-tradables comprise the remaining private activities; public sector services are excluded. Based on the 2009 input-output table (CZ Statistical Office) and the allocation of activities between tradables and non-tradables, non-tradables account for 30% of inputs in tradables.

^{xvii} This is Blanchard's (2007) point as quoted in Lane's (2012) review on the European sovereign crisis. Above-average wage growth in the tradable sector (dominated by foreign-owned companies) is documented in Dubska (2012).

^{xviii} Lopez-Salido, Restoy and Valles (2005) suggest this channel played a role in Spain due to an explicit wage indexation rule.

^{xix} See the 2012 Industrial Performance Scoreboard (EC, 2012a). Productivity growth was assessed for the period 2006 to 2011.

^{xx} Evidence that structural reforms improve current account balances is presented in Zemanek, Belke and Schnabl (2010).