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Current Account Developments in New Member States of the European Union: Equilibrium, Excess, and EU-Phoria

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Abstract

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This paper analyzes current account (CA) developments in the following 10 new EU members states: Czech Republic, Bulgaria, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. During the last 15 years, these countries, on average, have run CA deficits that are considerably higher than the average CA deficit of other developing countries. However, more recently, a diverging pattern has emerged among these countries with one group, consisting of the Baltic countries, Bulgaria and Romania, experiencing rapid widening, while the others seeing a stabilization in their CA balances. Using panel data for 59 countries, this paper empirically investigates the following three questions: Are higher average deficits in EU-10 explained by medium-term macroeconomic fundamentals? What explains the diverging CA behavior among EU-10? And finally, how challenging is it for the group experiencing rapidly widening CA deficits to reverse the trend?

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I. Introduction

During the past 15 years, new members of the European Union (EU) have, on average, run current account (CA) deficits that were considerably higher than the average deficit experienced by other emerging market economies (Figure 1). An obvious question is *do fundamentals explain this difference?* Certain characteristics, that are likely to matter tangibly for a country's saving and investment, set the new EU members apart from other emerging market economies: transition from a socialist past that may require higher investment owing to an overhauling of the existing capital stock, a faster aging demographic, and institutional reforms associated with the EU membership. The last factor, arguably the one distinguishing most clearly the new EU members from other emerging market economies, is more than just a membership to a regional trade block as it promises a prosperous future through expectation of rapid income convergence.

In recent years, however, new EU members have behaved differently in their CA balances. Half of these countries, namely the Czech Republic, Hungary, Poland, Slovakia and Slovenia, have stabilized or improved their CA balances after an initial period of widening while an opposite trend has taken place in the Baltics, Bulgaria and Romania (Figure 2). *Why do countries that have, in many ways, gone through similar transformations and looking up to a common future show such divergence in their saving and investment balances between each other?*

Most EU members in the latter group have run CA deficits in the double digits during the last three years. Although foreign direct investment (FDI) coverage of CA deficits remains comfortable in some cases as do the coverage of short-term debt by reserves, concerns of external stability have risen with rapidly increasing external debt, "blistering" pace of credit growth, rising domestic wage pressures, and little policy flexibility given the pegged

Figure 1. Average CA Balance (Relative to GDP) in New Member States of the EU and Other Emerging Market Countries, 1992-2006
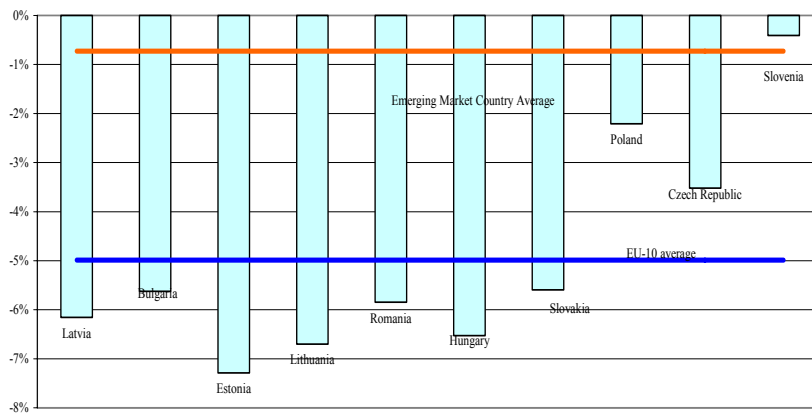
Source: IMF World Economic Outlook (WEO) Database.

exchange rate regime and already frugal fiscal stance. These concerns make the reversal of widening CA deficits a most desirable goal for the latter group. *How difficult is such a reversal?*

Figure 2. Trend in CA Balances (Relative to GDP) in New Member States of the EU, 1992-2006
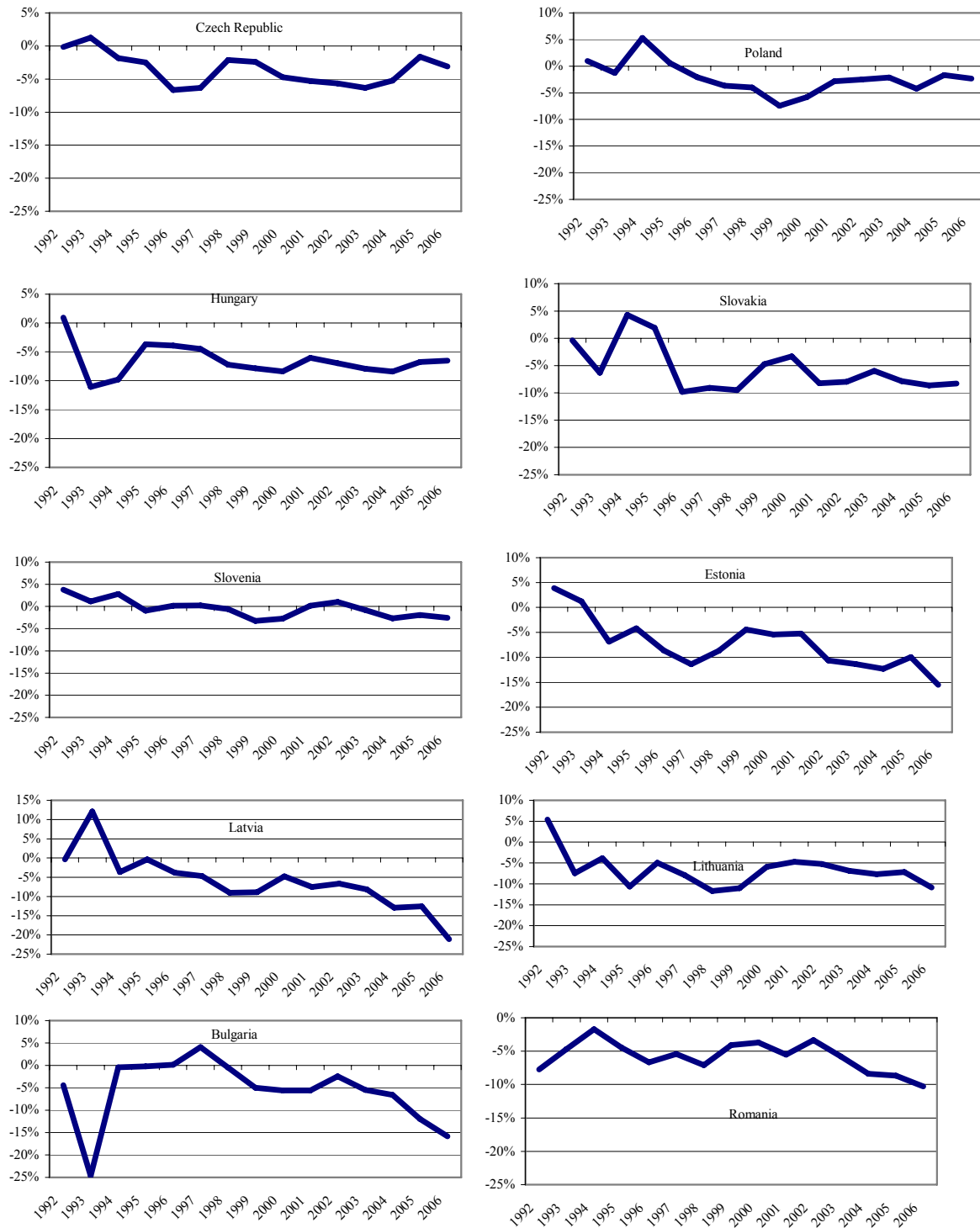
Source: IMF WEO Database.

This paper tries to answer the above questions with the following ten new EU members in mind: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia (EU-10). The rest of the paper is organized as follows.

Section two discusses the empirical framework for estimating CA norms using macroeconomic balance approach. Section three presents regression results and calculates CA norms for EU-10. This section also addresses whether CA norms, driven by long-term fundamentals, are different in EU-10 than in other developing countries and, if so, why. Section four looks into factors that explain differences between actual CA balances and estimated norms in an effort to see why some countries have been able to improve their CA balances over time and others not. In conclusion, section five takes a cursory look at how daunting the challenge is for countries that have run double-digit CA deficits in recent years to reverse their CA balances to the neighborhood of equilibrium.

II. Estimating CA Norms: The Empirical Framework

The CA balance of a country is determined by the difference between national saving and domestic investment. As such, in the macroeconomic balance approach, equilibrium movement in the CA balance is determined by a set of variables that affect a country's underlying saving and investment positions. Based on the existing literature on determinants of saving and investment behavior and as embodied in the analysis of the macroeconomic balance approach of the IMF's Consultative Group on Exchange Rate Issues (CGER) (Isard and others, 2001 and IMF, 2006a), the following underlying variables are used to explain equilibrium movement in the CA balance.

- *Fiscal balance*. A higher government budget balance raises national saving and increases the CA balance in the absence of full Ricardian equivalence. The impact of fiscal balance on CA balance would depend on the degree of liquidity constraints the private sector faces in an economy. A country with a more developed financial system and fewer constraints would allow for a higher private sector savings offset, hence lowering the impact of fiscal balance on the CA balance. The variable is captured by general government's balance expressed as a share of GDP.

- *Demographics*. A higher share of economically inactive, i.e. dependent population, reduces national saving and decreases the CA balance. Two variables are used to capture dependency: population growth, which affects the young age dependency and population older than 65 years as a ratio of economically active population, which reflects the old age dependency.

- *Net foreign asset position* (NFA). The level of NFA or wealth of a nation can affect the CA balance in two opposite ways. On the one hand, economies with higher NFA can afford to run lower trade balances without jeopardizing their solvency. On the other hand, higher NFA implies a higher net foreign income flows from abroad. The impact on the CA balance would depend on the relative importance of these two effects, which empirical studies tend to find in favor of the latter (IMF, 2006a and

Chinn and Prasad, 2003). The variable is measured as the stock of foreign assets net of liabilities relative to GDP. To avoid reverse link with the CA balance, its value is taken at the beginning of each period.

- *Oil trade balance*. Higher oil prices increase the CA balance of oil exporters and decrease the balance of oil-importers given everything else. The variable used here is oil trade balance as a share of GDP.

- *Relative per capita income*. Relatively poorer countries are expected to import capital, both physical and financial, for domestic investment which reverses with rising income. The variable is measured by income per capita relative to the United States in purchasing power parity terms.

- *Economic growth*. Among countries at a similar stage of development, stronger growth is likely to lower CA balances if faster growth relies on foreign-financed investment or if current higher growth is perceived to be of permanent nature, with a likely negative impact on savings. This variable is measured as real per capita GDP growth and included for non-industrial countries only given the relatively low variance in growth among industrial countries.

- *Financial crisis*. Financial crisis can have sharp contractionary effects on CA balances due to the drop in output as well as reduction in access to financing. Two separate time dummies are used to capture the Asian financial crisis (1997–2004), and episodes of banking crisis in individual countries. The banking crisis data is taken from IMF (2006a).

- *Financial center*. To control for the positive impact on CA balance from a country being a center for international financial flows, a dummy variable for such countries is included in the regression (Belgium, Hong Kong SAR, Netherlands, Singapore and Switzerland) .

In addition to these CGER variables, the following two variables were also used for the developing countries in the sample:

- *FDI*. Increased FDI often signals improvement in the investment climate of a developing country. It also provides for a more stable source of financing CA deficits in these countries. Often, a developing country's ability to run deficits is restricted by the availability of external financing. Higher FDI tend to affect the CA balance also through increased imports. For these reasons, a negative relationship between FDI inflows and CA balance is expected. The coefficient is likely to depend on the import content of FDI and whether FDI increases investment or acquires existing capital stock. The variable included here is gross FDI inflows as a share of GDP.
- *Private remittances*. For certain developing countries, workers' remittances and compensation provide a significant source of income, which can be saved or spent. To account for that and minimize interaction with the dependent variable, a dummy

variable is included for countries where annual remittances and compensation equal to or exceed 5 percent of GDP.[2]

III. Estimation Results: Calculating CA Norms

The sample includes 21 industrial and 38 developing countries. The estimation period spans from 1992 to 2006 for transition economies, and from 1971 to 2006 for all other countries. To take out cyclicality and short-run variations in the data, all variables are entered as 4-year non-overlapping averages, except for NFA, for which, the value at the beginning of each 4-year period is used. This yields to 4 observations for transition economies and 9 for the others. Regression results from both pooled and fixed effects (FE) estimations are reported in Table 1.

Table 1. Current Account Regressions: Pooled and Fixed Effect Estimations

	Pooled Estimation	Fixed Effect Estimation
Fiscal balance	0.39***	0.44***
Relative income	0.03**	0.02
Population growth	-0.79**	-2.02***
Old age dependency	-0.14**	-0.04
Oil trade balance	0.15***	0.41***
Initial NFA	0.04***	0.03***
FDI	-0.13*	0.05
Economic growth	-0.05	-0.24***
Remittance dummy	0.02***	
Financial center dummy	0.01	
Banking crisis dummy	0.015***	
Asian crisis dummy	0.028***	0.02*
Adjusted R^2	0.42	0.59
Number of countries	*21 industrial and 38 developing countries*	
Number of observations	*470*	

Note: ***, ** and * imply significance at 1%, 5% and 10% levels respectively.

The results from the pooled estimates show that all explanatory variables demonstrate their expected signs and all, except GDP growth and the financial center dummy variable, are statistically significant, mostly at 1 percent or 5 percent levels. FDI is significant, but only at 10 percent and the coefficient is small. A one percentage point of GDP increase in FDI decreases the CA balance by 0.13 percentage points. This result may imply that FDI does not have a homogeneous impact on the CA balance of developing countries included in our

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[2] Admittedly, this threshold is arbitrary. The idea behind using a relatively high threshold is to capture the impact of remittances only where they provide a stable and significant source of income.

sample, which is weakening the overall impact.[3] This issue is revisited later in the paper. The remittance dummy is highly significant at 1 percent.

The FE estimation increases the explanatory power of the regression but a good part of it is derived from country-specific constant terms.[4] While, for fiscal balance and initial NFA variables, the FE and pooled estimates produce similar coefficients, for the others, regression coefficients differ considerably between the two estimates. Not surprisingly, the impact of the variables that are likely to be captured by country-specific constant terms, such as FDI, relative income and old age dependency, become statistically insignificant in the FE estimate. As for the remaining variables, GDP growth gains statistical significance in the FE estimate and the coefficients for oil trade balance and population growth become larger in magnitude reflecting the fact that country-specific factors weaken the impact of these variables on the CA balance.

The regression results in the pooled estimate and its explanatory power are comparable to the findings of other recent empirical studies on determinants of CA balance (Table 2). As in other studies, the results in this paper show a highly significant impact of the following three variables on the CA balance: fiscal balance, NFA, and oil trade. Since these estimations vary in terms of explanatory variables, sample period, sample countries, averaging periods and, in some cases, variable definitions, individual coefficients vary in magnitude and significance. Fiscal balance seems to have a lower impact on the CA balance when looked at in comparison to the average fiscal stance of trading partners (IMF 2006a and Chinn and Ito 2007) as opposed to only a country's own fiscal position. Both relative income and GDP growth are statistically insignificant in studies that include a larger number of developing countries (Chinn and Ito, 2007 and Chinn and Prasad, 2003) in the sample indicating weak evidence of "stages of development" hypothesis for CA balance, i.e. dependence on imported capital for growth in developing countries. This study finds a moderately significant relationship between relative income and CA balance for the full sample, but not for sub-samples (discussed later) and no significant relationship between GDP growth and CA balance.

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[3] The impact of FDI on the CA balance increases from -0.13 to -0.22 and becomes significant at 1 percent if the estimation is done with annual data. The higher negative impact on annual CA balance reflects imports that often accompany FDI in its initial phase, particularly if the investment is greenfield. Estimation with annual data also renders a highly significant coefficient for GDP growth, which is not observed at the estimation with 4-year averaged data implying its lesser influence on medium-term CA balance.

[4] Regressing the CA balance on only country-specific dummy variables produces an R^2 of 0.32.

Table 2. Pooled Estimates and Findings of Other Recent Studies

	Pooled Estimate, This paper	CGER, IMF (2006a)	Chinn and Ito (2007)	Chinn and Prasad (2003)
Fiscal balance	0.39***	0.19***	0.15**	0.306***
Net foreign asset	0.04***	0.02***	0.049***	0.048***
Relative income	0.03**	0.02*	0.027	0.042
Relative income squared			0.016	-0.018
Old age dependency ratio	-0.14**	-0.14**	-0.205**	-0.051
Population growth	-0.79**	-1.22***		
Young age dependency ratio			-0.06***	-0.025
GDP growth	-0.05	-0.21**	-0.151	-0.052
Oil trade balance	0.15***	0.23***		
Oil exporting country dummy			0.046***	0.02**
Financial deepening			0.001	0.026**
Terms of trade volatility			-0.013	0.018
Capital controls in CA				0.010
Capital controls in capital account				0.001
Financial center	0.01	0.03***		
Banking crisis dummy	0.015***	0.01*		
Asian crisis dummy	0.028***	0.06***		
FDI	-0.13*			
Remittance dummy	0.02***			
Adjusted R^2	0.42	0.52	0.42	0.42
Number of observations	470		502	317
Sample countries	21 industrial and 38 developing	22 industrial and 32 developing	19 industrial and 70 developing	18 industrial and 71 developing
Time period	1971-2006	1973-2004	1971-2004	1971-1995
Data	4-year average	4-year average 1/	5-year average 1/	5-year average

Note: *, ** and *** imply statistical significance at 10%, 5% and 1% respectively.
1/ Data for some variables are used as deviation from trading partners' average values.

We will now look at what the regression coefficients imply for CA norms. The purpose is to see how do CA norms compare between EU-10 as a group, and other developing countries. Using regression coefficients from the pooled estimate and the projected medium-term values of the explanatory variables, CA norms are calculated (Table 3). The rationale for using the medium-term values for the variables is that it allows for existing output gap to close and the explanatory variables to reach their sustainable values ironing out cyclicality.[5] The calculations indeed show that, on average, EU-10 as a group has

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[5] The projected values for 2013 are used from the IMF's WEO database for all explanatory variables except for NFA, for which data for 2009 is used. The drawback of this approach is that it uses *projected* values which may or may not materialize and, for NFA, may unduly allow for a lower CA norm for countries that are expected to run large CA deficits during 2008-09. The advantage of this approach is that it incorporates country-specific knowledge.

a norm deficit that is twice as high as the averages for other developing country groups in the sample. A look at individual contributions from the dependent variables shows that the larger average norm deficit in EU-10 is mostly a result of two factors: a much lower NFA position and a higher share of older population. New EU members have a demographic profile that resembles more the industrial Europe than other emerging market countries. Having a larger share of older population lowers national saving allowing for a higher norm deficit. The much lower NFA position in EU-10, on the other hand, simultaneously reflects foreign investors' greater confidence in the growth prospects of these economies and the higher dependence of these countries on foreign capital for growth. Differentiating within EU-10 between countries where CA deficits have stabilized or improved over time and countries where deficits have widened, also show higher norm deficits in both of these sub-groups relative to the averages in other developing country groups.

Table 3: Average Current Account Norms in EU-10 and Other Developing Countries

	Coefficients	Contribution to the CA norm =coefficient*medium-term value of the variable					
		EU-10	EU-5 1/	EU-5 2/	Asia 3/	Middle East 3/	Latin America 3/
Variables							
C	0.02	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Fiscal balance/GDP	0.39***	-0.5%	-0.7%	-0.3%	-0.6%	-0.9%	-0.1%
Relative per capita GDP in purchasing power parity	0.03**	1.3%	1.5%	1.1%	0.6%	0.5%	0.8%
Old age dependent population	-0.14**	-3.2%	-2.9%	-3.4%	-1.4%	-1.0%	-1.5%
Population growth	-0.79**	0.2%	0.0%	0.3%	-1.2%	-1.2%	-1.0%
Oil trade balance/GDP	0.15***	-0.5%	-0.7%	-0.3%	-0.6%	-0.4%	0.0%
Initial NFA/GDP	0.04***	-3.2%	-2.4%	-4.0%	0.0%	-2.1%	-1.7%
FDI/GDP	-0.13**	-0.6%	-0.5%	-0.7%	-0.3%	-0.4%	-0.3%
Real per capita output growth	-0.05						
Remittance dummy	0.02***					2%	
Financial center dummy	0.01						
Asian crisis dummy	0.028***						
Banking crisis dummy	0.015***						
R^2	0.42						
Average CA norm		-4.3%	-3.6%	-5.0%	-1.4%	-1.9%	-1.8%
Number of countries	21 industrial and 38 developing countries						
Number of observations	470						

Note: ***, ** and * imply significance at 1%, 5% and 10% levels respectively.
1/ Includes Czech Republic, Hungary, Poland, Slovakia and Slovenia.
2/ Includes Bulgaria, Estonia, Latvia, Lithuania and Romania.
3/ Asia includes China, Indonesia, India, Malaysia, Philippines and Thailand; Middle East includes Egypt, Morocco, Pakistan, and Tunisia; and Latin America includes Argentina, Brazil, Chile, Colombia and Peru.

The finding of higher norm deficits for new EU member states relative to all other developing country groups prompt one to consider whether there is a heterogeneity in the growth and CA experiences of these countries and the rest of the developing countries in our sample. Two recent studies have made a case for making a distinction between the development experience in European and other developing countries (Abiad and others, 2007 and Aizenman and Sun, 2008). While developing Europe, mostly transition economies, have experienced a largely foreign-financed investment boom often resulting in sizable CA deficits, faster growing emerging market countries in other parts of the world have, on average, more than self-financed their economic growth resulting in CA surpluses. This implies that the impact of investment, relative income and GDP growth on the CA balance may differ in these two groups. To test for heterogeneity in the sample of developing countries, the CA regression is run for two separate samples, one where developing countries include only Europe (EUR), and the other, where developing countries are drawn from outside Europe (NON-EUR). In both groups, the same 21 industrial countries are included.

The estimation results are reported in Table 4. Comparing the regression coefficients from EUR and NON-EUR samples, the differences are most obvious in the impact of FDI and GDP growth. For EUR, the impact of FDI on CA balance is negative and large. A one percentage point of GDP increase in FDI decreases the CA balance by 0.61 percentage point. For NON-EUR, FDI actually shows a positively significant effect on the CA balance. Similarly, GDP growth has a negative and significant, albeit only at the 10% level, impact on the CA balance in EUR, while its impact is positive and insignificant in NON-EUR. What is driving these differences? The different signs for FDI coefficient in EUR and NON-EUR most likely reflect the differential nature of FDI in these two groups. While FDI inflows to non-European developing countries have mostly been targeted to export industries with a likely positive impact on the CA balance in the medium-term (once the initial short-term import impulse dies out), a substantial part of FDI inflows to European developing countries have been targeted to domestic services sectors, due to both their initial poor status and the expected rise in purchasing power in these countries (Tiusanen, 2006). An additional reason for negative impact of FDI on CA balance in transition countries may be due to the initial poor quality of capital stock in general which may imply higher needs for imports even for privatization-related FDI. The different signs for the impact of GDP growth possibly reflect the fact that faster growth can be export-led or domestic-demand led resulting in an ambiguous sign.

Interestingly, relative income is insignificant in both sets of regressions which shows weak support for the development stage hypothesis, as found in other empirical studies (Table 2). While all convergence/faster growth is likely to depend on increased investment, its relationship with the CA balance will depend on the sectoral contribution to growth (export versus domestic absorption) and the method of financing (domestic savings versus foreign borrowing). If growth and investment are supporting an export-led strategy and demonstrating a Balassa-Samuelson type productivity catch-up with little dependence on foreign capital, the CA balance may actually improve as a result of income convergence.

Aizenman and Sun (2008) shows a positive relationship between economic growth and the CA balance in an empirical investigation of 175 countries.

Table 4. Current Account Regressions: Check for Homogeneity in the Sample

	Sample: EUR	Sample: NON_EUR	Sample: EUR 1/
Fiscal balance	0.23***	0.38***	0.22***
Relative income	0.003	0.001	-0.006
Population growth	-0.65	-1.59***	-0.63
Old age dependency	-0.04	-0.01	-0.04
Oil trade balance	0.39***	0.20***	0.44***
Initial NFA	0.023***	0.03***	0.028***
FDI	-0.61***	0.22**	
Economic growth	-0.14*	0.11	-0.179**
Remittance dummy		0.19***	
Financial center dummy	0.035***	- 0.004	0.034***
Banking crisis dummy	0.02***	0.005	0.018***
Asian crisis dummy		0.027***	
Investment climate			-0.01***
Adjusted R^2	0.56	0.42	0.54
Number of Observations	246	427	246
Number of Developing Countries	13	25	13

Note: ***, ** and * imply significance at 1%, 5% and 10% levels respectively.
1/ FDI is replaced by investment climate in the regression.

Other variables, such as the fiscal balance and demographics also show differences in their impact on the CA balance in EUR and NON-EUR. The effect of fiscal balance on the CA balance in EUR is much smaller than its impact in NON-EUR. In other words, for a given increase in government savings, the offset in private savings is 1.7 times as much in EUR as in NON-EUR. This probably reflects an increased level of financial market development in EU-10 compared to other developing countries, which diminishes the role of public sector savings decision on the overall economy, and/or private sector's consumption smoothing impulse from EU accession. Both demographic variables are statistically insignificant in EUR, possibly pointing to the lack of variation in demographics between European developing countries and industrial countries.

These results indicate the desirability to estimate CA norms for EU-10 using a sample that excludes non-European developing countries. They also demonstrate that FDI is an imperfect proxy for investment climate as its impact on the CA balance in developing countries depends on its motive and use. Hence, to better proxy investment climate, FDI is replaced in the EUR regression with an index constructed using European Bank for Reconstruction and Development (EBRD) transition economy data. Following Eschenbach and Hoekman (2006), the average of the following six EBRD transition indices is used to

capture investment climate: large-scale privatization, small-scale privatization, governance and enterprise restructuring, price liberalization, trade and foreign exchange system, and competition policy. The estimation results show that this transition index has a strong negative impact on the CA balance (Table 4, last column), with coefficients for the other variables unaffected.

Figure 3: CA Norms in EU-10
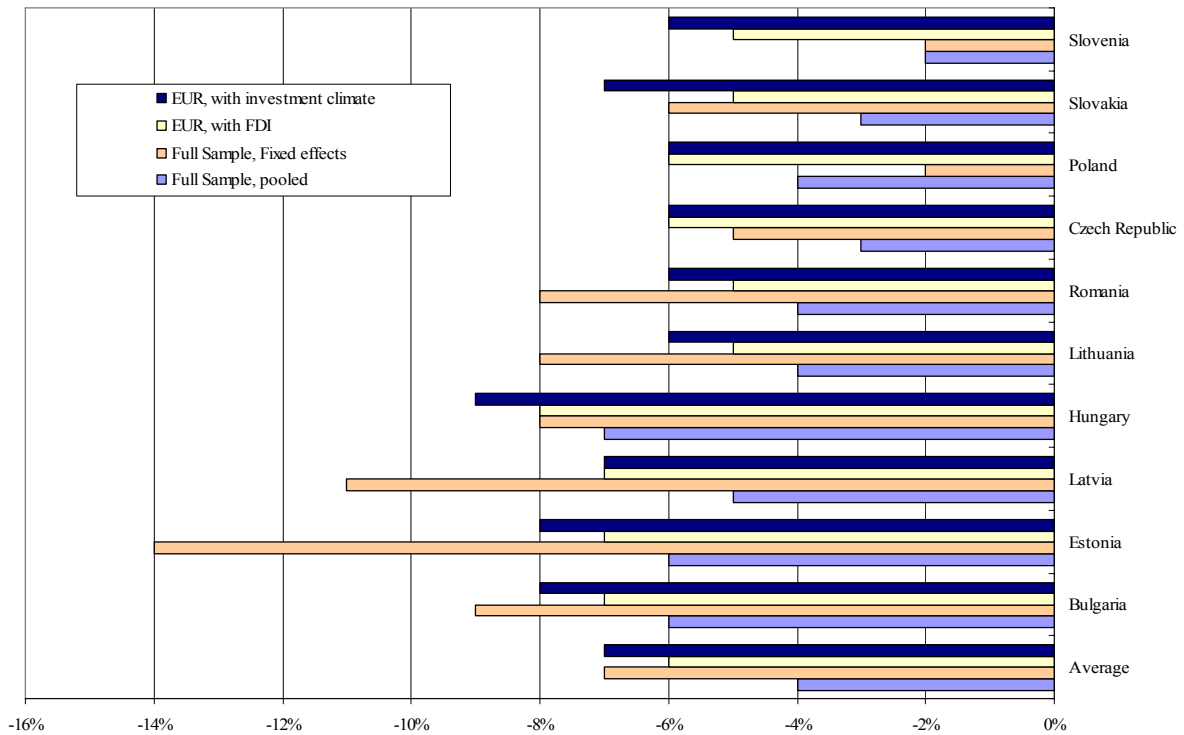
For illustration purpose, CA norms in EU-10 are shown in Figure 3 using all four estimations: the pooled and FE estimates using the whole sample (regression results in Table 1), and pooled estimates using EUR sample, with FDI and investment climate as explanatory variables, respectively (regression results in Table 4, first and third columns). As before, the norms are calculated using the regression coefficients and the medium-term values of the variables reported in the IMF's WEO database.[6] Not surprisingly, the FE estimate produces the largest range of norm deficits, from 2 percent in Slovenia to 14 percent in Estonia, the differences largely being determined by the country-specific coefficients which are, in turn, being influenced by individual country's historical CA balances (Appendix 1, Table 2).

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[6] The medium-term (2013) value for the investment climate index used in the CA norm estimate is 4 for all and 4.3 for Hungary. In 2006, the value of this variable ranged between 3.56 in Romania and Slovenia to 4.0 in Hungary for EU-10. The highest possible value of the index is 4.3.

Differences in CA norms across countries in the three pooled estimations are primarily driven by the respective initial NFA positions (Appendix 1, Tables 1, 3 and 4). Countries that have been most successful in attracting foreign capital, such as Estonia and Hungary because of their decisive privatization policy early on, and Bulgaria more recently, benefiting from its EU accession, are also the ones showing the largest norm deficits. The range of norm deficits in the two pooled estimates using EUR sample is smaller compared to the range estimated using the full sample as FDI and investment climate, which do not vary a lot across EU-10, seem to provide the largest single contributions to CA norms in most cases (Appendix 1, Tables 3 and 4). The distribution of countries tends to show consistency across estimations: Slovenia, Slovakia, Czech Republic and Poland at the lower end of norm deficits and Hungary, Latvia, Estonia and Bulgaria at the higher end (Figure 3).

An important omission from the calculation of CA norms for EU-10 is the treatment of EU capital transfers. To date, annual EU transfers have been rather modest in these economies, mostly around 1-2 percent of GDP during 2000-06, with approximately half or less of these transfers recorded in the capital account. As these transfers increase in magnitude in future years, they will have to be addressed in the calculation of CA norms due to their likely positive impact on domestic investment without affecting foreign liabilities.[7]

IV. CA Balances in EU-10: What Explains Divergence from Norms?

The previous section discussed CA norms in new EU member states, both relative to other developing countries and to each other. In this section, we look at deviations from estimated norms. For this exercise, annual norms are calculated using the regression coefficients from the EUR sample (with investment climate, reported in Table 4, third column) and annual historical values of the explanatory variables used in the CA norm regression.[8] Annual CA divergences are calculated by subtracting the annual norms from actual CA balances. A look at the divergences across EU-10 show four distinct groups

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[7] Another way of considering the impact of EU capital grants on the CA balance would be through the fiscal balance as these grants, recorded as revenues, allow for a higher fiscal balance. If we assume that in the medium-term, EU-10 countries are likely to receive EU capital grants of about 2 percentage point of GDP, taking these out of the fiscal balance would lower the fiscal balance by this magnitude. Using the coefficients on the fiscal balance reported in Table 4, this would allow for a decrease in the CA norm of half a percentage point of GDP. However, the channeling of at least part of the EU grants outside the budget and the explicit additionality rule for some grants would complicate such simple applications.

[8] The regression coefficients from the EUR sample is chosen over those from the full sample pooled estimate in order to take account of possible non-homogeneity between EU-10 and other developing countries. At the same time, the FE estimates were disfavored as the country-specific coefficients take away much of our ability to identify factors that explain intra-EU differences.

Figure 4. EU-10: Divergence of Actual CA Balances from Annual Norms, 1992-06
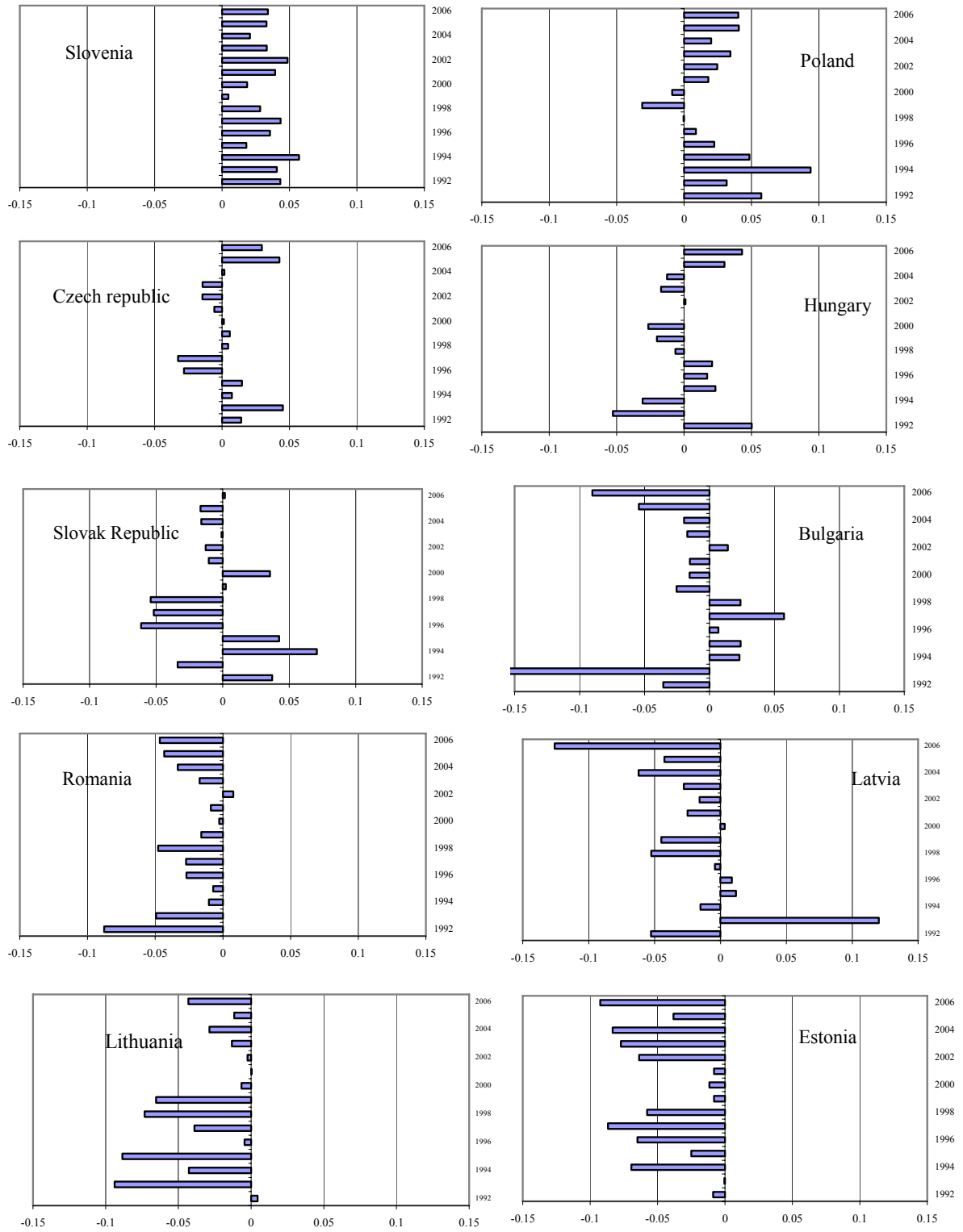
(Figure 4). At one end, there are Slovenia and Poland, where actual CA balances have almost always been higher than the estimated norms, producing positive divergences. At the other end, there are the Baltic countries with persistently negative divergences. For a third group, consisting of the Czech Republic, Hungary and Slovakia, negative divergences seemed to have diminished over time or turned positive as actual CA balances improved over time. For a fourth group, consisting of Bulgaria and Romania, we notice increasingly larger negative divergences emerging in recent years.

What factors explain these differences in divergence between actual and equilibrium behavior of CA balances in EU-10? While CA norms are explained by long-run fundamental determinants of saving and investment, actual CA balances reflect developments in these variables as well as in short-run and cyclical forces, country-specific shocks, structural and policy variables that may have a bearing on export performance but not necessarily on savings and investment. The following possible influences are looked at in this paper.

To capture short-run and cyclical factors, two variables are used: output gap and a dummy variable capturing the timing of EU accession. The latter is to account for possible temporary surge in credit growth or capital inflows resulting from accession-related EU-phoria. Capital inflows or credit growth of more permanent nature materializing from EU halo effect are likely to have been captured by the investment climate variable included in the norm regression.

These two variables are used in the regression as follows.

- Output gap. A positive gap in the output with respect to its potential implies overheating and is likely to reduce actual CA balance through increased imports, thus reducing the divergence from the norm deficit. This relationship may be non-linear given that as an economy moves away from its potential output, changes in demand may translate into correspondingly higher changes in imports without affecting output. Thus two variables were included in the regression to capture the effect of output gap on CA balance: the interaction between output gap and openness of the economy, and the square of output gap. The data on output gap was obtained from IMF country desks.

- EU accession. This variable takes the value of 1 for the two years following the completion of EU accession negotiation. Accession negotiations were competed for the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia in October 2002, and for Bulgaria and Romania in 2004. This variable is expected to lower actual CA balance through increased domestic absorption and thus reduce the divergence from the norm deficit.

To take account of structural factors that are likely to affect export performance, but are not reflected in the CA norm regression, the following two variables are used: relative cost competitiveness of the tradable sector and export structure. A more competitive export sector is likely to enhance a country's trade and CA balance. In addition, empirical studies on

new EU member states have found that structural transformation in exports in favor of products with higher technological content also seemed to have improved the trade balance in a number of EU countries (IMF, 2006b and Hermann and Jochem, 2005).

These variables are measured as following.

- Relative cost competitiveness in manufacturing. This is proxied by the ratio of unit labor costs in the overall economy and in manufacturing sector relative to trading partners. An increase in this variable implies a more competitive manufacturing sector, which is likely to improve actual CA balance and increase the divergence from the norm deficit.

- Export composition. This variable is captured by the share of labor-intensive products in overall manufacturing exports. A higher value of the variable implies a diminished ability to add value, which is likely to lower actual CA balances and decrease the divergence from the norm deficit.

To take account of policy variables that are not incorporated in the CA norm regression but may have implications for the CA balance, financial sector policies in conjunction with exchange rate policies are considered here. A measure of financial deepening (proxied by M2 to GDP ratio and private sector credit to GDP ratio) came out as statistically insignificant in the norm regression and was discarded from the final version of the regression. However, for EU-10, the rapid pace of financial deepening is considered to be central in the convergence story. In the divergence regression, both a direct measure of financial deepening, namely private sector credit as a share of GDP, and an indirect measure, namely financial sector efficiency are included. Increased credit to private sector is likely to have a negative impact on the CA balance through increased imports, thus decreasing the divergence from the norm deficit. Financial sector efficiency, however, may have a more ambiguous impact. If it implies faster intermediation of domestic resources only, the impact on the CA balance would be positive. If, instead, in an environment where the banking sector is dominated by foreign banks, increased efficiency could imply a better ability to translate foreign savings into domestic lending, with a negative impact on the CA balance.

Empirical studies tend not to find robust association in the long run between exchange rate regimes and growth (Rogoff and others, 2004) or CA adjustment (Chinn and Wei, *forthcoming*). However, to the extent a fixed regime encourages a perceived absence of foreign exchange risks among investors (Kamil 2007), it may encourage investment in non-tradables and affect CA balances through a loss of competitiveness, at least in the short run. The latter argument may have more relevance for some new EU members that have long-standing hard pegs with the intention to join ERM-II without a change in the regime. A pegged regime can also affect the CA balance through aggressive credit growth due to a faster convergence to (lower) Euro area interest rates in a setting where foreign banks are able to draw on extra resources from parent banks (Bakker, *forthcoming*). To capture this

possible indirect impact of exchange rate regime on the CA balance, an interaction variable with private sector credit to GDP ratio was used in the regression.

The variables were measured as following.

- Private sector credit to GDP ratio. This variable was obtained from the updated database by Beck and others (1999).

- Financial sector efficiency. Financial sector efficiency is captured by the accounting value of a bank's overhead costs as share of its total assets obtained from the updated database by Beck and others (1999). A higher value implies less efficiency in the banking sector and greater reliance on foreign borrowing for investment, thus larger divergence.

- The exchange rate regime dummy variable takes the value of 0 for hard pegs and 1 otherwise. The hard peg was in place for the following countries during the following years: Bulgaria: since 1998; Estonia, Latvia and Lithuania: 1992-2006; Czech Republic and Hungary: 1992-97; Poland: 1992-99; Slovakia: 1992-98 and Slovenia: 2004-06.

The estimation results show that all variables, except export composition and financial sector efficiency are statistically significant with the expected signs (Table 5). Both output gap*openness and output gap squared are statistically significant showing the existence of a non-linear relationship with CA balance. However, both coefficients are very small, which indicate a generally weak effect of output gap on the CA balance of EU-10.[9] Relative cost competitiveness of the tradable sector was found to be highly significant in explaining CA balance across EU-10. Similarly, the two years following the finalization of accession negotiation seems to provide a negative boost to the CA balance relative to its "annual norm". Private sector credit to GDP ratio showed a statistically significant negative impact on the CA balance. A 1 percentage point of GDP increase in private sector credit decreased CA balance by 0.07 percentage points relative to its annual norm. However, the interaction variable of private sector credit and exchange rate regime shows an opposite impact of almost the same magnitude. This implies that the widening impact on the CA balance from credit expansion/financial deepening was dampened by the flexibility of the exchange rate regime. The statistical insignificance of financial sector efficiency variable may be driven by the conflicting impact of financial sector efficiency on the CA balance resulting from increased intermediation of domestic savings as well as the enhanced ability to intermediate foreign savings through foreign-owned domestic banks.

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[9] An alternative measure of output gap obtained from applying the Hodrick-Prescott (HP) filter on actual output to estimate potential output gave different results. These results reported in appendix 2 show a much higher impact of output gap on the CA balance, but no non-linearity. However, the use of HP filter to estimate output gap is problematic. In addition to the familiar end-point problem, its application may not be appropriate for certain transition economies that are going through structural changes.

Table 5: Regression Results Explaining Divergence from CA Norms

	Coefficients, pooled	Coefficients, FE
Dependent variable= Actual CA balance – Annual norm CA balance (as a share of GDP) 1/		
Variables	Coefficients, pooled	Coefficients, FE
C	-0.14***	
Output gap*openness	-0.003*	-0.006**
Output gap squared	-0.001**	-0.000
Relative cost competitiveness in manufacturing	0.16***	0.13**
Share of labor-intensive products in total exports	-0.02	0.05
EU accession dummy	-0.02**	-0.02**
Private sector credit to GDP	-0.065**	-0.03
Private sector credit to GDP*Exchange rate regime dummy	0.068***	0.03
Financial sector overhead costs	-0.15	0.06
R^2	0.56	0.81
Number of countries	10	10
Number of observations	73	73

Note: ***, ** and * imply significance at 1%, 5% and 10% respectively.
1/ Annual norms are calculated using coefficients reported in Table 4, 3rd column (EUR sample with investment climate as explanatory variable) and annual historical values of the dependent variables used in the norm regression.

To ensure that the set of regressors is not picking up other omitted country-specific factors, the above equation is also estimated with FE. The results show that both private sector credit to GDP and its interaction variable with exchange rate regime, and the square term on output gap drop their statistical significance in the FE version of the estimation. To check for robustness of the regressors, the above regression is also repeated with (i) an alternative measure of output gap, where potential output is estimated using HP filter and (ii) two alternative measures of the dependent variable, i.e. CA divergence, based on the coefficients from the other two pooled CA norm regressions used in section III of the paper (regression coefficients reported in Table 1, first column and Table 4, first column). The regression results of the robustness checks are shown in Tables 1 to 3 of Appendix 2.

Various estimations of the divergence regression seem to suggest a robust relationship with the following variables: output gap, relative cost competitiveness of the manufacturing sector and the short-term impulse from EU-accession. While private sector credit and its interaction with exchange rate regime are statistically significant in all pooled estimations, they are insignificant in some of the FE estimates. The interaction variable seems to show more consistency in terms of statistical significance compared to the credit to GDP variable providing some support to the argument that the exchange rate regime plays a role in these countries in affecting the relationship between financial deepening and CA developments. Between the norm and divergence regressions, the regressors in the two equations explain about three-quarters or more of the variation in CA balances of EU-10. The remaining (unexplained) components of the CA balance in EU-10 are shown in Figures 5a

and 5b, a considerable decline relative to the divergences shown in Figure 4.[10]

Based on this static analysis, which shows a relatively small impact of the output gap on the CA balance with certain structural and policy variables to have statistically significant effects, it would seem that a reversal of large CA deficits in some of the EU-10 countries to may not take place on their own. A look at the CA history of countries that never experienced large negative divergences or were able to reverse their initial negative divergences offers some lessons. This group consists of the Czech Republic, Hungary, Poland, Slovak republic and Slovenia is referred to as the low CA deficit (low CAD) group. Despite sharp and sustained increase in imports and a deterioration in income balances, this group was able to stabilize or improve their CA deficits on account of very strong export performance (Figure 6). Export performance, in turn, was supported not just by solid volume growth and increasing market shares, but also by a transformation that favored higher technological content. Over half of manufacturing exports in this group consisted of products that can be considered as technology-intensive.[11] The productivity growth in this group also mostly shows a positive Balassa-Samuelson effect as captured by the increasing ratio of prices of non-tradables (services) to tradables (industry) relative to their largest trading partner (EU-27). As a result, despite large real appreciations, competitiveness in the tradable sector was preserved and trade and CA balances improved in these countries.

In contrast, the other five EU-10 members experienced a continued deterioration in their CA balances (Figure 7). This group is referred to as the high CA deficit (high CAD) group. While imports as a share of GDP increased by about the same pace as in the previous group, exports as a share of GDP failed to keep pace as it did in the other group. Volume of exports experienced robust growth and market shares increased more so than in the previous group owing to their very low initial levels. But despite improvement in the share of technology-intensive products in exports (exception, Estonia), their overall contribution remained at one third or less showing dependence of exports on relatively lower value-added products. Similarly, productivity growth favored the non-tradable sector in three out of five of these countries.

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[10] The starting year in Figures 5a and 5b differs among countries reflecting differences in data availability for potential output/output gap. Potential output was available for 7 years for the Baltic countries and Hungary and for 4-5 years for Bulgaria, Romania and Slovakia.

[11] Manufacturing exports of International Standard Industrial Classification (ISIC) products 15-29 were classified as follows: labor-intensive: 15-19, 36; resource-intensive: 20-28; and technology-intensive: 29-35.

Figure 5a. EU-10: CA Balances after Accounting for Explanations from CA Norm and Divergence (pooled estimate) Regressions
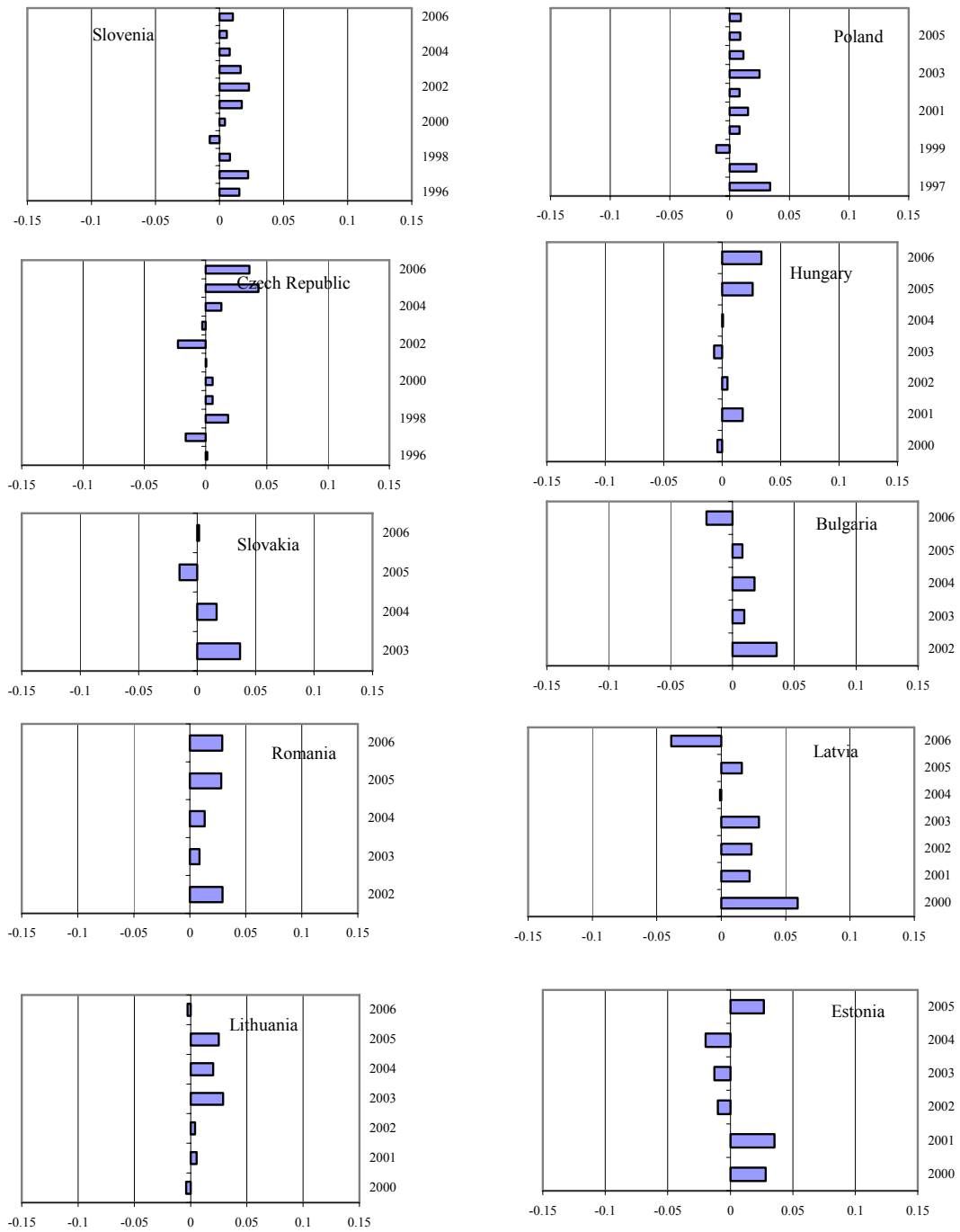
Figure 5b. EU-10: CA Balances after Accounting for Explanations from CA Norm and Divergence (FE estimate) Regressions

Figure 6. Current Account and Export developments in the Low CAD group: Czech Republic,
Hungary, Poland, Slovakia and Slovenia
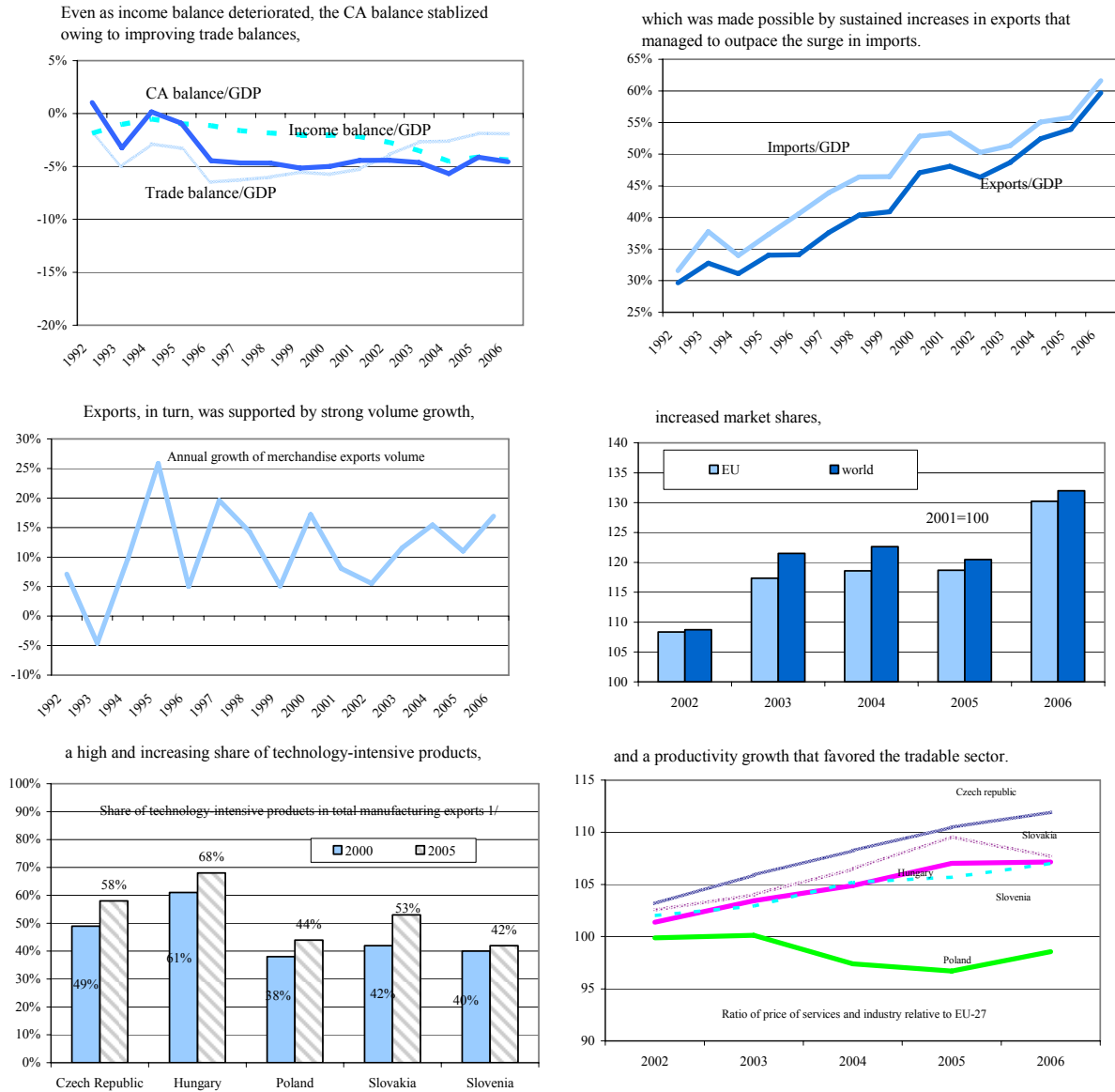
Even as income balance deteriorated, the CA balance stablized
owing to improving trade balances,

which was made possible by sustained increases in exports that
managed to outpace the surge in imports.

Exports, in turn, was supported by strong volume growth,

increased market shares,

a high and increasing share of technology-intensive products,

and a productivity growth that favored the tradable sector.

Source: WEO, Direction of Trade statistics, UNCTAD and Eurostat.
1/ Exports of manufacturing products at ISIC 29-35 as a share of exports of products at ISIC 15-36.

A recent study by Bems and Schellekens (2007) takes a dynamic view of things and suggests that the relative dominance of non-tradables in the Baltic countries and Bulgaria may be reflective of a two-stage convergence process. These countries are all in the first stage of convergence, called the expansion stage, where large capital inflows finance a growing CA deficit and spending on both tradables and non-tradables are accelerating. While tradables can be imported, non-tradables cannot. This pushes the relative price of non-tradables up creating a real exchange appreciation and result in a resource shift into non-tradables. In the reorientation stage, this process unwinds in favor of tradables which brings

in a correction in the CA balance. While this may be the case, it leaves the question unanswered as to why some others, who had similar initial relative income and reform status at the beginning of transition, Poland and Slovakia for example, have taken a different path. Besides, irrespective of what explains the current dominance of the non-tradable sector in high CAD economies, large stock vulnerabilities, fixed exchange rate regimes and the unclear horizon for Euro adoption make the task at hand clear: *reversal of large CA deficits to more sustainable levels*.

Figure 7. Current Account and Export Developments in High CAD Group: Bulgaria, Latvia, Lithuania, Estonia and Romania
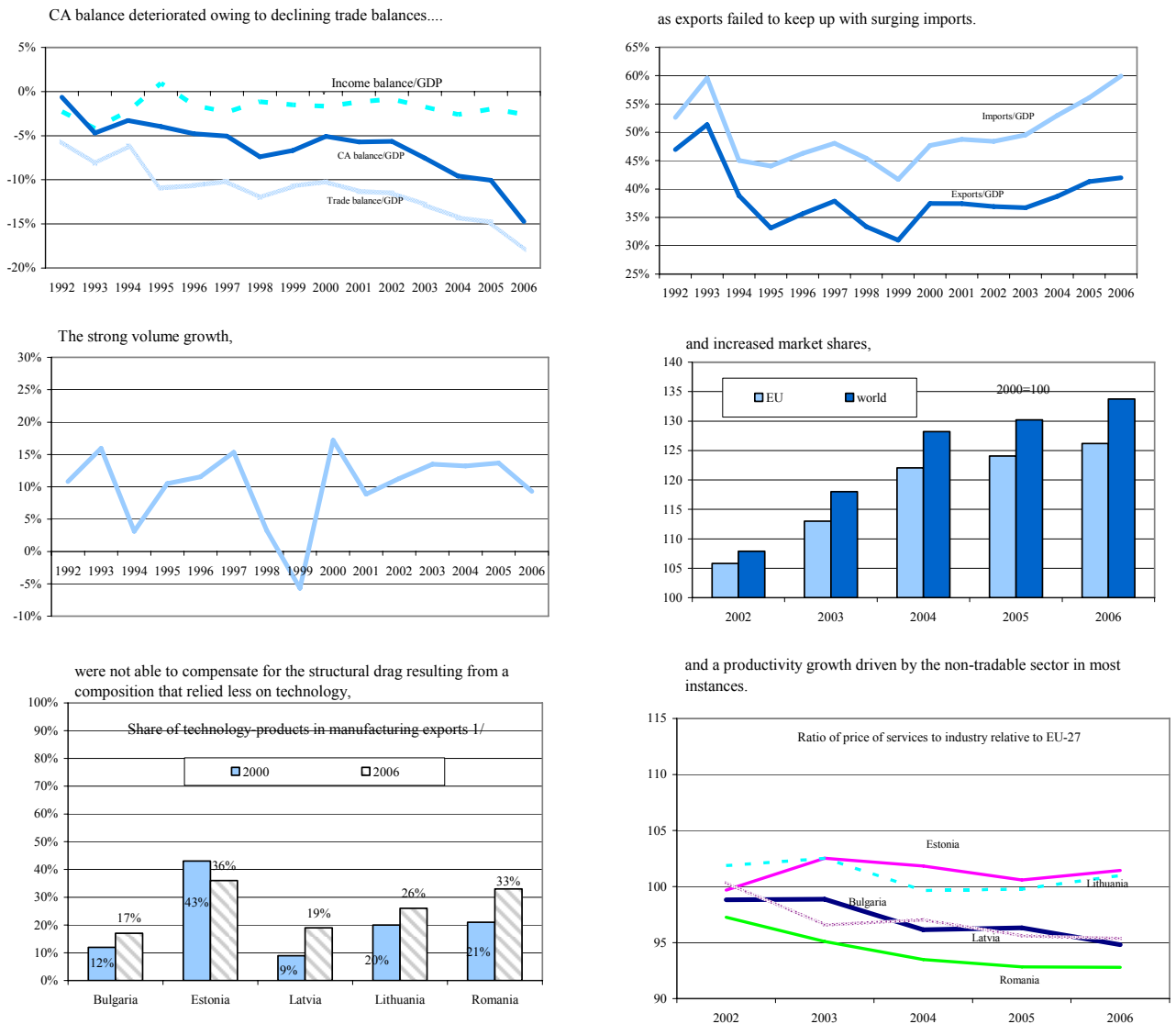

Source: WEO, Direction of Trade statistics, UNCTAD and Eurostat.
1/ Exports of manufacturing products at ISIC 29-35 as a share of exports of products at ISIC 15-36.

## V. Coming Back to Equilibrium: How Difficult Is the Road?

The countries in the high CAD group have all experienced a rapid widening during 2003-06. In Bulgaria, the CA deficit went from around 2 percent of GDP in 2002 to 16 percent in 2006. In Latvia and Romania, deficits tripled, in Lithuania, it doubled and in Estonia, which was already running a double-digit deficit in 2002, it widened by another 5 percentage points of GDP by 2006.

The force behind this rapid widening in these countries has been a private investment boom. Investment as a share of GDP increased in all of these countries while it remained unchanged in low CAD group. Both FDI and domestic credit growth contributed to this boom. Corporate sector credit as a share of GDP doubled in the Baltic countries during 2003-06, while in Bulgaria and Romania it went up by 1.5 times (Figure 8). In contrast, credit to GDP ratio in the rest of EU-10, apart from Slovenia and Hungary, hardly moved. Similarly, FDI stock increased more sharply in high CAD group during this period, with the extreme case of Bulgaria where the stock as a share of GDP more than tripled during 2003-06.

Figure 8. Evolution of Corporate Sector Credit and FDI in EU-10, 2002-06
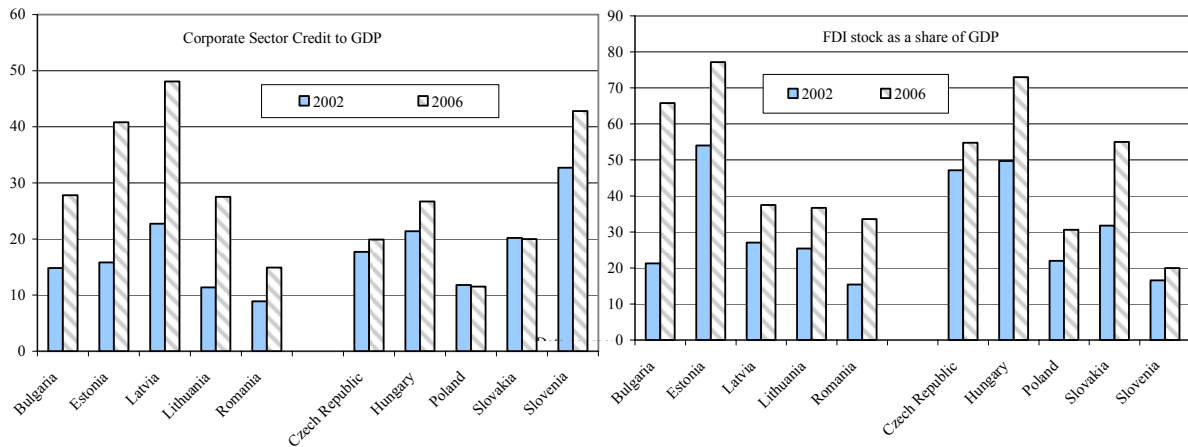
Source: Bems and Schellekens (2007) and UNCTAD.

Figure 9. Stock of Manufacturing FDI in EU-10, 2006
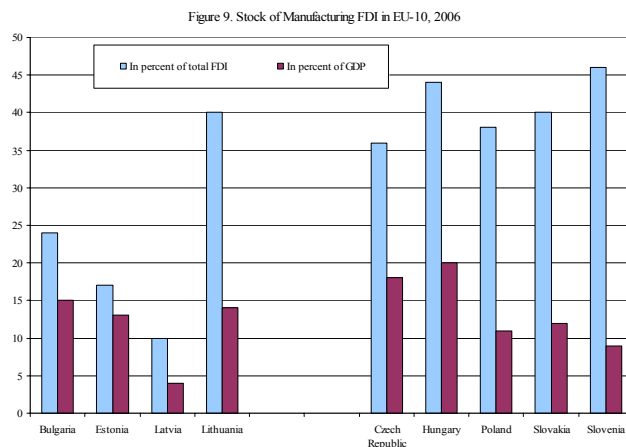
Source: National Bank websites and The Vienna Institute for International Economic Studies.

Generally speaking, a widening of the CA deficit that reflects increased investment as opposed to decreased savings implies higher future growth through the build-up of a larger productive capacity, and therefore enhanced intertemporal solvency (Milesi-Ferretti and Razin, 1996). However, this assessment makes

no assumption about the quality and composition of investment. A large part of recent investment in high CAD countries have funded activities in the non-tradable sector. About a third of this investment has taken place in backbone services, namely transportation, financial services and utility sectors, which will no doubt enhance the future productivity of these economies (Table 6). These large flows into basic services mostly, but not fully, reflect the low initial level of infrastructure and purchasing power in these economies compared to their peers. For example, with same initial relative income and reform status, Estonia has attracted about five times as much per capita FDI inflows into basic services as has Poland. It is not clear whether such investments are entirely justified by fundamental needs. In addition, a good part of the non-tradable sector investment have benefited the real estate and retail trade sectors, the productivity enhancing capacity of which are less clear. Meanwhile, with the exception of Lithuania, investment into manufacturing remains low both as a share of overall FDI and as a share of GDP (Figure 9).

Table 6: Composition of FDI Stock in High CAD Group, 2006

	In Percent of Total Stock, 2006			
	Bulgaria	Estonia	Latvia	Lithuania
Manufacturing FDI	24	17	10	40
Non-Manufacturing FDI	76	83	90	60
Basic Services	32	38	42	37
Financial Intermediation	16	28	25	16
Transport, storage	11	7	9	11
Utilities	5	3	9	11
Others	44	45	48	23
Construction	5	2	2	2
Trade	14	10	13	1
Hotels	1	0	1	1
Real estate	16	30	18	8
Others	7	2	15	11

Data source: National Bank websites.

While the jury is still out as to the productivity-enhancing capacity of recent investment that took place in high CAD countries, it is relatively clear what needs to be done. If these countries are to reduce their CA deficits to the neighborhood of equilibrium in an orderly fashion, the task is a daunting one, particularly since the bulk of the adjustment will most likely have to take place in the merchandise trade and services balances. Benefiting from recent large capital inflows, income balances, which are at present in the range of 0 percent and -5 percent of GDP, are expected to deteriorate further during the next 5 years. Assuming, this deterioration will be offset by the likely receipts of EU grants, the needed adjustment in the CA balance of approximately 2-3 percentage point of GDP per year will have to be driven by the balances in goods and services accounts.

The experience of low CAD countries, who were able to improve their exports as a share of GDP by about 3 percentage points each year during the last 10 years, do show that this can be done. This would, however, depend not just on higher growth, but a change in the composition of growth in favor of tradables. Exports will have play double duty to combat the likely upward pressure on imports from rising income, wage pressures, and a general EU-phoria, even as the credit and investment boom slows down. Preliminary numbers for 2007 show that a reversal of the widening trend in the CA deficit may indeed be in place at least for some of these countries.[12]

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[12] Preliminary data for all three Baltic countries indicate a slowdown since the third quarter of 2007. For example, Latvia's (seasonally unadjusted) CA deficit seemed to have peaked around 27 percent of GDP in 2006 Q4 and has fallen by 7.5 percentage points of GDP in the following four quarters.

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Appendix 1: Contribution of Explanatory Variables to CA norms in EU-10

Table 1: Pooled Estimate with Full Sample

	Bulgaria	Estonia	Latvia	Lithuania	Romania	Czech Republic	Hungary	Poland	Slovakia	Slovenia
Country dummy	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Fiscal balance	0.1%	-0.1%	-0.5%	0%	-0.5%	-0.7%	-1.4%	-1.0%	0%	-0.2%
Oil trade balance	-0.5%	-0.1%	-0.5%	-0.1%	-0.3%	-0.4%	-0.9%	-0.4%	-0.9%	-0.8%
Initial NFA	-4.4%	-5.8%	-3.6%	-3.9%	-2.3%	-1.7%	-4.6%	-2.4%	-2.5%	-1.0%
Old age dependency	-3.5%	-3.5%	-3.7%	-3.4%	-3.1%	-3.0%	-3.3%	-2.7%	-2.5%	-3.3%
Population growth	0.6%	0.2%	0.2%	0.4%	0%	0%	0.2%	0.2%	0.0%	-0.1%
FDI	-1.3%	-0.6%	-1.3%	-1.3%	-1.1%	-0.9%	-0.9%	-0.9%	-1.1%	-0.9%
Relative income	0.8%	1.6%	1.2%	1.2%	0.8%	1.7%	1.4%	1.1%	1.5%	1.7%
CA norm	-5.6%	-6.3%	-5.5%	-4.3%	-3.5%	-2.7%	-7.1%	-3.7%	-2.6%	-1.9%

Table 2: Fixed Effect Estimate with Full Sample

	Bulgaria	Estonia	Latvia	Lithuania	Romania	Czech Republic	Hungary	Poland	Slovakia	Slovenia
Country dummy	-4%	-8%	-4%	-4%	-4%	-1%	0%	3%	-1%	2%
Fiscal balance	0.0%	-0.1%	-1.1%	0%	-0.5%	-0.8%	-1.6%	-1.1%	0%	-0.3%
Oil trade balance	-1.3%	-0.3%	-1.9%	-0.3%	-0.7%	-1.1%	-2.4%	-1.1%	-2.4%	-2.2%
Initial NFA	-3.5%	-4.5%	-2.8%	-3.1%	-1.8%	-1.3%	-3.6%	-1.9%	-1.9%	-0.8%
Population growth	1.6%	0.4%	0.6%	1.0%	0.6%	-0.1%	0.4%	0.4%	0.0%	-0.2%
Output growth	-1.7%	-1.5%	-1.5%	-1.5%	-1.4%	-1.0%	-1.0%	-1.1%	-1.3%	-1.0%
CA norm	-8.5%	-13.6%	-10.8%	-8.4%	-7.8%	-5.1%	-7.9%	-2.0%	-6.2%	-2.0%

Table 3: Pooled Estimate, EUR (FDI)

	Bulgaria	Estonia	Latvia	Lithuania	Romania	Czech Republic	Hungary	Poland	Slovakia	Slovenia
Country dummy	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Fiscal balance	0%	0%	-0.3%	0%	-0.3%	-0.4%	-0.8%	-0.6%	0%	-0.1%
Oil trade balance	-1.3%	-0.3%	-1.4%	-0.3%	-0.7%	-1.1%	-2.3%	-1.1%	-2.3%	-2.1%
Old age dependency	-1.1%	-1.1%	-1.0%	-1.1%	-1.0%	-0.9%	-1.0%	-0.8%	-0.8%	-1.0%
Initial NFA	-2.6%	-3.3%	-2.1%	-2.3%	-1.3%	-1.0%	-2.7%	-1.4%	-1.4%	-0.6%
FDI	-3.2%	-3.0%	-2.9%	-2.1%	-2.7%	-3.4%	-2.4%	-2.9%	-1.5%	-1.8%
Real per cap. GDP growth	-0.8%	-0.8%	-0.4%	-0.8%	-0.8%	-0.6%	-0.6%	-0.6%	-0.7%	-0.5%
CA norm	-7.4%	-7.1%	-6.7%	-5.1%	-5.2%	-5.9%	-8.3%	-5.9%	-5.2%	-4.7%

Table 4: Pooled Estimate, EUR (Investment Climate)

	Bulgaria	Estonia	Latvia	Lithuania	Romania	Czech Republic	Hungary	Poland	Slovakia	Slovenia
Country dummy	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Fiscal balance	0%	0%	-0.3%	0%	-0.3%	-0.4%	-0.8%	-0.6%	0%	-0.1%
Oil trade balance	-1.4%	-0.4%	-1.5%	-0.4%	-0.7%	-1.2%	-2.5%	-1.1%	-2.5%	-2.3%
Initial NFA	-2.9%	-3.8%	-2.4%	-2.6%	-1.5%	-1.1%	-3%	-1.6%	-1.6%	-0.7%
Investment climate	-4%	-4%	-4%	-4%	-4%	-4%	-4%	-4%	-4%	-4%
Real per capita GDP growth	-1.3%	-0.6%	-1.3%	-1.3%	-1.1%	-0.9%	-0.9%	-0.9%	-1.1%	-0.9%
CA norm	-8%	-8%	-7%	-6%	-7%	-6%	-9%	-6%	-7%	-6%

Appendix 2: Robustness Check for Explanation of CA Divergence

This appendix uses alternative measures of (i) output gap and (ii) divergence between CA balance and estimated norms to check for robustness of the explanatory variables, and. The regression results, both pooled and FE, are reported in Tables 1-3 below.

Table 1: Regression Results Explaining Divergence from CA Norms

Dependent variable= Actual CA balance - Annual norm CA balance (as a share of GDP)

Variables	Coefficients, pooled	Coefficients, FE
C	-0.10*	
Output gap*openness 1/	-0.35***	-0.49***
Output gap squared	-1.24	-0.18
Relative cost competitiveness in manufacturing	0.12***	0.08**
Share of labor-intensive products in total exports	-0.06*	-0.06
EU accession dummy	-0.02**	-0.02***
Private sector credit to GDP	-0.04	-0.019
Private sector credit to GDP*Exchange rate regime dummy	0.06***	0.024
Overhead costs in the financial sector	-0.18	-0.22
Adjusted R^2	0.48	0.71
Number of countries	10	10
Number of observations	106	106

Note: ***, ** and * imply significance at 1%, 5% and 10% respectively.
1/ Output gap measured by applying HP filter on actual output to obtain the potential output.

Table 2: Regression Results Explaining Divergence from CA Norms

Dependent variable= Actual CA balance - Annual norm CA balance (as a share of GDP) 1/

Variables	Coefficients, pooled	Coefficients, FE
C	0.03	
Output gap*openness	-0.005***	-0.006**
Output gap squared	-0.001*	-0.001*
Relative cost competitiveness in manufacturing	0.03	0.04
Share of labor-intensive products in total exports	-0.07	-0.07
EU accession dummy	-0.03***	-0.03**
Private sector credit to GDP	-0.06**	-0.02
Private sector credit to GDP*Exchange rate regime dummy	0.06**	0.08**
Overhead costs in the financial sector	-0.25	-0.19
Adjusted R^2	0.51	0.68
Number of countries	10	10
Number of observations	73	73

Note: ***, ** and * imply significance at 1%, 5% and 10% respectively.
1/ Annual norms are calculated using coefficients reported in Table 4, first column (EUR sample with FDI as explanatory variable) and annual historical values of the dependent variables used in the norm regression.

Table 3: Regression Results Explaining Divergence from CA Norms

Dependent variable= Actual CA balance - Annual norm CA balance (as a share of GDP) 1/

Variables	Coefficients, pooled	Coefficients, FE
C	0.03	
Output gap*openness	-0.005***	-0.007**
Output gap squared	-0.001*	-0.001
Relative cost competitiveness in manufacturing	0.03	0.08
Share of labor-intensive products in total exports	-0.07	0.002
EU accession dummy	-0.03***	-0.02**
Private sector credit to GDP	-0.06**	-0.02
Private sector credit to GDP*Exchange rate regime dummy	0.06**	0.06**
Overhead costs in the financial sector	-0.25	-0.05
Adjusted R^2	0.51	0.76
Number of countries	10	10
Number of observations	73	73

Note: ***, ** and * imply significance at 1%, 5% and 10% respectively.

1/ Annual norms are calculated using coefficients reported in the pooled estimate of Table 1 and annual historical values of the dependent variables used in the norm regression.

Appendix 3: Data sources

The following variables were obtained from IMF's World Economic Outlook Database.
Current account balance
- Fiscal balance
- Foreign direct investment
- Real GDP at purchasing power parity
- Oil trade balance
- Real per capital GDP growth
- Population growth
- Openness of the economy

The following variables were obtained from the World Bank's World Development
Indicators Database.
- Population over 65 years
- Economically active population, i.e. population between 15 and 64 years old

The following variables were obtained from UNCTAD COMTRADE database
- Share of labor-intensive and light industrial products in total manufacturing exports:
  These products include food and beverage, tobacco, textile and textile products,
  leather products, toys and furniture.
- Share of medium- and high-tech. products in total manufacturing exports. These
  products include machinery and equipment, electrical and optical equipment, vehicles
  and transport equipment.

The following variables were obtained from Eurostat
- Unit labor costs in the overall economy and in manufacturing sector relative to
  trading partners.
- EU grants

Financial sector efficiency and private sector credit to GDP variables were obtained from
http://www.econ.brown.edu/fac/Ross_Levine/Publications.htm

The following 38 developing countries were included in the CA norm regression:
Algeria, Argentina, Bulgaria, Brazil, Chile, China, Colombia, Croatia, Czech Republic,
Egypt, Estonia, Hong Kong SAR, Hungary, Indonesia, India, Israel, Korea, Latvia,
Lithuania, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Romania,
Russia, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, Taiwan, Thailand,
Tunisia, Turkey, and Venezuela.

The following 21 developing countries were included in the CA norm regression:
Austria, Australia, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland,
Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland,
United Kingdom, United States.