

# 2. AN ASSESSMENT OF THE CURRENT ACCOUNT SUSTAINABILITY IN ROMANIA – AN INTER-TEMPORAL PERSPECTIVE

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Ionuț DUMITRU\*  
Ionela DUMITRU\*\*

## Abstract

*This paper assesses the sustainability of the CA deficit in Romania by estimating its structural component, based on an inter-temporal perspective. Using a large sample of panel data, we estimated long term relationships for the CA deficit and its fundamentals. The main conclusion of the paper is that there is an excessive CA deficit which should be adjusted. The results are showing that the structural CA could range between 6.3% and 10.9% of GDP, depending on the model used and the econometric procedure. Another important result of the paper is that the main drivers of the CA deficit in Romania, as well for other transition countries of Europe, are the economic convergence factors.*

**Keywords:** structural CA deficit, convergence, relative income, Ricardian equivalence

**JEL classification:** F15, F32, F37, F41

## 1. Introduction

After the fall of the communism, the transition countries from the Central and Eastern Europe and the Baltic States experienced large current account deficits, even higher than in other transition countries from other continents. The explanation could be related to the European Union accession perspective and the EU membership afterwards, which were the main drivers for massive investments. Together with the relatively low level of saving rate, the CA deficits started to rise and to reach quite high levels. The relatively high rates of economic growth in these countries were accompanied by increasing external deficits in some cases.

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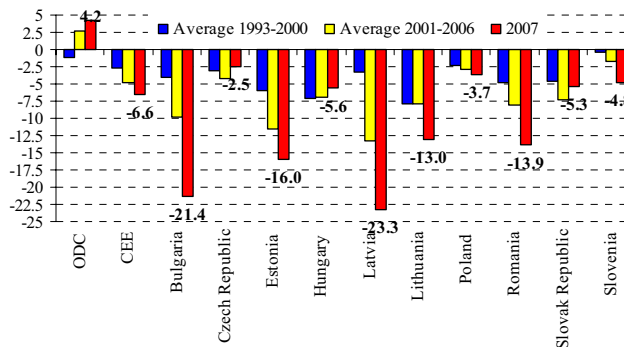
\* Lecturer, Academy of the Economic Studies Bucharest and Head of RESEARCH with Raiffeisen Bank Romania. E-mail: [ionut.dumitru@rzb.ro](mailto:ionut.dumitru@rzb.ro), [dumitruionut@yahoo.com](mailto:dumitruionut@yahoo.com). The paper has benefited from discussion at seminars at the Doctoral School of Finance and Banking (DOFIN, [www.dofin.ase.ro](http://www.dofin.ase.ro)). The author would like to thank, without implicating them, to Moisa Altâr, Ciprian Necula, Covrig Nicolae, Dan Bucșa, Nicolae Alexandru Chidesciuc for useful remarks and suggestions. The remaining errors are entirely my responsibility.

\*\* Assistant Professor, Academy of the Economic Studies Bucharest. E-mail: [ionela.jianu@yahoo.com](mailto:ionela.jianu@yahoo.com).

Nevertheless, the New Member States (NMS) had a different behavior in the current account deficit development. In some countries (Hungary, Poland, the Czech Republic, Slovakia, and Slovenia) there was an improvement or at least a stabilization of the balance of payment disequilibrium in the last years after a period of large CA deficits. For other countries (Bulgaria, Romania, and the Baltic States) it was a different evolution, the CA deficit increasing and reaching quite high levels (Figure 1).

Figure 1

The CA deficit (% of GDP) in NMS and other developing countries (ODC)

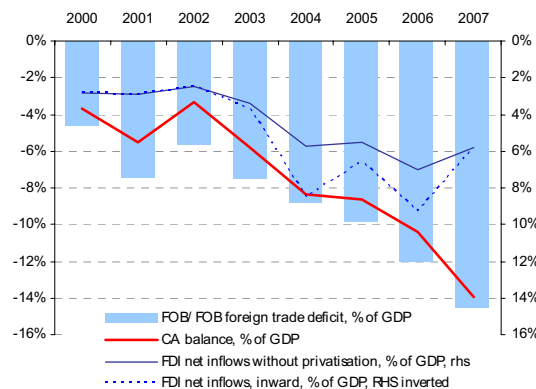


Source: IMF. Note: CEE countries include: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Croatia, Estonia, Hungary, Latvia, Lithuania, FYR of Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia, Turkey.

Although in some countries the coverage of the CA deficit by the FDIs remains comfortable (Figure 2), in some cases (Romania, for example) the coverage decreased, being more difficult to sustain the current large CA deficit over a long period, especially in the current context of risk repricing in the international markets.

Figure 2

Current account deficit and FDIs in Romania (% of GDP)

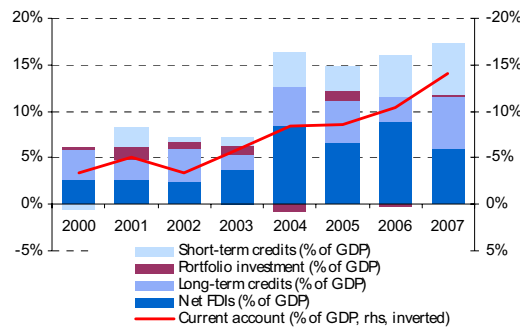


Source: NIS, NBR.

In the case of Romania, the concern about the CA sustainability is related also to the deterioration in its financing, the short-term component increasing (Figure 3). The external borrowings (with an increasing short-term component) are financing now a larger part of the CA deficit, most of them being originated by commercial banks (Figure 4).

Figure 3

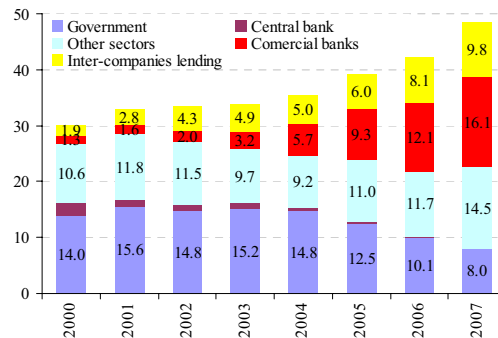
CA financing sources in Romania (% of GDP)



Source: NBR.

Figure 4

External debt by institutional sectors (% of GDP)



Source: NBR.

Despite the fact that the external debt has a still relatively low level, it increased very rapidly in the last years, especially the short term component, triggering a sharp increase in the external debt service (Table 1). Although the level of external debt is still low as compared to other countries from the CEE region, the coverage of external debt and external debt service by international reserves and exports deteriorated rapidly, being even worse as compared to other countries from the CEE. The external vulnerability indicators deteriorated continuously in the last couple of years (Table 1). Consequently, the concern regarding the CA sustainability increased in the last period.

Table 1

**External vulnerability indicators in Romania versus CEE countries**

INDICATORS	Country	2002	2003	2004	2005	2006	2007	2008-Q1
External debt (% of GDP)	Romania	33.4%	33.9%	35.4%	39.1%	42.1%	47.5%	49.1%
	CEE	49.2%	49.8%	49.3%	45.1%	51.2%	51.4%	n.a
External debt (% of exports)	Romania	94.7%	97.5%	98.4%	117.8%	131.0%	155.7%	159.1%
	CEE	130.0%	127.4%	119.6%	111.8%	118.8%	119.3%	n.a
External debt service (% of GDP)	Romania	8.8%	7.2%	8.2%	17.1%	20.3%	21.5%	19.9%
	CEE	9.6%	9.7%	9.1%	8.6%	9.1%	8.8%	n.a
External debt service (% of exports)	Romania	24.8%	20.8%	22.8%	51.5%	63.0%	70.3%	64.4%
	CEE	25.3%	24.9%	22.1%	21.4%	21.0%	20.5%	n.a
Short term external debt service (% of GDP)	Romania	1.1%	1.0%	1.6%	10.4%	13.6%	14.8%	13.7%
External debt service (% of international reserves)	Romania	60.6%	50.8%	41.7%	74.4%	86.3%	95.8%	91.1%
Short term external debt service (% of international reserves)	Romania	7.5%	7.2%	7.9%	45.3%	58.0%	66.0%	62.9%
Short term external debt (% of total external debt)	Romania	7.6%	11.1%	14.9%	20.8%	30.6%	35.7%	34.6%
	CEE	17.4%	20.6%	21.8%	23.8%	24.3%	24.5%	n.a
Import cover by international reserves	Romania	4.2	4.1	5.2	6.3	6.4	6.0	5.8
	CEE	5.0	4.9	4.4	4.2	4.2	4.1	n.a

Source: NBR, IMF.

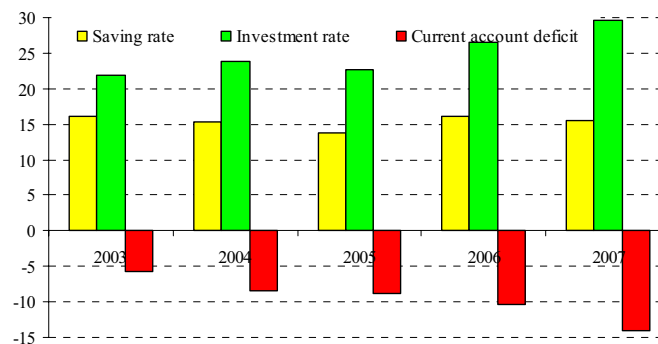
As compared to other countries from the CEE region or the Baltic States, Romania has a relatively high current account deficit, higher than in countries such as the Czech Republic, Poland or Slovenia, but lower than in the Baltics and Bulgaria.

The capital account liberalization triggered, like in the case of other developing countries, strong capital inflows which are fueling the current account deficit. Moreover, the catching up process needs capital goods imports, not only financial capital generating a commercial trade deficit. Consequently, it is a normal situation for a transition country, except for countries with rich natural resources (especially oil and other basic commodities), to experience current account deficits.

The external disequilibrium of Romania is generated mainly by the convergence process. As this paper reveals, there is a downward rigidity of the CA deficit at the 10% of GDP level, a decrease below this level being possible only at a high cost in terms of a slowdown in investment activity and of real convergence process. Moreover, the current account deficit in Romania is mainly structural and has a strong persistence. It reflects an increasing need for investments to sustain the catching up process and a low level of savings which is biased to consumption and to a lower degree to saving (Figure 5). Moreover, the CA deficit is generated mainly by the private sector, the public sector having a limited contribution (table 2).

Figure 5

Investment and saving rate and the CA deficit (% of GDP)



Source: NBR, NIS.

Table 2

Saving-investment balance in Romania

	2003	2004	2005	2006	2007
Public saving rate	1.2	1.7	1.8	2.6	1.2
Public investment rate	3.4	2.8	2.6	3.2	3.6
Public sector deficit	-2.2	-1.1	-0.8	-0.6	-2.4
Private saving rate	14.9	13.7	11.9	13.5	14.4
Private investment rate	18.5	21.0	20.0	23.3	26.0
Private sector deficit	-3.6	-7.3	-8.1	-9.8	-11.6
Current account deficit	-5.8	-8.4	-8.9	-10.4	-14.0

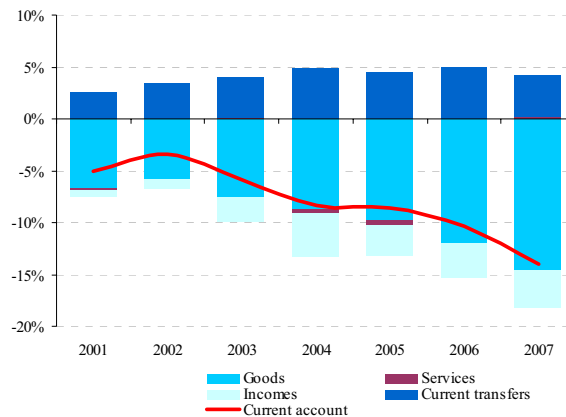
Source: NBR, NIS

## 2. The components of the CA deficit in Romania

The main driver of the CA balance is the trade balance (Figure 6). The trade balance deficit increased rapidly in the last years, from 7.5% of GDP in 2003 to 14.5% of GDP in 2007, the pace of increase accelerating in 2004-2005. At the same time, the data show that the share of imports in GDP (Figure 7) was quite constant in the last years, while the exports share in GDP decreased from 30% in 2003 to only 24.2% in 2007. At first sight, one could say that the deterioration of the external trade balance was driven mainly by the poor performance of exports. This could be partially true, as there was a continuous decline in the traditional export-oriented sectors in Romania (especially textiles and footwear), but we should do a more detailed analysis on the trade balance as there were some important structural changes.

Figure 6

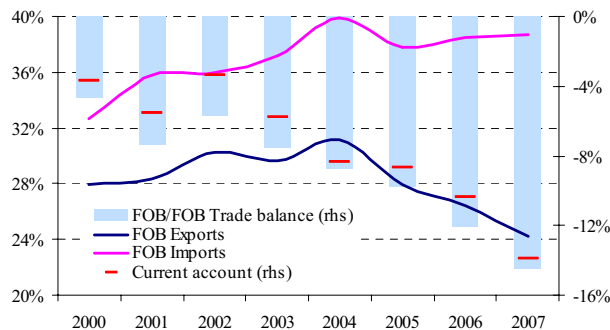
The components of the CA deficit (% of GDP)



Source: NBR, NIS.

Figure 7

Share of exports and imports in GDP



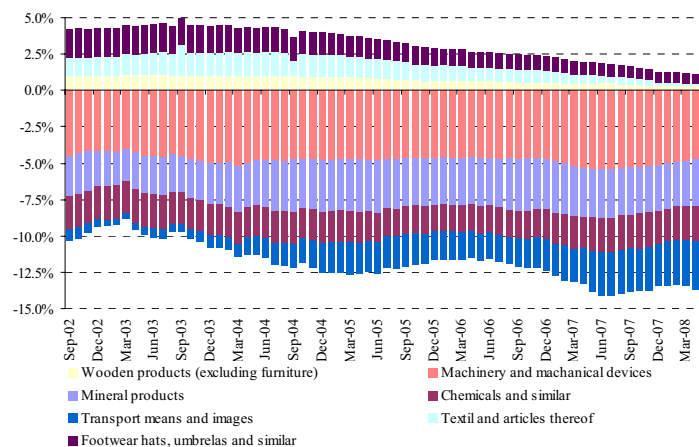
Source: NIS, author's calculations.

One may observe something very interesting from the structure of trade balance deficit<sup>1</sup>. Three out of the 19 sections of the combined nomenclature explained the largest part of the foreign trade deficit: V – Mineral products, VI – Chemical products, and XVI – Machinery and mechanical appliances; electrical equipment; sound and image recorders and reproducers. The foreign trade deficit recorded by the three sections remained almost unchanged between 2002 and 2007, accounting for around 10% of GDP (Figure 8). We think that this might be considered as a structural component of the total foreign trade deficit.

<sup>1</sup> Based on Combined Nomenclature statistical classification, which includes 19 sections. All shares in GDP are computed using 12 months rolling data.

Figure 8

## Trade balance by the main components of the Combined Nomenclature



Source: NIS, author's calculations.

The high share of section XVI – *Machinery and mechanical appliances; electrical equipment; sound and image recorders and reproducers* (around 5% of GDP) in the trade balance deficit is a result of increasing investment activity in the economy, especially as an effect of the high FDIs in the last years. The imports for this section increased from 9% of GDP in 2002 to 10.5% of GDP in 2007. This will create a sustainable base for real convergence of the economy and will enhance export capacity in the future. The import of technologies would remain important in the next years, being a feature and a requirement for the real convergence process. The Romanian economy relies too much on energy consumption. Energy intensity of the economy is one of the highest in EU27, as gross inland consumption of energy divided by GDP is more than 5 times higher in Romania than the EU27, average and more than 6 times higher than the Euro area average. From the total energy consumption, 45% is imported, and from section *Mineral products* (around 3.3% of GDP trade balance deficit, see Figure 8) 60% of the oil consumption and 30% of the gas consumption comes from imports. *Chemical products* are generating a trade deficit of around 2.3% of GDP, out of which pharmaceutical products accounted for around 50% of the section' deficit (1.1% of GDP).

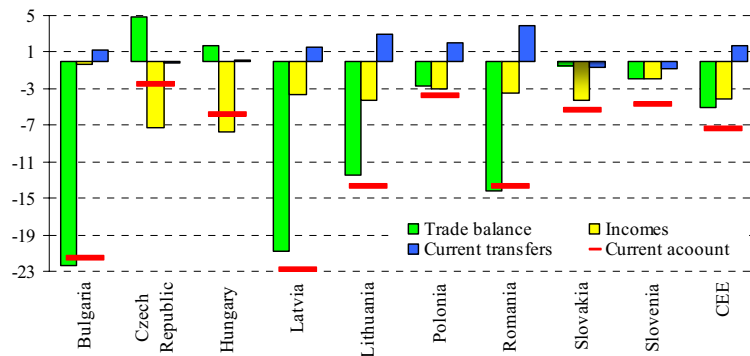
The foreign trade deficit in the three above-mentioned sections seems to have a very strong persistence, which means that it would continue to put strong pressure on the foreign trade deficit in the next period. As a result, we see important limits for a rapid decrease in the foreign trade deficit. Also, developments of the real exchange rate seem to have little impact on the dynamics of deficit for these three sections.

As we already stated, the main driver for the CA deficit in Romania is the development in the trade balance. The second component of the CA, the income balance, had also a negative contribution (a deficit of 3.6% of GDP in the first quarter of 2008, accounting for 26.2% of the CA deficit). We could expect the income balance would

increase its negative contribution in the coming years, as we can anticipate that the repatriated profits and dividends to be paid for FDIs would increase (due to the high stock of FDIs and given the experience of other countries from the CEE, see Figure 9, the Czech Republic experiencing even a CA deficit despite the trade balance surplus).

Figure 9

**The components of the CA in CEE countries (2007, % of GDP)**



Source: IMF.

Note: CEE: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Latvia, FYR of Macedonia, Poland, Romania, Slovakia, Slovenia.

The last component of the CA, the current transfers, reflecting mainly the remittances from Romanians working abroad and the current transfers with the EU budget, is positive. The net current transfers had a surplus of 4.2% of GDP in the first quarter of 2008, accounting for 30% of the CA deficit. Nevertheless, the positive contribution stemming from this component decreased in the last years, the remittances growth decelerating. Moreover, the EU budget contribution of Romania (around 1% of GDP in the next years) and the fact that the main part of the EU funds for Romania would be accounted on the capital account would lead to a decrease in the positive contribution of current transfers.

### 3. The model

The inter-temporal approach to the CA deficit was initially proposed by Sachs (1981) and extended by Obstfeld and Rogoff (1995, 1996). This approach is based on the saving and investment by a representative agent which is smoothing consumption over time borrowing and lending from/to abroad. A country will experience a CA deficit if temporary will have a high investment rate or a lower saving rate. This approach is appropriate for the countries which are in the convergence process and are experiencing high rates of investment that are fuelling the CA deficit.

The model used is similar to Bussiere, Frazscher and Muller (ECB, 2004) and Zanghieri (2004). Their model introduces the empirical observation of the persistence of the CA deficit and the absence of a full Ricardian equivalence.



The theoretical model is based on the permanent income theory, the temporary shocks to income being offset by temporary variations in aggregate savings and current account (Obstfeld and Rogoff, 1995, 1996).

The economy is a small open economy, with a constant international interest rate. We assume that the economy is populated by a continuum of individuals normalized to one. Bussiere, Frazscher și Muller (ECB, 2004) introduced the possible heterogeneity of the population.

The representative agent is maximizing his utility function on his lifetime:

$$\sum_{j=0}^{\infty} \beta^j E_t(u(C_{t+j})) \quad (1)$$

where:  $\beta$  is the discount factor,  $0 < \beta < 1$ ,  $E_t$  is the expectations operator conditional on the information set at time  $t$ , and  $C$  is private consumption.

The budget constraint is:

$$C_t + I_t + G_t + B_{t+1} = Y_t + (1+r)B_t \quad (2)$$

$$B_{t+1} - B_t = Y_t + rB_t - C_t - I_t - G_t \quad (3)$$

$Y$  - GDP;  
 $B$  - net financial assets;  
 $I$  - investments;  
 $G$  - Government consumption;  
 $CA$  - current account balance.

Applying the expectations operator on relation (2), we can obtain the following inter-temporal constraint:

$$-(1+r)B_t = \sum_{j=0}^{\infty} \left(\frac{1}{1+r}\right)^j E_t(Y_{t+j} - C_{t+j} - I_{t+j} - G_{t+j}) + \lim_{T \rightarrow \infty} \left(\frac{1}{1+r}\right)^T E_t(-B_{T+1}) \quad (4)$$

Iterating and imposing a "no-Ponzi game" condition gives:

$$\lim_{T \rightarrow \infty} \left(\frac{1}{1+r}\right)^T E_t(-B_{T+1}) = 0 \quad (5)$$

From equation (4) we obtain:

$$-(1+r)B_t = \sum_{j=0}^{\infty} \left(\frac{1}{1+r}\right)^j E_t(Y_{t+j} - C_{t+j} - I_{t+j} - G_{t+j}) = \sum_{j=0}^{\infty} \left(\frac{1}{1+r}\right)^j E_t(TB_{t+j}) \quad (6)$$

According to (6), the external debt stock should be equal to the present value of the future trade balance surpluses.

We can derive the optimal consumption maximizing relation (1) and under the budget constraint (2). We obtain:

$$E_t(U(C_{t+j})) = (1+r)\beta E_t(U(C_{t+j+1})), j = 0, 1, \dots$$

For  $j=0$ :

$$U(C_t) = (1+r)\beta E(U(C_{t+1})) \quad (7)$$

The standard inter-temporal model is also modified by Bussiere, Frazscher and Muller, (ECB, 2004) by introducing two types of agents: the first category is the agents which have liquidity constraints and they spend their entire disposable income in each

period, and the second category is that of agents which have an optimal behavior with respect to the inter-temporal allocation of consumption. The second category has also *habit formation persistence*; the intra-period utility depends not on the actual consumption as such, but on the degree by which actual consumption exceeds some fraction  $\gamma$  of the last period's aggregate consumption.

For deriving the optimal level of the current account deficit, we use the assumption that a permanent change in the current account is materializing only in the presence of a *habit formation*, with a gradual impact over time on the current account. The structural level of the current account is the level without cyclical influence and can be considered to be normal from inter-temporal point of view, and with some degree of persistence.

According with Obstfeld and Rogoff (1995), we define the current account as the increase in residents' claims on foreign income:  $CA_t = B_{t+1} - B_t$ . In terms of national accounts, these net savings of the open economy correspond to the sum of net income (returns on net foreign assets)  $rB_t$  and net output  $NO_t = Y_t - I_t - G_t$  minus aggregate consumption:

$$CA_t = rB_t + NO_t - \overline{C}_t \quad (8)$$

We can derive the following dynamic model of current account determination:

$$CA_t = (1 - \lambda)\gamma CA_{t-1} + \lambda(T_t + rB_t^G - G_t) + \frac{\gamma(1 - \lambda)}{1 + r} \Delta NO_t + (1 - \lambda)\left(1 - \frac{\gamma}{1 + r}\right)(NO_t - E_t \overline{NO}_t) \quad (9)$$

where: CA – current account;

$T$  – budget revenues;

$B_t^G$  – budget net assets;

$G_t$  – budget expenses;

$NO$  – net output  $NO = Y - I - G$ ;

$E_t \overline{NO}_t$  - the expected value of permanent level of net output;

$\lambda$  the share of non Ricardian agents and  $\gamma$  is the *habit persistence*.

One may observe that if  $\lambda$  and  $\gamma$  are zero, equation (9) becomes:  $CA_t = NO_t - E_t \overline{NO}_t$  which reflects that if the Ricardian equivalence is valid and there is no habit persistence, the CA deficit reflects only net output deviations from its permanent value. If  $\lambda$  and  $\gamma$  differ from zero, the CA deficit depends on its previous value, the fiscal deficit, first difference of net output and the deviation of net output from its permanent value.

## 4. Data and results

As we have already mentioned, we used in the estimations the methodology proposed by Bussiere, Frazscher and Muller (ECB, 2004). They used panel data for the OECD

countries plus the New Member States (from the 2004 and 2007 accession waves) for the period 1980-2002. In this paper, we used a much larger sample (138 countries) for the period 1980-2007 (1995-2007 for the developing countries). The OECD countries are used as a benchmark. The main source of data was the IMF and the World Bank.

The variables used to explain the dynamics of the CA deficit (as % of GDP) according to the theoretical model are:

- **The previous value of the CA (CA(-1))** – the expected sign is positive;
- **Fiscal balance as % of GDP (Def)** – the expected sign is positive;
- **Relative income (YPPPC)** derived as  $100 \cdot \ln(\text{country}_{it} / \text{OECD}_{it} \text{ average})$  for OECD countries and  $\ln(\text{country}_{it} / \text{average for the entire sample}_{it})$  for the other countries, the primary variable being GDP *per capita* in USD at PPP. The difference between the 2 calculation methods are explained by the convergence process. The expected sign is positive, a GDP per capita below average being associated with a CA deficit.
- **Investment rate (INVC)**:  $\text{country}_{it} - \text{OECD average}_{it}$  for the entire sample. The primary variable is gross capital formation as % of GDP. The expected sign is negative, an investment rate above its permanent value being associated leading to a deficit of the CA.
- **Public spending rate (GOVEC)**:  $\text{country}_{it} - \text{OECD average}_{it}$  for the entire sample. The primary variable is the budget expenditure as % of GDP. The expected sign is negative, a spending rate above its permanent value being associated leading to a deficit of the CA.
- **ΔNet output as % of GDP (Dno) calculated as  $\Delta(\text{GDP} - \text{Investment} - \text{Government consumption}) / \text{GDP}$** . The expected sign is positive.
- **Real effective exchange rate (REER) calculated as  $\ln(\text{REER}_{\text{country}_{it}} / \text{average}_{it})$** . The primary variable is REER (based on CPI), being introduced only in the alternative specification. The expected sign is negative, an exchange rate above trend (increase=appreciation) being associated with a CA deficit.

Table 3 presents the CA deficit, the budget deficit, the investment rate and the government expenditure rate in the New Member States plus Turkey and Croatia, but also in the OECD countries. Beside Slovenia, which experienced low CA deficit, the other CEEC12+2 experienced high deficits, the average being -5.9% of GDP in comparison with a surplus of 0.2% of GDP in the OECD countries.

Table 3

The indicators used for the period 1995-2007

	Current account (% of GDP)			Fiscal balance (% of GDP)	GDP per capita (USD at PPP)	Investment (% of GDP)	Government expenditure (% of GDP)
	Average	Max	Min	Average	Average	Average	Average
Bulgaria	-6.9	4.1	-21.4	1.0	7,624	19.2	38.7
Cyprus	-3.8	3.0	-7.1	-3.2	19,093	18.5	40.2
Czech Republic	-4.1	-1.6	-6.3	-2.2	17,318	26.8	40.7
Estonia	-10.2	-5.2	-16.0	0.9	12,899	29.6	35.8

	Current account (% of GDP)			Fiscal balance (% of GDP)	GDP per capita (USD at PPP)	Investment (% of GDP)	Government expenditure (% of GDP)
	Average	Max	Min	Average	Average	Average	Average
Croatia	-7.2	-2.9	-14.1	-4.5	11,109	26.1	49.9
Hungary	-6.9	-4.6	-8.4	-5.2	14,192	22.6	50.7
Lithuania	-8.5	-4.7	-13.0	-2.7	11,015	22.3	34.9
Latvia	-11.2	-4.7	-23.3	-1.1	10,245	25.9	36.5
Malta	-5.6	2.5	-12.3	-6.0	19,111	20.9	48.8
Poland	-3.7	-1.6	-7.4	-2.9	11,674	20.9	21.9
Romania	-6.9	-3.3	-13.9	-2.9	7,745	21.5	33.1
Slovakia	-6.7	-0.9	-9.5	-5.5	13,370	28.0	47.6
Slovenia	-1.7	1.1	-4.8	-1.0	19,527	25.3	45.9
Turkey	-3.0	2.3	-8.1	-6.0	6,585	20.0	26.3
CEEC 12+2	-5.9	4.1	-23.3	-2.8	12,297	23.3	39.4
OECD	0.2	17.2	-15.3	-1.8	22,277	21.3	44.9

The estimated model is the following dynamic model:

$$y_{it} = \alpha y_{it-1} + \beta X_{it} + u_{it} \quad (10)$$

where:  $i = 1 \dots N$  and  $t = 1 \dots T$  are the country, and the time, respectively.

The dependent variable  $y$  is the CA deficit as % of GDP. The model is dynamic due to the presence of the previous value of the dependent variable. The explanatory variables  $X$  are the change in net output, the fiscal balance, the relative income, the relative investment ratio and the relative ratio of public expenditure.

The estimations were performed with 3 different econometric methodologies, in order to avoid some econometric problems and to obtain consistent and unbiased estimators. The least square dummy variable (LSDV) could lead to biased estimators due to the correlation between the errors and the previous value of the dependent variable when we use limited samples (the „Nickell bias”, Nickell, 1981). In this paper, we used quite a high sample, much higher than the one used by Bussiere, Frazscher and Muller (ECB, 2004).

Alternatively, we used 2 methods which can diminish the disadvantages of the LSDV method. The first one is the two-stage least squares or instrumental variables (IV) or Anderson-Hsiao estimator (1982). The second one is based on the Generalized Moments Variable (GMM) and was developed by Arellano and Bond (1989).

The estimation results are presented for the baseline specification in Table 4. One should observe that despite that in the case of some estimators the differences are high, for the long-term relations the differences are much lower, except for IV. All the estimators are statistically significant and have the expected sign, except for the coefficient of the fiscal balance in the case of IV, which is low and statistically not significant. Also,  $R^2$  is high for all estimations.

Table 4

The dynamic model, baseline specification

	LSDV		IV		GMM	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
CA(-1)	0.45	29.43	0.46	11.68	0.39	992.56
DEF	0.30	11.18	0.02	0.30	0.39	839.99
DNO	0.03	5.88	0.18	4.27	0.08	471.55
YPPPC	0.02	2.51	0.02	2.39	0.001	81.93
INVC	-0.42	-19.50	-0.18	-3.77	-0.56	-556.98
GOVEC	-0.03	-1.41	-0.14	-3.35	-0.05	-148.21
R <sup>2</sup>	0.71		0.64			

The coefficient of the previous value of the CA is around 0.4, being in line with the existing literature (Chinn and Prasad, 2003, Bussiere, Frazscher and Muller, 2004). Between 37-46% of the previous value of the CA is reflected in the current CA, showing a certain degree of persistence, and the current account does not fully respond to changes in fundamentals instantaneously.

From the increase in fiscal deficit around 30% is reflected in an increase in the current account deficit. Moreover, the long term impact is higher (Table 8). This confirms the absence of the full Ricardian equivalence. The increase in net output is consumed in the main part, only a small part being reflected in higher savings and, consequently, in the current account.

The coefficient of the relative income shows that a per capita income below the average will be associated with a current account deficit. A per capita income of 10% below the average lowers the current account by around 0.2 % of GDP (the long run effect will be more than twice as much). The poorer countries can be assumed to grow more rapidly than the average and are thus borrowing based on expected future income.

An investment and a public spending ratio 1% above their "permanent" (average) levels are expected to induce a current account deficit higher by 0.18-0.42% of GDP, respectively 0.03-0.14% of GDP.

In the next step, we introduced also the Real Effective Exchange Rate as explanatory variable, obtaining an alternative estimation. The influence of REER is low, an overvalued REER with 10% leads to a higher CA deficit, but only by 0.2-0.3% of GDP (Table 5). The long-term effect is higher (Table 5).

Table 5

The dynamic model, alternative specification

	LSDV1		GMM1	
	Coefficient	t-stat	Coefficient	t-stat
CA(-1)	0.43	25.89	0.30	11.96
DEF	0.27	10.05	0.29	8.23
DNO	0.04	7.36	0.05	4.50

	LSDV1		GMM1	
	Coefficient	t-stat	Coefficient	t-stat
YPPPC	0.02	2.73	0.03	1.20
INVC	-0.45	-19.59	-0.40	-8.75
GOVEC	-0.06	-2.66	-0.12	-2.96
REERC	-0.03	-6.88	-0.02	-2.50
R <sup>2</sup>	0.73			

We calculated also the long-term relationship (Table 6), deriving the structural deficits, meaning the deficits which can be considered to be “normal” from inter-temporal point of view and when cyclical factors disappear. We used the methodology of Isard *et al*, 2001. Thus, the long term coefficients were calculated as  $\frac{\beta}{1-\alpha}$ . The change in net output was ignored.

Table 6

**The long term coefficients and the structural CA deficit in Romania in 2007**

	LSDV	TSLs	GMM	LSDV1	GMM1
DEF	0.545	0.046	0.635	0.480	0.604
YPPPC	0.028	0.042	0.002	0.032	0.087
INVC	-0.767	-0.324	-0.925	-0.781	-0.866
GOVEC	-0.057	-0.259	-0.088	-0.107	-0.223
REERC				-0.053	-0.036
<i>Structural CA deficit in Romania in 2007</i>	<i>-10.7</i>	<i>-10.9</i>	<i>-6.3</i>	<i>-10.3</i>	<i>-7.8</i>

On the basis of the estimated long-term relationships we can say that the structural current account deficit in 2007 ranged between 6.3 and 10.9% of GDP, depending on the model taken into consideration. The structural level was lower than the effective level, meaning that it was an excessive CA deficit, which is in line also with the findings of the previous sections of the paper. Moreover, since 2004 the deficit can be considered to be excessive (Figure 10).

Table 7

**Structural and effective current account deficit in 2007**

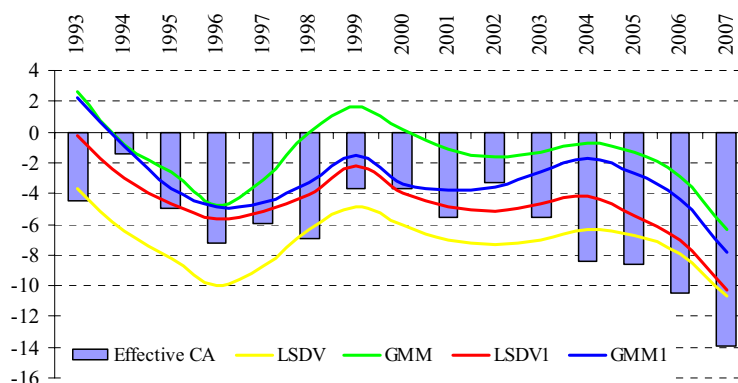
	Effective CA deficit in 2007	Structural CA deficit in 2007 (based on LSDV1)
Bulgaria	-21.37	-16.31
Czech Republic	-2.50	-2.31
Estonia	-15.99	-10.31
Hungary	-5.60	-6.76
Lithuania	-13.01	-11.09

	Effective CA deficit in 2007	Structural CA deficit in 2007 (based on LSDV1)
Latvia	-23.34	-15.21
Poland	-3.68	-3.53
Romania	-13.93	-10.30
Slovakia	-5.33	-4.99
Slovenia	-4.82	-3.42

We derived also the structural current account deficit for the other CEE countries, as well as for the Baltic States in 2007 (Table 7). According to our estimations, Romania, Bulgaria and the Baltic States experienced excessive deficits, at the same time the other countries had CA deficits very close to the equilibrium levels.

Figure 10

Development in the effective and structural CA deficit



The contributions of the explanatory variables (based on the LSDV1 and GMM1 models) to the structural CA deficit in Romania in 2007 were as follows (Table 8):

- A fiscal deficit of 2.3% of GDP led to a CA deficit of -1.1%, respectively -1.4% of GDP;
- A relative income below the sample average 2007 (the GDP per capita in USD at PPP was 11419 dollars, as compared to the sample average of 14109 dollars) led to a CA deficit of -0.7%, respectively -1.8% of GDP;
- An investment rate much above the OECD average led to a CA deficit of -4.76% respectively -5.27% of GDP;
- An spending rate below the OECD average (the “permanent” value) led to a reduction of CA deficit of 0.97% respectively 2.04% of GDP;
- The real effective exchange rate overvalued as compared to the average led to a deficit of 1.98%, respectively 1.34% of GDP.

Table 8

**The contributions of explanatory variables to the structural CA deficit in Romania in 2007**

	Value	Contribution to the structural CA deficit based on LSDV1 model	Contribution to the structural CA deficit based on GMM1 model
Fiscal balance	-2.30	-1.10	-1.39
Relative income	-21.15	-0.69	-1.83
Relative investment	6.09	-4.76	-5.27
Relative government expenditure	-9.13	0.97	2.04
Relative real effective exchange rate	37.59	-1.98	-1.34
Fixed effect		-2.75	
<b>Structural CA deficit</b>		<b>-10.30</b>	<b>-7.80</b>

## 5. Conclusion

The current paper assessed the sustainability of the current account deficit of Romania using a quantitative analysis based on an inter-temporal approach. The paper estimated the structural CA deficit based on fundamentals. The results obtained showed that the CA in Romania became an excessive one, the structural current account for 2007 ranging between 6.3% and 10.9% of GDP, depending on the model used and the econometric procedure.

The results emphasized an excessive CA deficit of Romania in the last years. The relatively low income per capita and the high rate of investment are the main drivers of the structural current account deficit, being perfectly rational to have a CA deficit for a transition country like Romania. Nevertheless, the CA deficit became excessive in some transition countries of Europe, including Romania.

Based on our results, we can say that the main driver of the CA deficit in Romania as well as in other transition countries is the convergence process. The analysis performed in this paper showed that there is a downward rigidity in the CA deficit of Romania at 10% of GDP, a decrease below this level being possible only with a slowdown in the investment activity, with a high cost in terms of real convergence. The high CA deficit in Romania is structural and persistent at his origin, as it reflects an increasing need for investments, both in private and public sector, in order to sustain the catching-up process towards the EU development level, and a low level of income biased towards a consumption behavior and in a less extent towards savings. In order to adjust the current account deficit, the public policies should be oriented towards stimulating savings, otherwise the current account deficit would be high and possibly increasing for a longer period of time.



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