2 THE TWIN DEFICITS SYNDROME – THE CASE OF ROMANIA[1]

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Abstract

This analysis examines the situation of "twin deficits" in Romania. For several years, the budget deficit and the current account deficit, as a tandem, have been at very high levels, a unique case in the EU. In 2024 both deficits were over 8% of GDP given that approx. half of the budget deficit is financed in foreign currency (the cash budget deficit was 8.64% in 2024).

Public debt has increased dramatically since the global financial crisis, rising from 12% in 2008 to over 54% of GDP in 2024. Tax revenues, including social security contributions, are well below the EU average – around 27% of GDP compared to 41% of GDP; and even below those of peer EU countries – Hungary, Poland, Bulgaria.

Romania's economy has made great progress in the last two decades in terms of income per capita (at purchasing power parity) and other benchmarks, but large deficits have led it into a very difficult situation, which requires a large-scale macroeconomic correction.

The correction of the budget deficit would reduce the current account deficit considerably; our estimates suggest a transmission coefficient of the budget adjustment of over 0.5. Our estimates show that the national currency is probably overvalued in real effective terms by about 4% by using the industrial production price deflator, but decisive for reducing the current account deficit is the reduction of the budget deficit.

European funds play a major role for the Romanian economy and can cushion the contractionary impact of the macroeconomic correction.

Keywords: competitivity, exchange rate, budget deficit, current account deficit, public debt, monetary policy, tax revenues.

JEL classification: E61, E62, F32, F34, H6, H63

Introduction

The Romanian economy has achieved a considerable degree of convergence within the EU in the last two decades. Thus, GDP per capita at purchasing power parity has reached approx. 80% of the EU average according to official data (Eurostat)[5]. However, Romania has been known for years for large budget and current account deficits, with a large contribution from the trade

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[5] *AMECO Online - AMECO Online (Current Version 2024-11-15 10:30) | Sheet - Qlik Sense*

balance. The budget deficit in ESA terms and current account deficit were both over 6,5% in 2025; in 2024 the cash budget deficit was 8.64% of GDP. And public debt has increased significantly after 2008 (when it was about 12% of GDP) reaching over 54% of GDP at the end of 2024. This situation raises a legitimate question: how sustainable are these deficits?

The "twin deficits" syndrome is prominent and raises numerous questions regarding domestic budgetary policy. At the same time, it is worth noting that Romania has among the lowest tax revenues (including social security contributions) in the EU, if we exclude Ireland, which is a tax haven.

The very large trade imbalance highlights also a competitiveness problem, which has become chronic over time. The balance with agri-food products is strongly unbalanced (although the balance with agricultural raw materials is in surplus), which alludes to shortcomings in economic/agricultural policy.

It should be emphasized that the current account deficit is financed to a significant extent by loans (in 2024 over 60%), which explains the increase in external debt.

Public debt, in the absence of fiscal consolidation, could easily exceed 60-70% in the near future. Romania has a low sovereign rating (although still investment grade) and the yield required by investors on its bonds is pretty high.

It is worth noting that substantial remittances from abroad significantly reduce[6] the current account deficit (admitting that it would not automatically be lower in the absence of these transfers). On the other hand, Romania has lost a lot of human capital through emigration.
This analysis mainly deals with the issue of twin deficits in Romania. The first section illustrates this situation in the European context. This is followed by a section that makes estimates regarding the relationship between the budget deficit and the current account deficit based on international experiences. The third section makes estimates regarding a presumed overvaluation of the national currency. The last part contains conclusions.

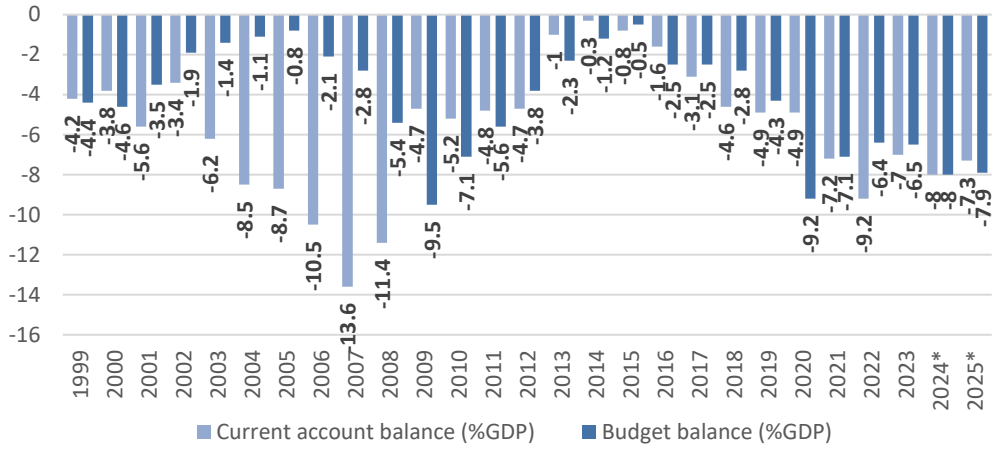
1. The budget deficit issue – *the twin deficit syndrome*

In 2014-2015, the budget deficit reached 1.2% and 0.5% of GDP, respectively (Figure 1), after a strong contraction in domestic absorption that was achieved through a severe cut in wage incomes in the budget sector in 2010. We are not discussing here how sustainable that "solution" to the budget imbalance was.

The current account deficit was below 1% of GDP in 2014-2015, which revealed a very high transmission coefficient of the budgetary adjustment in the evolution of the current account[7]. A period of systematic growth in the budget deficit followed, which was reflected in a similar dynamic growth in the current account deficit (Figure 1). Inadequate fiscal policies (changes in the tax regime) have increased the structural deficit after 2015 through increases in permanent expenditures and tax cuts.

[6] *In recent years (2021,2022,2023) the share was between 0.7% and 0.9% of GDP.*
[7] *The bankruptcy and insolvency of some high consumption energy companies also contributed to the adjustment of the current account deficit.*

Figure 1: Budget balance and current account balance in Romania (% of GDP)



Source: AMECO
*Note: * represents the forecast from the AMECO website*

Table 1 shows the size of the primary and structural deficits compared to other EU countries. It can be seen that Romania has the highest such deficits (for 2024 the deficits are estimated).

Table 1. Primary balance and structural balance in EU countries (% of GDP)

	2022		2023		2024	
	Primary balance (%GDP)	Structural balance (%GDP)	Primary balance (%GDP)	Structural balance (%GDP)	Primary balance (%GDP)	Structural balance (%GDP)
Euro Zone	-2.4	-4	-1.9	-3.6	-0.8	-2.8
European Union	-2.2	-3.7	-1.7	-3.5	-0.9	-2.8
Belgium	-2.6	-4.2	-2.3	-4.1	-2.2	-4.2
Bulgaria	-3	-3.4	-1.8	-2.3	-2.1	-2.7
Czechia	-2.2	-3.4	-1.9	-3.2	-0.3	-1.7
Denmark	4.8	4.1	4.6	4.1	3.4	3.4
Germany	-1.5	-2	-1.3	-2.1	-0.3	-1.4
Estonia	-1.1	-1.4	-0.8	-1.1	-0.1	-0.8
Irland	-3.1	-3.7	1.7	1	6.2	2.9
Greece	0.5	-2.5	1.7	-1.6	2	-1.3
Spain	-2.5	-4.8	-1.6	-3.9	-1.2	-3.6
France	-2.9	-4.8	-3.6	-5.4	-4	-6.1
Croatia	-0.1	-1.1	-0.3	-2	-1.5	-3
Italy	-4.9	-9.3	-4.2	-8.2	-0.2	-4.3
Cyprus	1.5	0.2	1.7	0.4	3.4	2.2
Latvia	-4.5	-5	-1.8	-2.6	-1.5	-2.6
Lithuania	-0.7	-1.2	0.7	0.1	-0.4	-1.2
Luxembourg	0.3	0.1	1	0.7	1.5	1.1
Hungary	-4.4	-7.2	-1.7	-6.4	0.2	-4.7
Malta	-3.5	-4.4	-3.5	-4.6	-2.7	-3.9

	2022		2023		2024	
	Primary balance (%GDP)	Structural balance (%GDP)	Primary balance (%GDP)	Structural balance (%GDP)	Primary balance (%GDP)	Structural balance (%GDP)
Netherlands	-0.8	-1.2	0.2	-1	1.1	0.2
Austria	-3.5	-4.4	-1.4	-2.6	-1.3	-2.8
Poland	-2.7	-4.5	-2.6	-4.7	-3	-5.3
Portugalia	1	-0.7	2.7	1.1	2.4	0.5
Romania	**-4.8**	**-6.2**	**-4.3**	**-6.2**	**-5.4**	**-7.4**
Slovenia	-3.2	-4.3	-2.4	-3.1	-1.6	-2.3
Slovakia	-0.9	-2	-3.8	-5	-4.1	-5.5
Finland	0.5	0	-0.4	-1.5	-0.6	-1.9
Sweden	1.4	0.9	0.9	0.2	0	-0.7

Souce: AMECO

Table 2 shows how complicated the current account deficit situation is in Romania compared to other EU countries that are under the EDP (excessive deficit procedure) since 2024.

Table 2. Current account balance in countries under excessive deficit procedure (% of GDP)

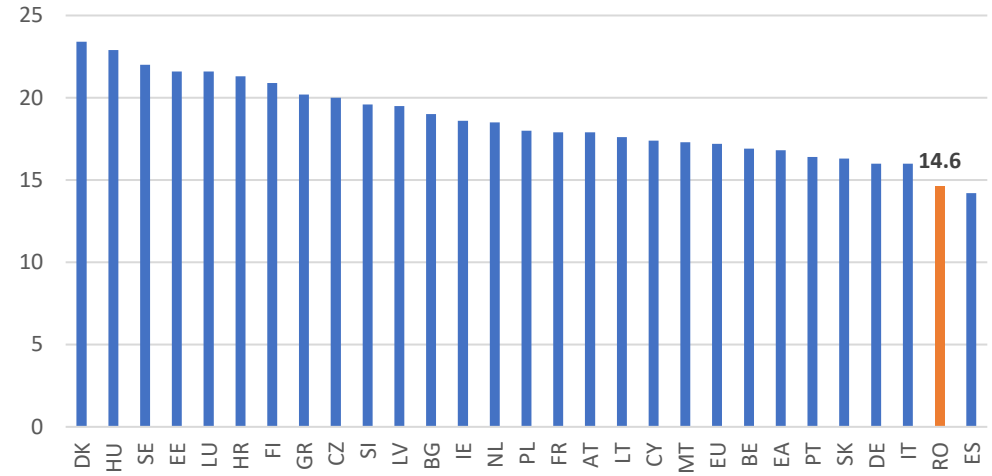
	2022	2023	2024*	2025*
Romania	-9.2	-7	-8	-7.3
Poland	-2.2	1.8	0.8	0.6
Hungary	-8.5	0.8	2	1.1
Slovakia	-9.6	-1.7	-2.8	-3.5
France	-1.2	-1	0.5	0.7
Italy	-1.7	0	1.1	1.2
Belgium	-1.3	-0.7	0.3	0.2
Malta	-0.8	6.4	5.6	5.5
EU states average	-1.5	1.3	1.8	1.6

Source: AMECO
*Note: * forecasts from the AMECO website*

In Romania, labor is overtaxed and capital is undertaxed, a fact reflected in external and internal documents/analyses[8]. But Romania is not overtaxed in the European context[9]. According to the latest Taxation Trends report[10], which analyzes the evolution of tax systems at European level, Romania recorded implicit tax rates[11] of 14.6% for consumption[12] (26th place in the EU - Figure 2) and 30.5% for labor (23rd place in the EU – Figure 3).

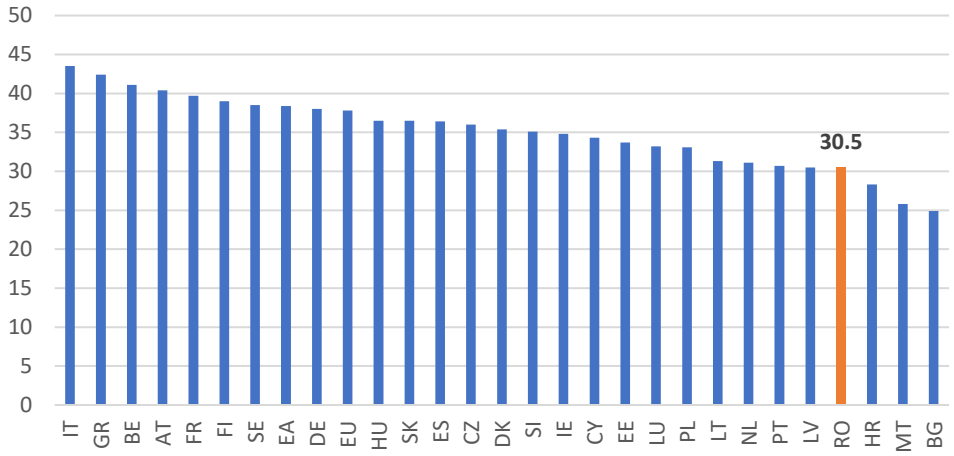
[8] *World Bank (RaportprivindsistemulfiscaldinRomania_BM.pdf) and IMF (Romania: Technical Assistance Report on Reforming Personal Income Taxation, Romania: Technical Assistance Report on Improving Revenues from the Recurrent Property Tax) have analyses in this regard.*
[9] *See also the analysis under the aegis of the Fiscal Council, May 2022 (Analiza_sistem_fiscal_RO.pdf)*
[10] *Annual Report on Taxation - European Commission, the data available in the report are for 2022.*
[11] *Determined as the ratio between tax revenues obtained and the relevant macroeconomic base. In the case of consumption, the relevant macroeconomic base is the final consumption of households, while for labor it is represented by gross wage earnings.*
[12] *It can be assumed that effective taxation is influenced by tax evasion.*

Figure 2. Implicit tax rate on consumption in EU countries in 2022 (%)



Source: Taxation Trends

Figure 3. Implicit tax rate on labour in EU countries in 2022 (%)

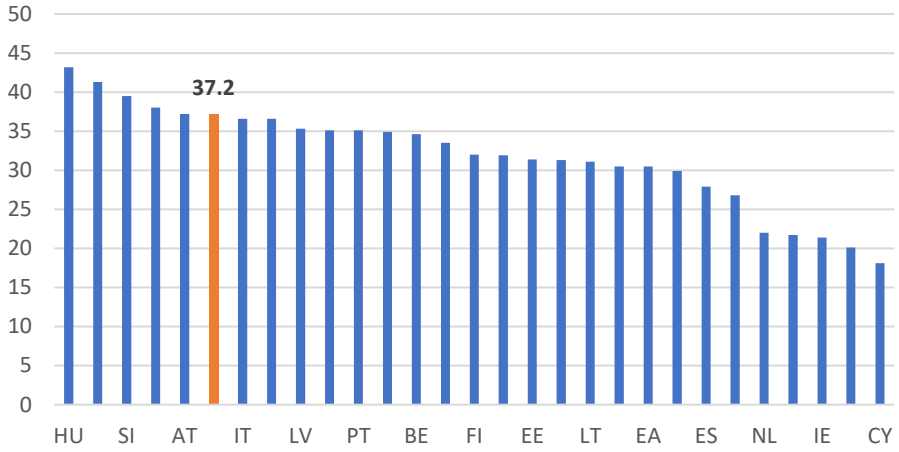


Source: Taxation Trends

Although the implicit tax rate on labour does not seem excessive, in terms of the tax burden for low-income employees (the report analyzes the tax burden for a single worker with an income of 50% of the average), Romania (37.2%) is in the top 5 EU countries in 2021 with the highest tax burdens, the EU average being 31.9%, and in the case of the euro area 30.5% (Figure 4). This is due to the legislative changes in 2017 (which became operational on January 1, 2018), which

shifted the tax burden almost entirely onto the employee, a fact never seen in other countries*13*. Regarding the latter aspect, international institutions such as the IMF or the World Bank propose a realignment of income taxation in order to increase the equity of the Romanian fiscal system.

Figure 4. Tax burden for a worker without a family, with income of 50% of the average in EU states in 2021 (%)



Source: Taxation Trends

Regarding capital taxation, the World Bank Report on the Romanian tax system[14] states that low capital taxation creates, in addition to low tax revenues, additional equity issues, as capital gains are predominantly obtained by higher-income groups. In addition, the preferential treatment applied to certain savings instruments exacerbates these equity issues and raises efficiency issues in terms of the distorting effects of tax rules on portfolio allocation decisions. Furthermore, the same report compares the Romanian system with that of European countries for total capital taxation both in terms of taxation at the corporate and individual levels. Romania ranks very low in this ranking, with a dividend tax rate of 8% (at the individual level) and a 16% corporate tax rate, with lower total tax rates only recorded in Hungary, Estonia and Latvia.

The strong reduction of the budget deficit, of domestic absorption in relative terms, is the way to the strong reduction of the current account deficit, under the given conditions. Because it is a fantasy to imagine a miracle in terms of productivity of the Romanian economy that would materialize in a massive increase of exports and a reduction of imports. However, a strong increase of the saving-investment imbalance in the private sector could diminish, even cancel, the positive impact of the reduction of the budget deficit on the current account deficit.
The 2014-2015 episode of diminshed domestic absorption, although very painful in terms of social and economic implications, showed a very high transmission coefficient. The IMF has an analysis in this regard and indicated a range of transmission based on international experiences of 0.3-0.6[15].

[13] *The decrease in the tax on wage income was offset by an increase in the SSC (social security contributions) rate. The shift of the burden of paying SSC to employees was motivated by the fact that employers often did not pay their share of employees' SSC without being penalized.*

[14] *Raport privind sistemul fiscal din Romania, Banca Mondiala, 2023 .pdf*

[15] *Romania - selected issues, IMF country report no.22/311, September 2022*

2. Budget deficit-current account deficit relationship

To examine the relationship between the current account deficit and the budget deficit, econometric estimates with panel data for the EU27 member countries were used for the period 1995-2023. The variables used are described in Table 3.

Table 3. Variables used to examine the relationship between the budget balance and the current account balance

Variable	Definition	Data source
Current account balance	Current account balance as % of GDP	AMECO, World Bank
Budget balance	Budget balance as % of GDP	AMECO
Actual effective rate (ULC37)	Annual variation in % of the real effective exchange rate calculated based on the ULC (unit labor cost)	European Commission, effective exchange rate calculated on the trade relationship with EU27 + Australia, Canada, Japan, Mexico, New Zealand, Norway, Switzerland, Turkey, United Kingdom, USA
GDP per capita growth rate	GDP per capita growth rate as a % compared to last year	World Bank
Total factor productivity (TFP)	Total factor productivity (TFP, index 2015=100)	AMECO
Output gap	Output gap as % of potential GDP	Estimated by the authors based on a Hodrick-Prescott filter applied to real GDP data from Eurostat
Trade openness	Sum of imports and exports as a percentage of GDP (%)	AMECO
Elderly population dependency rate	Ratio between the population over 65 years old and the population 15-64 years old (%)	EUROSTAT
Youth dependency rate	The ratio between the population under 15 years of age and the population 15-64 years of age (%)	EUROSTAT
Growth of the credit flows to the private sector	Annual growth in credit flows to the private sector (% of GDP)	EUROSTAT/European Central Bank
Government Effectiveness Index	It measures the quality of public services, policy formulation and implementation, and their independence from political pressure, as well as the credibility of the government's commitment to improving or maintaining these aspects. The index has values from -2.5 (less effective) to 2.5 (more effective).	World Bank
Public debt	Public debt as % of GDP	AMECO
Real interest rate	Real long-term interest rate (10 years)	EUROSTAT

The dependent variable used in the estimates is the current account balance as a percentage of GDP, and the explanatory variables used are: the budget balance as a percentage of GDP, the real effective exchange rate, GDP per capita, total factor productivity (TFP), trade openness, real interest rate, the cyclical position of the economy (output gap), demographic factors (the

dependency ratio of the elderly population to the young population), a financial factor (the share of private sector credit flow as a percentage of GDP), and an institutional determinant (the government efficiency index).

The results obtained from the OLS regressions are summarized in Table 4. In all estimated specifications, the coefficient of the budget deficit is positive and statistically significant, thus indicating the existence of "twin deficits". In the absence of complete Ricardian equivalence (a sensible assumption, by the way), an increase in the budget deficit leads to an increase in the current account deficit. **The estimates show that for a 1pp of GDP increase/decrease in the budget deficit, the current account deficit increases/decreases by an amplitude between 0.43 and 0.65 pp of GDP. The estimated size of the elasticity of the current account deficit to the budget deficit is similar to that estimated in other studies for Romania or for other countries, such as the IMF Country Report (2022), Dumitru and Dumitru (2009) or Afonso and Coelho (2022)**.

Changes in the real effective exchange rate have a statistically significant effect in all estimated specifications. **A 1pp appreciation of the real effective exchange rate (increase) brings a decrease (deterioration) in the current account balance of between 0.08-0.14 pp of GDP**. But this does not mean that one must necessarily resort to intentional depreciation of the leu to improve competitiveness, which would stimulate inflation[16]. A wage policy correlated with productivity dynamics and investments in increasing efficiency/productivity, that do not lead to an increase in unit labor costs, are preferable solutions for increasing competitiveness.
An increase in GDP per capita by 1pp leads to a deterioration of the current account by 0.09-0.28pp of GDP, through increased domestic demand (consumption and investment), which leads to increased imports, leading to a deterioration of the current account balance. Higher total factor productivity leads to an improvement in the current account position through increased exports. At the same time, trade openness seems to have a positive impact on the current account balance, but the coefficient is not statistically significant in all model specifications.

Regarding demographic variables, the life cycle hypothesis suggests that age is a factor that determines the consumption and saving behavior of households. In the estimates we cannot validate this hypothesis.
Concerning access to credit, it can lead to increased consumption and a decrease in the saving rate, which can induce a deterioration of the current account balance, a hypothesis validated by the estimates made, the coefficient in the regression being negative and statistically significant. Here one an discuss the need for macroprudential action to limit an overly alert dynamic of lending, especially on the consumer credit component.

Government efficiency captures aspects related to the quality of public services, the quality of economic policy formulation and implementation, and the credibility of the government and is a statistically significant and positively correlated explanatory variable with the current account balance.
As to the cyclical position of the economy, an increase in the positive output gap negatively influences the current account, leading to its deterioration, a 1pp increase in the output gap leading to a deterioration of between 0.9-1.18pp of GDP of the current account deficit. The effect of the cyclical position of the economy thus has a strong effect on the external position.

[16] *Cezar Boțel noted to us: it is one thing to have an overvaluation of 4% when you have a balanced current account or even a deficit of 1-2% of GDP, it is another to have an overvaluation of 7-8% of GDP. In addition, the appreciation - deficit growth relationship may be nonlinear, an otherwise plausible hypothesis. Over/undervaluation is judged in terms of real exchange rates (relative prices), so the best solution is to reduce inflation, which means that monetary policy must be firm and government policies (fiscal, income and structural reform) must be adequate. If this does not happen, then the only (temporary) relief valve ("letting off some steam") remains the nominal exchange rate.*

Table 4. The results of the panel data estimations (the current account deficit is the dependent variable)

Variable	Coef	Std. Error		Coef	Std. Error		Coef	Std. Error		Coef	Std. Error		Coef	Std. Error	
Budget balance	0.647	0.051	***	0.623	0.051	***	0.611	0.052	***	0.637	0.055	***	**0.432**	0.059	***
Real exchange rate (ULC 37)	-0.138	0.027	***	-0.143	0.027	***	-0.138	0.028	***	-0.116	0.026	***	-0.088	0.03	***
GDP per capita growth rate	-0.264	0.047	***	-0.275	0.048	***	-0.258	0.049	***	-0.264	0.048	***	-0.086	0.049	*
Total factor productivity	0.093	0.014	***	0.090	0.014	***	0.067	0.018	***	0.085	0.018	***	0.043	0.020	**
Output gap	-1.183	0.124	***	-1.145	0.125	***	-1.115	0.129	***	-0.898	0.128	***	-0.981	0.124	***
Trade openness				0.008	0.004	**	0.009	0.005	*	0.006	0.005	***	0.011	0.004	**
Elderly population dependency rate							0.098	0.044	**	0.173	0.045	***	0.193	0.042	***
Youth dependency rate										0.322	0.058	***	0.003	0.062	
Growth of the credit flows to the private sector										-0.104	0.036	***	-0.136	0.035	***
Government Effectivenss Index													4008	0.337	***
R-squared	0.324			0.320			0.318			0.367			0.518		
Obs. number	762			755			722			657			575		
Time period	1995-2023			1995-2023			1995-2023			1995-2023			1995-2023		

Source: authors estimations
*Note: *, ** and *** denotes statistically significant coefficient of 10%, 5% and 1% thresholds.*

The relationship between the current account and the budget deficit depend arguably on how consumers react to fiscal policy, namely in a Ricardian or Keynesian way. Under the Ricardian equivalence hypothesis, Barro (1974, 1989) , the budget deficit and the external deficit are not linked to each other, changes in fiscal policy leading to an intertemporal reallocation of saving. For example, a relaxation of fiscal policy in the present will result in an increase in the tax burden in the future, and economic agents (households and companies) increase their level of saving and reduce their level of consumption and investment in the present, which would cancel the budget deficit-current account deficit link.

The Ricardian equivalence hypothesis is heroic, however. In reality, the budget deficit and the current account deficit are frequently linked, the two deficits being more or less "twins". Regarding the "twin" deficit hypothesis, there are two approaches in the literature. The first of them is the Mundell-Fleming approach in which there is perfect capital mobility and flexible exchange rates. An increase in the budget deficit leads to an increase in the real interest rate, which will attract capital inflows and will determine an appreciation of the national currency and, implicitly, a deterioration of the trade balance (Salvatore, 2006). This mechanism is also valid in the case of fixed exchange rates (Anoruo and Ramchander, 1998). The second approach is the one in which an increase in the budget deficit leads to an increase in domestic absorption which will further stimulate imports and deteriorate the trade balance; a larger fiscal deficit leads to an increase in interest rates, an appreciation of the national currency and an increase in the trade deficit, a mechanism also described by Helliwell (1990). Measures that stimulate the growth of national saving can lead to higher investment rates and, therefore, to higher economic growth, without worsening the current account deficit to the same extent (Feldstein and Horioka (1980)).

Consumer behavior is determined by several factors, including the level of public debt. Studies of Bousina and Gabsi (2022), Sulikova and Tykhonenko (2017), show that when public debt exceeds a certain threshold level, a fiscal consolidation policy does not automatically lead to an increase in aggregate saving when the private sector reacts to improved long-term economic prospects by reducing its saving. In this case, a high level of public debt may be associated with a weak relationship between the budget deficit and the current account deficit[1]. On the other hand, if public debt is relatively small and consumers react in a Keynesian way (i.e. consumers react to a fiscal stimulus by consuming more), the relationship between the budget deficit and the current account deficit should be strong and positive.

Also, the relationship between the budget deficit and the current account deficit may be nonlinear and conditioned by other factors, such as the level of the real interest rate (Bilman and Karaoğlan, 2020), the cyclical position of the economy (output gap level) (Çatık, Gök and Akseki, 2015), or the level of the budget deficit (Ahmad, Aworinde and Martin, 2015).

By estimating regressions with panel data and thresholds, the relationship between the current account deficit and the explanatory variables previously considered was estimated for EU member countries on estimated thresholds of public debt, real interest rate and output gap level (see tables below).

The results of our estimates show that there may be several thresholds of public debt for which the relationship between the current account deficit and its explanatory factors may be different. Thus, from a small public debt level, as it increases, the effect of the budget deficit on the current account deficit increases (consumers have a more Keynesian behavior) and reaches a level of over 1:1 when public debt is between 27.3% of GDP and 49.6% of GDP, and if public debt continues to increase, the effect of the budget deficit on the current account deficit begins to attenuate (consumers seem to have have a more Ricardian behavior) and reaches a minimum level of over 0.34:1 when public debt exceeds the threshold of 85.6% of GDP. **The current level**

[1] *Macroprudential measures may be used to avoid cancelling out the effect of fiscal consolidation on the current account balance.*

of public debt in Romania (just over 50% of GDP) would suggest a very high transmission coefficient. But if the private sector compensates for the reduction of the budget deficit through private deficits, the relationship weakens.

Table 5. Results of the thresholds regression (current account deficit is the dependent variable)

Dependent variable: Current account balance (% of GDP)			
Method: Discrete Threshold Regression			
Included observations			
Variable	Coef	Std. error	
Public debt<27.3% of GDP - 144 obs			
Budget deficit	**0.450**	0.136	***
Real effective exchange rate (ULC37)	-0.078	0.040	*
GDP per capita growth rate	-0.423	0.093	***
Total Factor Productivity (TFP)	0.166	0.027	***
Output gap	-1.51	0.196	***
Trade openness	-0.054	0.017	***
27.3 of GDP<=Public debt<49.6 of GDP - 192 obs			
Budget deficit	**1.034**	0.104	***
Real effective exchange rate (ULC37)	-0.224	0.068	***
GDP per capita growth rate	-0.359	0.088	***
Total Factor Productivity (TFP)	0.037	0.027	
Output gap	-1.05	0.258	***
Trade openness	0.001	0.009	
49.6 of GDP<=Public debt<85.6 of GDP - 275 obs			
Budget deficit	**0.601**	0.095	***
Real effective exchange rate (ULC37)	-0.105	0.052	**
GDP per capita growth rate	-0.107	0.082	
Total Factor Productivity (TFP)	0.087	0.031	***
Output gap	-0.996	0.281	***
Trade openness	0.018	0.006	***
85.6 of GDP<=Public debt - 137 obs			
Budget deficit	**0.343**	0.094	***
Real effective exchange rate (ULC37)	0.104	0.080	
GDP per capita growth rate	0.033	0.101	
Total Factor Productivity (TFP)	-0.311	0.076	***
Output gap	0.145	0.304	
Trade openness	0.007	0.009	
R-squared	0.446		

Source: authors estimations
*Note: *, ** and *** denotes statistically significant coefficient of 10%, 5% and 1% thresholds.*

Table 6. Results of the thresholds regression (current account deficit is the dependent variable)

Dependent variable: Current account balance (% of GDP)			
Method: Discrete Threshold Regressionc			
Included observations: 677 observations after adjustments			
Variable	Coef	Std. error	
RREAL< -0.97% - 133 observations			
Budget deficit	**0.553**	0.130	***
Real effective exchange rate (ULC37)	-0.397	0.089	***
GDP per capita growth rate	-0.304	0.101	***
Total Factor Productivity (TFP)	0.157	0.040	***
Output gap	-1.719	0.293	***
Trade openness	-0.011	0.009	
-0.97%<=RREAL< 3.96% - 443 observations			
Budget deficit	**0.985**	0.071	***
Real effective exchange rate (ULC37)	-0.230	0.055	***
GDP per capita growth rate	-0.424	0.069	***
Total Factor Productivity (TFP)	0.079	0.027	***
Output gap	-1.322	0.176	***
Trade openness	0.022	0.005	***
3.96%<=RREAL - 101 observations			
Budget deficit	**0.203**	0.104	*
Real effective exchange rate (ULC37)	-0.116	0.080	
GDP per capita growth rate	-0.038	0.112	
Total Factor Productivity (TFP)	-0.064	0.050	
Output gap	-0.808	0.343	**
Trade openness	-0.026	0.016	
R-squared	0.428		

Source: authors estimations
*Note: *, ** and *** denotes statistically significant coefficient of 10%, 5% and 1% thresholds.*

Regarding the impact of the cyclical position of the economy on the budget deficit - current account deficit relationship, the results of our estimates show that there may be 2 thresholds of the output gap for which the relationship between the current account deficit and its explanatory factors may be different. Thus, starting from a negative output gap, as it decreases, the effect of the budget deficit on the current account deficit amplifies (consumers have a more Keynesian behavior) and reaches a level of over 0.8:1 when the output gap exceeds 0.103% of potential GDP. **Our results indicate that the relationship between the current account balance and the budget balance is influenced by economic activity: twin deficits are present especially when the output gap is positive, that is, when the economy is operating above its potential level. When the economy is operating below its potential level, the link between the budget and current account positions appears weak - a coefficient of only 0.096 and statistically insignificant**.

Table 7. Results of the thresholds regression (current account deficit is the dependent variable)

Dependent variable: Current account balance (% of GDP)			
Method: Discrete Threshold Regression			
Included observations: 755 observations after adjustments			
Variable	Coef	Std. error	
Output gap < -1.11% - 134 observations			
Budget deficit	**0.096**	0.094	
Real effective exchange rate (ULC37)	-0.070	0.044	
GDP per capita growth rate	-0.195	0.082	***
Total Factor Productivity (TFP)	0.121	0.030	***
Output gap	-0.275	0.415	
Trade openness	0.027	0.011	**
-1.11%<=Output gap< 0.103% - 283 observations			
Budget deficit	**0.601**	0.100	***
Real effective exchange rate (ULC37)	-0.100	0.046	**
GDP per capita growth rate	-0.562	0.101	***
Total Factor Productivity (TFP)	0.045	0.025	*
Output gap	-1.372	0.766	*
Trade openness	0.001	0.006	
0.103%<=Output gap - 338 observations			
Budget deficit	**0.798**	0.069	***
Real effective exchange rate (ULC37)	-0.234	0.044	***
GDP per capita growth rate	-0,239	0.066	***
Total Factor Productivity (TFP)	0.075	0.020	***
Output gap	-2.074	0.207	***
Trade openness	0.014	0.006	**
R-squared	0.415		

Source: authors estimations
Note: *, ** and *** denotes statistically significant coefficient of 10%, 5% and 1% thresholds..

There is, however, a conceptual problem with this finding: the relationship between the output gap and deficits, the sustainability of public debt. This is because massive european funds finance the economy and allow it to go to a potential that can be "deceptive". Let's imagine what would happen if there were no european funds, what would be the potential GDP, deficits, etc. Moreover, emerging economies may face a strong foreign exchange constraint, which may reduce the relevance of the output gap and "excess demand" when judging the optimality of the macroeconomic policy mix.

3. Is the national currency overvalued?

This analysis is not primarily concerned with competitiveness. However, an attempt has been made to estimate the overvaluation of the leu in recent years. Various approaches are used in

the literature to estimate the real equilibrium exchange rate (Clark and MacDonald, 1998). In this paper, the behavioral equilibrium exchange rate (BEER) approach was used, which is based on econometric cointegration techniques that estimate the real equilibrium exchange rate determined by fundamental factors.

Quarterly data for the period 2006Q1-2024Q3 were used in the estimates, and the exchange rate of the leu against the euro was used (an alternative approach would be to use a euro-dollar basket depending on the weights of the 2 currencies in Romania's foreign trade[2]). Regarding the calculation method of the real exchange rate, different variants of deflators are used in the literature, such as the harmonized index of consumer prices, the harmonized index of consumer prices with fixed taxes, the industrial production price index, the manufacturing production price index, the GDP deflator, the unit labor cost (ULC – unit labor cost).

Our estimates used the exchange rate deflatad with the manufacturing production price index[3]. Regarding the fundamental factors used in the estimates as determinants for the real equilibrium exchange rate, they are:

- ***The differential in labor productivity growth between Romania and the euro area*** – according to our estimates, a 1 pp faster growth in labor productivity in Romania than in the euro area appreciates the real equilibrium exchange rate of the leu against the euro by about 0.39%. A faster growth in labor productivity in the Romanian economy relative to the euro area economy leads to increased competitiveness and appreciation of the national currency in both real and nominal terms. An alternative explanation for the appreciation of the real (not the nominal) exchange rate through an increase in the productivity growth differential is offered by the Balassa-Samuelson effect.
- ***Net international investment position (NIIP) as a % of GDP***– according to our estimates, a 1 pp GDP increase (improvement) in the net investment position appreciates the real equilibrium exchange rate of the leu against the euro by about 0.57%.
- ***Terms of trade differential (TOT, Terms of trade)*** – according to our estimates, a 1 pp faster increase in the growth differential between export and import prices between Romania and the euro area appreciates the real equilibrium exchange rate of the leu against the euro by about 0.13%. The terms of trade represent the ratio between export prices and import prices. A faster increase in export prices than import prices leads to an improvement in the trade deficit, which appreciates the exchange rate of the national currency.
- ***Net foreign assets as a % of GDP (NFA)*** – according to our estimates, a 1 pp GDP increase in net foreign assets appreciates the real equilibrium exchange rate of the leu against the euro by about 0.6%.
- ***The openness of the economy as a % of GDP (openess)*** – according to our estimates, a 1 pp GDP increase in the degree of openness of the economy appreciates the real equilibrium exchange rate of the leu against the euro by about 0.23%.

After the cointegration relationships between the real exchange rate and its fundamentals were estimated, in order to obtain the deviation of the exchange rate from equilibrium, trends (long-

[2] *Or an effective exchange rate calculated as a weighted average of the nominal bilateral exchange rates of the leu against the foreign currencies in which foreign trade is denominated.*

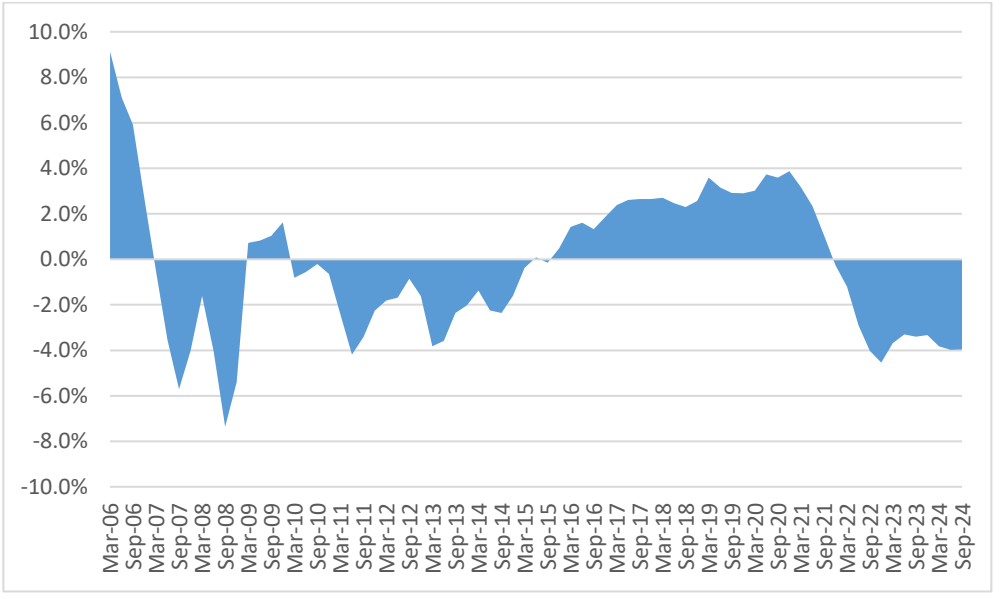
[3] *Tudor Grosu believes that it is implausible that after the 2020 and then 2022 crises, results using different deflators would be similar. For example, in recent years, the IPP has substantially reduced its inflationary traction. On the other hand, since labor costs have reacted with a lag compared to the initial cause of the shocks of recent years (energy prices, the functioning of global production/distribution chains, resulting in increases in the prices of goods/raw materials), the degree of overvaluation of the leu calculated with the ULC deflator has increased substantially (unlike the case of using the IPP deflator).*

term values) for the determinants of the real exchange rate were estimated based on Hodrick-Prescott filters. The trend values of the determinants of the exchange rate were then introduced into the estimated cointegration relationship and the deviation from equilibrium was then calculated as the difference between the recorded real exchange rate and the real equilibrium exchange rate estimated based on the cointegration relationships.

Several cointegration relationships between the real exchange rate and its fundamentals (taken individually or in the variant with two fundamentals) were estimated and 5 variants of equilibrium exchange rate models were finally retained on the basis of which the deviations from equilibrium of the real exchange rate were determined. These variants were combined into a consensus variant of deviation from equilibrium as a simple arithmetic average of the 5 variants of deviations from equilibrium (a more complex and more correct approach would be that of a weighted average, the weights being given by the stability of each model of the 5 estimated models and retained for the final results).

As can be seen in the graph below, estimates made for this analysis indicate an overvaluation of the leu of approx. 4% in recent years. In the period 2006-2024, periods of undervaluation alternated with others of overvaluation. There are estimates from colleagues in the NBR who see an overvaluation of the real effective exchange rate of the leu significantly lower than 4%.

Figure 5. Deviation from equilibrium of the real exchange rate in the period 2006-2024 (%)



Source: Authors estimations
Note: Positive values of the deviation from equilibrium of the exchange rate represent an undervaluation, while negative values represent an overvaluation.

Competitiveness depends on the value added in various sectors, the dependence on imports (terms of trade), the allocation of resources to areas that produce tradables and the overvaluation of the leu. An industrial policy can support competitiveness if it focuses on the production of tradables, especially in areas with high added value. An industrial policy, however, requires resources, fiscal space and, last but not least, it must be efficient; otherwise resources are wasted.

A development bank can help in this regard

4. Conclusion

The findings of this analysis show why the budget deficit must be reduced, especially since our economy has a positive output gap. The correction of the deficit over a period of 7 years takes into account the magnitude of this imbalance and the need for reforms. It is true, however, that markets are more uncertain in a deteriorating international environment, and a period of 7 years presents risks. There is also a "Trump effect", which can lead to an appreciation of the USD, to significant destabilizing flows of capital , to the occurrence of "sudden stops"; all the more so it is necessary to reduce the budget deficit.

Our estimates show that for a 1pp of GDP increase/decrease in the budget deficit, the current account deficit increases/decreases by an amplitude between 0.43 and 0.65 pp of GDP. The estimated size of the elasticity of the current account deficit to the budget deficit is close to that estimated in other studies for Romania, or for other countries. It is worth mentioning here the financing of the current account deficit through loans which was over 60% in 2024, and the fact that foreign direct investments (FDI) can distort reality (because they automatically finance the current account deficit).

The argument that large deficits are justified by large investments is questionable given the existence of EU funds, which appears massively on both the expenditure and revenue sides of the public budget. In addition, investments must support the development of tradables production. This analysis did not deal *par excellence* with competitiveness, even if an estimate of the overvaluation of the leu was attempted. There are structural causes that influence competitiveness: value added in various sectors, presence in supply chains, dependence on imports (terms of trade), etc. Various estimates regarding the overvaluation of the leu range from 2% to 8%; our analysis has estimates close to 4%.

The main inference of the analysis is that adjusting the budget deficit would reduce the current account deficit by a transmission coefficient of over 0.5.

The productivity-wage correlation to achieve an effective exchange rate closer to equilibrium is relevant, as an intended depreciation of the national currency poses risks. EU funds can considerably help productivity/competitiveness gains, especially when tradable sectors are targeted.

Our results suggest that the relationship between the current account balance and the budget balance is influenced by economic activity; twin deficits are more visible especially when the output gap is positive, that is, when the economy is operating above its potential. When the economy is operating below its potential, the link between the budget and current account positions weakens.

There is a conceptual problem with the relationship between the output gap and deficits, the sustainability of public debt. Massive European funds finance the economy and allow it to go to a potential that can be "deceptive". Let's imagine what would happen if there were no European money, what would be the potential GDP, deficits, etc. And emerging economies may face a strong foreign exchange constraint, which can reduce the relevance of the output gap and "excess demand" when judging the optimality of the macroeconomic policy mix.

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