

Discrepancies between Public Investments and Government Deficit and Debt

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ABSTRACT : *From a symbol of healthy public finance in the Economic and Monetary Union in 1992, fiscal criteria on government deficit and debt have become constraints of fiscal policy and economic development in 2020, with public investments (gross fixed capital formation - GFCF) often diminished to meet the Maastricht fiscal targets. The model proposed in this article recalculates the government deficit based on redefining investment expenditure and recalculates the reference values of government debt for each Member State of the European Union. The model aims to increase investment through methodological simplification in order to update the Stability and Growth Pact (SGP) through a new mechanism for supervising the investments at EU level called "deficient investments procedure" similarly to the „excessive deficit procedure”.*

Keywords – *European System of Accounts (ESA 2010), government deficit, government finance statistics, public investments and national accounts.*

I. INTRODUCTION

In 1992, representatives of the Member States and major economists met in Maastricht and concluded that, according to statistical evidence and detailed calculations, a country's public finances are stable if the government deficit does not exceed 3% of GDP, and public debt is lower than 60% of GDP. The regulations according to which all the values included in the analysis are calculated must be harmonized at the level of all countries, so as to reflect comparable realities. The ESA seemed the most appropriate statistical standard, being already used in the preparation of national accounts by the EU member states and having the System of National Accounts issued by United Nations (SNA) as international correspondent.

Butiet Franco (2005) investigates the origins of the fiscal rules and considers that the fiscal criteria imposed by the Treaty on EU (TFEU) did not represent innovations in 1992 and the chosen solution was mainly due to the multinational nature of Economic and Monetary Union.

Reuter (2020) is of the opinion that it is easier to postpone the start of a new investment project than to reduce the salaries of public administration employees or to reduce the social benefits that are regulated by the legal framework. However, due to the effects on economic growth, the reduction of investment spending has more negative effects on economic growth than the reduction of other categories of expenditure.

This article aims to answer the questions: “Is a more flexible approach to deficit and debt needed? Is it recommended to redefine the aggregates taken into account when measuring the deficit and debt? Should the legal framework, namely the ESA 2010 regulation, be amended or should the Stability and Growth Pact be updated?”

II. IMPACT OF ESA 2010 AND OF FISCAL RULES ON THE GOVERNMENT SECTOR OF ROMANIA

Unlike the business accounting, where there is the concept of investment depreciation, in public accounting (IPSAS) and in the government finance statistics, the investment expenditures (gross fixed capital formation) are recorded in full at the time of transfer of ownership of fixed assets to the institutional unit that intends to use them in production (ESA 2010 paragraph 3.134).

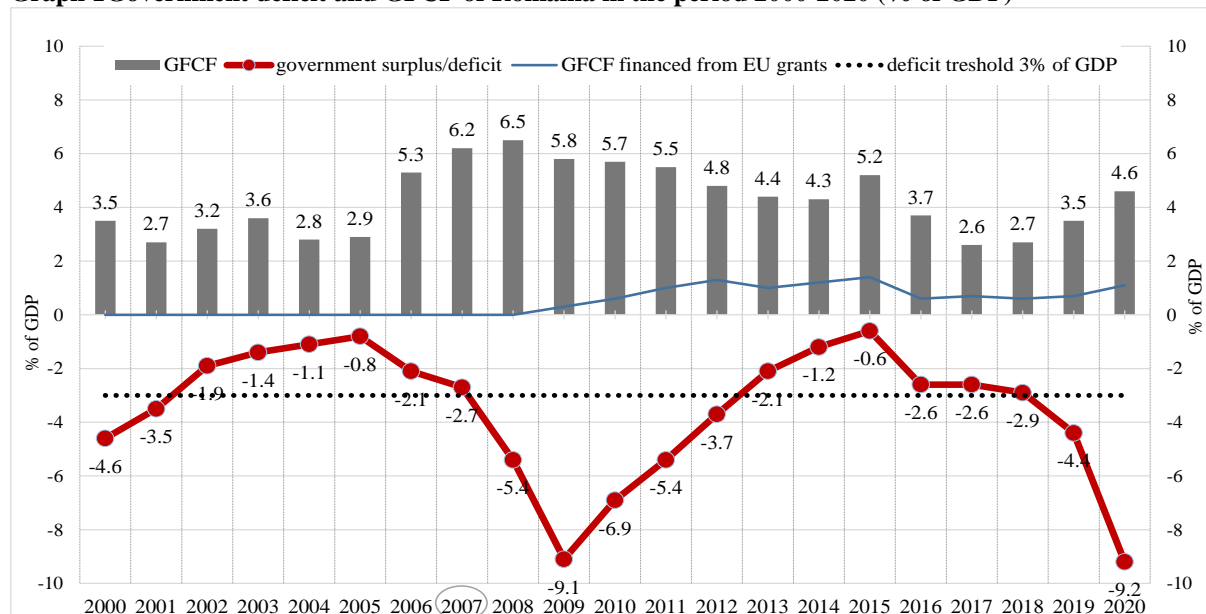
Given the significant values of investment, this rule on FBCF recording affects greatly the government decision to carry out investment projects due to the immediate impact on the government deficit.

Romania's case is the most eloquent, because in order to meet the government deficit targets, the investment expenditures (gross fixed capital formation) were mainly diminished. From the graph below it can be

seen how the deficit level decreases when the GFCF level decreases, especially in the period and 2009-2013 when Romania was in the excessive deficit procedure. In the period 2006-2008 and 2018-2020 there was an increase in both the level of government deficit and the level of GFCF in relation to GDP.

In the period 2012-2014, the decrease of GFCF expenditures was moderated due to the use of non-reimbursable EU funds, the use of which does not affect the deficit.

Graph 1 Government deficit and GFCF of Romania in the period 2000-2020 (% of GDP)



Data source: Eurostat, online database

The Romanian authorities have repeatedly "ex-ante" consulted Eurostat on the impact of infrastructure investment projects (such as motorways) on the government deficit and debt. The ESA rules were clear, no engineering of national accounts (respectively Public Private Partnership - PPP) could have avoided the impact of capital expenditures and related financing on Romania's government deficit and debt (according to the Eurostat report on the dialogue visit to Romania in 2015 in the context of the excessive deficit procedure)¹. Those contracts were not approved for various reasons, including the impact on the public deficit. Unfortunately, in 2021 there is still not even a finished highway in Romania.

The situation observed in Romania was not singular, in the other Member States the same tendency of decreasing the investments expenditures for complying to the government deficit target was observed, respectively the simultaneous reduction of the gross fixed capital formation of the public administration and of the government deficit in relation to GDP.

III. PROPOSALS TO REFINER THE FISCAL RULES OF STABILITY AND GROWTH PACT BASED ON EXISTING METHODOLOGY AND AVAILABLE DATA

Government deficit and debt targets have often been surpassed in the last 20 years, either because of the financial crisis or as a result of inefficient fiscal policies. Therefore, Member States have been constrained by the excessive deficit procedure to generally implement budgetary austerity measures to comply with the deficit and debt thresholds. As revenues were limited and the deficit had to be reduced immediately, expenditures were reduced and capital expenditures were the most affected, especially the gross fixed capital formation.

The model developed in this paper aims to increase investment through methodological simplification in general, leading to economic growth. Based on the statistical evidence of the last 20 years, general government investment has suffered the most due to the fiscal policy constraints targeting the government deficit. Even though in 2015, in the context of the Juncker Plan² for Investment in the European Union, the

¹ Final Findings EDP dialogue visit to Romania 12-13 November 2015 17-18 December 2015

<https://ec.europa.eu/eurostat/documents/1015035/6940197/Final-findings-EDP-dialogue-visit-RO-12-13-Nov-17-18-Dec-2015.pdf/899c7f08-deb5-4335-85ec-8042242da56e>

²REGULATION (EU) 2015/1017 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 June 2015 on the European Fund for Strategic Investments, the European Investment Advisory Hub and the European Investment Project

Stability and Growth Pact was made more flexible by an investment clause³, the complexity and the restrictions did not encourage Member States to request that investment derogation in the context of the excessive deficit procedure. Governments instead preferred to postpone the investment projects or even not to start them.

Table 1 Government balance (B.9) according to ESA 2010 in the EU Member States in the period 2000-2020 (% of GDP)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
UE	-1.2	-1.9	-2.7	-3.1	-2.7	-2.3	-1.4	-0.5	-2.0	-6.0	-6.0	-4.1	-3.6	-2.9	-2.4	-1.9	-1.4	-0.8	-0.4	-0.5	-6.9
ZE	-1.3	-2.0	-2.7	-3.1	-2.9	-2.6	-1.5	-0.6	-2.2	-6.2	-6.3	-4.2	-3.7	-3.0	-2.5	-2.0	-1.5	-0.9	-0.5	-0.6	-7.2
BE	-0.1	0.2	0.0	-1.9	-0.2	-2.7	0.2	0.1	-1.1	-5.4	-4.1	-4.3	-4.3	-3.1	-3.1	-2.4	-2.4	-0.7	-0.8	-1.9	-9.4
BG	-0.5	1.0	-1.2	-0.4	1.8	1.0	1.8	1.1	1.6	-4.0	-3.1	-2.0	-0.3	-0.5	-5.4	-1.7	0.2	1.2	2.0	2.1	-3.4
CZ	-3.6	-5.8	-6.4	-6.9	-2.4	-3.0	-2.2	-0.6	-2.0	-5.4	-4.2	-2.7	-3.9	-1.3	-2.1	-0.6	0.7	1.5	0.9	0.3	-6.2
DK	1.9	1.1	0.0	-0.1	2.1	5.0	5.0	5.0	3.2	-2.8	-2.7	-2.1	-3.5	-1.2	1.1	-1.3	-0.1	1.8	0.7	3.8	-1.1
DE	-1.6	-3.0	-3.9	-3.7	-3.3	-3.3	-1.7	0.3	-0.1	-3.2	-4.4	-0.9	0.0	0.0	0.6	1.0	1.2	1.4	1.8	1.5	-4.2
EE	-0.1	0.2	0.4	1.8	2.4	1.1	2.9	2.7	-2.6	-2.2	0.2	1.1	-0.3	0.2	0.7	0.1	-0.4	-0.7	-0.6	0.1	-4.9
IE	4.9	1.0	-0.5	0.3	1.3	1.6	2.8	0.3	-7.0	-13.9	-32.1	-13.0	-8.3	-6.2	-3.5	-1.9	-0.7	-0.3	0.1	0.5	-5.0
EL	-4.1	-5.5	-6.0	-7.8	-8.8	-6.2	-5.9	-6.7	-10.2	-15.1	-11.3	-10.5	-9.1	-13.4	-3.6	-5.9	0.2	0.6	0.9	1.1	-9.7
ES	-1.2	-0.5	-0.3	-0.4	-0.1	1.2	2.1	1.9	-4.6	-11.3	-9.5	-9.7	-10.7	-7.0	-5.9	-5.2	-4.3	-3.0	-2.5	-2.9	-11.0
FR	-1.3	-1.4	-3.2	-4.0	-3.6	-3.4	-2.4	-2.6	-3.3	-7.2	-6.9	-5.2	-5.0	-4.1	-3.9	-3.6	-3.6	-3.0	-2.3	-3.1	-9.2
HR	-3.0	-2.2	-3.3	-4.5	-5.1	-3.6	-3.1	-2.2	-2.9	-6.2	-6.5	-8.0	-5.5	-5.6	-5.5	-3.5	-0.9	0.8	0.2	0.3	-7.4
IT	-2.4	-3.2	-2.9	-3.2	-3.5	-4.1	-3.6	-1.3	-2.6	-5.1	-4.2	-3.6	-2.9	-2.9	-3.0	-2.6	-2.4	-2.4	-2.2	-1.6	-9.5
CY	-2.2	-2.1	-4.1	-5.9	-3.7	-2.2	-1.0	3.2	0.9	-5.4	-4.7	-5.7	-5.8	-5.6	-8.8	-0.9	0.3	1.9	-3.5	1.5	-5.7
LV	-2.7	-1.9	-2.3	-1.6	-1.2	-0.5	-0.5	-0.6	-4.3	-9.6	-8.6	-4.1	-1.4	-1.2	-1.6	-1.4	0.2	-0.8	-0.8	-0.6	-4.5
LT	-3.2	-3.5	-1.9	-1.3	-1.4	-0.3	-0.3	-0.8	-3.1	-9.1	-6.9	-8.9	-3.1	-2.6	-0.6	-0.3	0.2	0.5	0.6	0.5	-7.4
LU	5.5	5.6	2.0	0.3	-1.4	-0.2	1.9	4.4	3.5	-0.2	-0.3	0.7	0.5	0.9	1.4	1.4	1.9	1.3	3.0	2.4	-4.1
HU	-3.0	-4.0	-8.8	-7.2	-6.6	-7.8	-9.3	-5.1	-3.8	-4.8	-4.4	-5.2	-2.3	-2.6	-2.8	-2.0	-1.8	-2.4	-2.1	-2.1	-8.1
MT	-5.5	-6.1	-5.4	-9.0	-4.3	-2.8	-2.5	-2.1	-4.1	-3.2	-2.3	-2.4	-3.4	-2.3	-1.6	-1.0	0.9	3.2	1.9	0.4	-10.1
NL	1.2	-0.4	-2.0	-3.1	-1.8	-0.5	0.0	-0.2	0.1	-5.2	-5.3	-4.5	-4.0	-3.0	-2.3	-2.1	0.0	1.3	1.4	1.8	-4.3
AT	-2.4	-0.7	-1.4	-1.8	-4.8	-2.5	-2.5	-1.4	-1.5	-5.3	-4.4	-2.6	-2.2	-2.0	-2.7	-1.0	-1.5	-0.8	0.2	0.6	-8.9
PL	-4.0	-4.7	-4.8	-6.0	-5.0	-3.9	-3.5	-1.9	-3.6	-7.3	-7.4	-5.0	-3.8	-4.2	-3.6	-2.6	-2.4	-1.5	-0.2	-0.7	-7.0
PT	-3.2	-4.8	-3.3	-5.7	-6.2	-6.1	-4.2	-2.9	-3.7	-9.9	-11.4	-7.7	-6.2	-5.1	-7.4	-4.4	-1.9	-3.0	-0.3	0.1	-5.7
RO	-4.6	-3.5	-1.9	-1.4	-1.1	-0.8	-2.1	-2.7	-5.4	-9.1	-6.9	-5.4	-3.7	-2.1	-1.2	-0.6	-2.6	-2.6	-2.9	-4.4	-9.2
SI	-3.6	-4.5	-2.4	-2.6	-1.9	-1.3	-1.2	0.0	-1.4	-5.8	-5.6	-6.6	-4.0	-14.6	-5.5	-2.8	-1.9	-0.1	0.7	0.4	-8.4
SK	-12.6	-7.2	-8.2	-3.1	-2.3	-2.9	-3.6	-2.1	-2.5	-8.1	-7.5	-4.3	-4.4	-2.9	-3.1	-2.7	-2.6	-1.0	-1.0	-1.3	-6.2
FI	6.9	5.0	4.1	2.4	2.2	2.7	4.0	5.1	4.2	-2.5	-2.5	-1.0	-2.2	-2.5	-3.0	-2.4	-1.7	-0.7	-0.9	-0.9	-5.4
SE	3.1	1.4	-1.4	-1.2	0.3	1.8	2.2	3.3	1.9	-0.7	0.0	-0.2	-1.0	-1.4	-1.5	0.0	1.0	1.4	0.8	0.6	-3.1

Data source: Eurostat, online database

B.9 = net lending / net borrowing of government sector

B.9 = government surplus / deficit

B.9 = government revenues – government expenditures

The table above includes data of the government surplus/deficit of the Member States, the Eurozone (ZE) and the EU (B.9 according to the ESA 2010 methodology) in relation to GDP. The fiscal deficit criterion set out in the TFEU refers to these data. For a better view, the values equal or higher than the threshold (-3% of GDP) were highlighted in red.

Portal and amending Regulations (EU) No 1291/2013 and (EU) No 1316/2013 — the European Fund for Strategic Investments <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015R1017&from=EN>

³ Communication from the Commission to the European Parliament, the Council, the European Central Bank, the Economic and Social Committee, the Committee of the Regions and the European Investment Bank making the best use of the flexibility within the existing rules of the Stability and Growth Pact

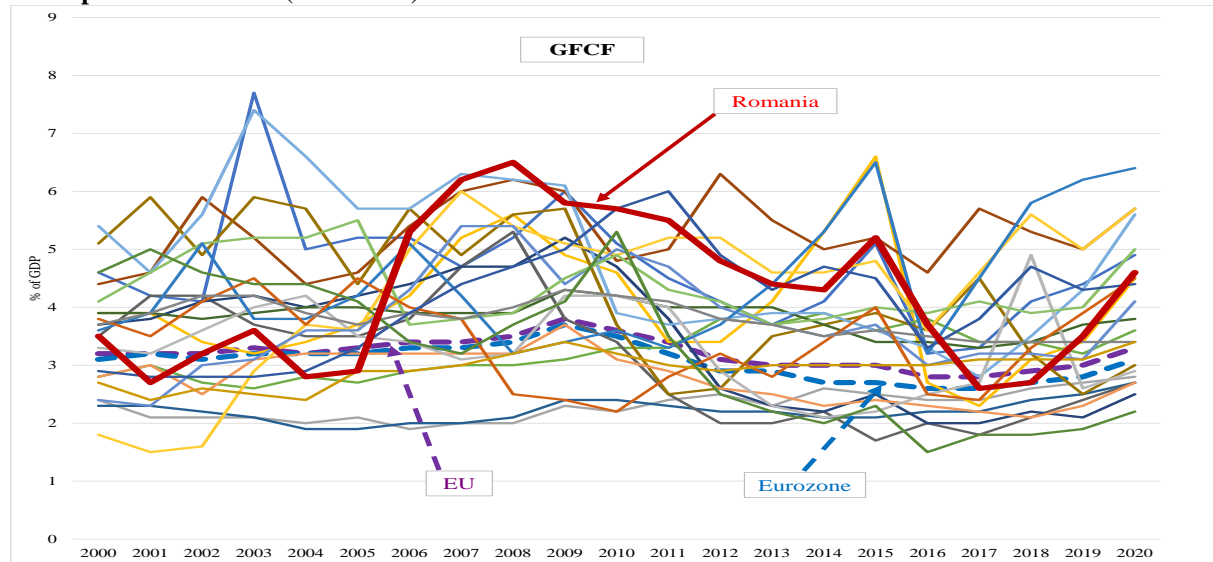
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Table2GFCF of the government sector according to ESA 2010 in the EU Member States in the period 2000-2020 (% of GDP)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2000-2010	2011-2020	2000-2020	
UE	3.2	3.2	3.2	3.3	3.2	3.3	3.4	3.4	3.5	3.8	3.6	3.4	3.1	3.0	3.0	3.0	2.8	2.8	2.9	3.0	3.3	3.4	3.0	3.2	
ZE	3.1	3.2	3.1	3.2	3.2	3.2	3.3	3.3	3.4	3.7	3.5	3.2	2.9	2.9	2.7	2.7	2.6	2.6	2.7	2.8	3.1	3.3	2.8	3.1	
BE	2.4	2.1	2.1	2.1	2.0	2.1	1.9	2.0	2.0	2.3	2.2	2.4	2.5	2.3	2.6	2.5	2.4	2.4	2.6	2.7	2.8	2.1	2.5	2.3	
BG	3.9	3.9	3.4	3.2	3.4	3.7	4.2	5.2	5.6	4.9	4.6	3.4	3.4	4.1	5.3	6.6	2.7	2.3	3.1	3.4	4.5	4.2	3.9	4.0	
CZ	4.6	4.2	4.1	7.7	5.0	5.2	5.2	4.7	5.2	6.0	5.1	4.5	4.1	3.7	4.1	5.1	3.2	3.3	4.1	4.4	4.9	5.2	4.1	4.7	
DK	2.8	3.0	2.7	2.6	2.8	2.7	2.9	3.0	3.0	3.1	3.3	3.3	3.8	3.7	3.9	3.6	3.8	3.4	3.4	3.2	3.6	2.9	3.6	3.2	
DE	2.3	2.3	2.2	2.1	1.9	1.9	2.0	2.0	2.1	2.4	2.4	2.3	2.2	2.2	2.1	2.1	2.2	2.2	2.4	2.5	2.7	2.1	2.3	2.2	
EE	4.4	4.6	5.9	5.2	4.4	4.6	5.4	6.0	6.2	6.0	4.8	5.0	6.3	5.5	5.0	5.2	4.6	5.7	5.3	5.0	5.7	5.2	5.3	5.3	
IE	3.5	4.2	4.2	3.7	3.5	3.5	3.8	4.7	5.3	3.8	3.4	2.5	2.0	2.0	2.2	1.7	2.0	1.8	2.1	2.4	2.7	4.0	2.1	3.1	
EL	5.1	5.9	4.9	5.9	5.7	4.4	5.7	4.9	5.6	5.7	3.7	2.5	2.6	3.5	3.7	3.9	3.6	4.5	3.2	2.5	3.0	5.2	3.3	4.3	
ES	3.7	3.8	4.1	4.2	4.0	4.2	4.4	4.7	4.7	5.2	4.7	3.8	2.6	2.3	2.2	2.5	2.0	2.0	2.2	2.1	2.5	4.3	2.4	3.4	
FR	3.9	3.9	3.8	3.9	4.0	4.0	3.9	3.9	3.9	4.3	4.2	4.0	4.0	4.0	3.7	3.4	3.4	3.3	3.4	3.7	3.8	4.0	3.7	3.8	
HR	5.4	4.6	5.6	7.4	6.6	5.7	5.7	6.3	6.2	6.1	3.9	3.7	3.8	3.9	3.9	3.6	3.3	2.8	3.5	4.3	5.6	5.8	3.8	4.9	
IT	2.8	3.0	2.5	3.1	3.2	3.2	3.2	3.2	3.2	3.7	3.1	2.9	2.6	2.5	2.3	2.4	2.3	2.2	2.1	2.3	2.7	3.1	2.4	2.8	
CY	3.3	3.2	3.6	4.0	4.2	3.5	3.4	3.1	3.2	4.2	4.2	4.0	2.9	2.3	2.1	2.2	2.5	2.7	4.9	2.6	2.9	3.6	2.9	3.3	
LV	1.8	1.5	1.6	2.9	3.7	3.6	5.0	6.0	5.4	5.1	4.9	5.2	5.2	4.6	4.6	4.8	3.6	4.6	5.6	5.0	5.7	3.8	4.9	4.3	
LT	2.4	2.3	3.0	3.1	3.6	3.6	4.3	5.4	5.4	4.4	5.0	4.7	4.0	3.7	3.5	3.7	3.0	3.2	3.2	3.1	4.1	3.9	3.6	3.7	
LU	4.1	4.6	5.1	5.2	5.5	5.5	3.7	3.8	3.9	4.5	4.9	4.3	4.1	3.7	3.8	4.0	3.9	4.1	3.9	4.0	5.0	4.6	4.1	4.3	
HU	3.6	3.9	5.1	3.8	3.8	4.2	5.1	4.2	3.2	3.4	3.6	3.3	3.7	4.4	5.3	6.5	3.2	4.5	5.8	6.2	6.4	4.0	4.9	4.4	
MT	3.8	3.5	4.1	4.5	3.7	4.5	4.0	3.8	2.5	2.4	2.2	2.8	3.2	2.8	3.4	4.0	2.5	2.4	3.3	3.9	4.5	3.5	3.3	3.4	
NL	3.7	3.9	4.2	4.2	3.9	3.7	3.9	3.8	4.0	4.3	4.2	4.1	3.8	3.7	3.5	3.6	3.5	3.4	3.4	3.4	3.4	4.0	3.6	3.8	
AT	2.7	2.4	2.6	2.5	2.4	2.9	2.9	3.0	3.2	3.4	3.2	3.0	2.9	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.4	2.8	3.1	2.9
PL	2.9	2.8	2.8	2.8	2.9	3.3	3.9	4.4	4.7	5.0	5.7	6.0	4.9	4.3	4.7	4.5	3.3	3.8	4.7	4.3	4.4	3.7	4.5	4.1	
PT	4.6	5.0	4.6	4.4	4.4	4.1	3.4	3.2	3.7	4.1	5.3	3.5	2.5	2.2	2.0	2.3	1.5	1.8	1.8	1.9	2.2	4.3	2.2	3.3	
RO	3.5	2.7	3.2	3.6	2.8	2.9	5.3	6.2	6.5	5.8	5.7	5.5	4.8	4.4	4.3	5.2	3.7	2.6	2.7	3.5	4.6	4.4	4.1	4.3	
SI	3.7	3.9	3.7	3.8	4.0	3.8	4.3	4.6	4.7	5.1	5.0	4.1	4.0	4.3	5.1	4.8	3.1	3.1	3.7	3.8	4.2	4.2	4.0	4.1	
SK	3.6	3.9	4.1	3.2	2.9	3.5	3.8	3.2	3.4	3.9	3.7	3.7	3.2	3.4	4.1	6.4	3.4	3.4	3.7	3.6	3.5	3.6	3.8	3.7	
FI	3.5	3.4	3.7	3.9	3.9	3.6	3.3	3.5	3.6	3.9	3.6	3.8	4.0	4.2	4.2	3.7	4.1	4.1	4.3	4.4	4.6	3.6	4.1	3.9	
SE	3.9	4.1	4.3	4.2	4.1	4.1	4.1	4.1	4.3	4.4	4.5	4.4	4.5	4.4	4.3	4.2	4.4	4.6	4.9	4.9	5.1	4.2	4.6	4.4	

Data source: Eurostat, online database

Graph2GFCF of the government sector according to ESA 2010 in the EU Member States in the period 2000-2020 (% of GDP)



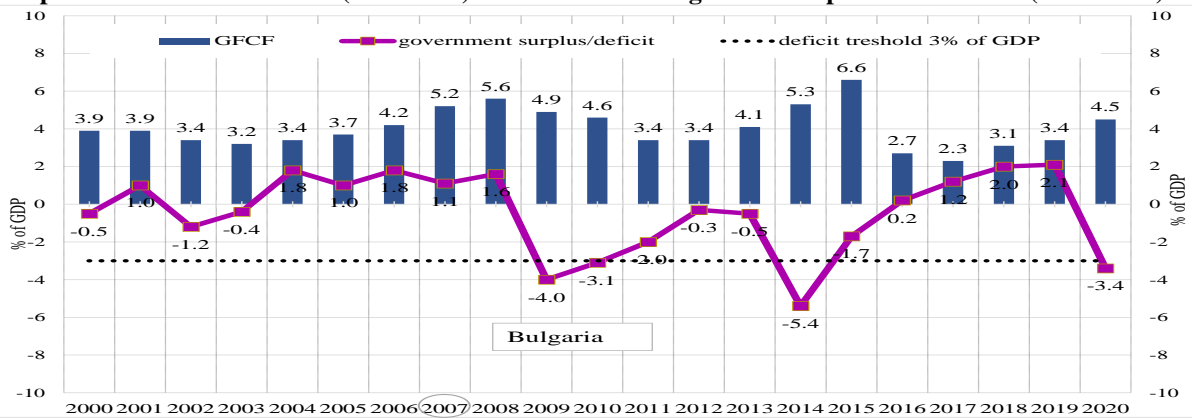
Data source: Eurostat, online database

The GFCF reported by EU Member States generally fluctuated between 2% of GDP and 6% of GDP over the period 2000-2020, with an average decrease in the level of GFCF relative to GDP in most of the EU Member States during the period under review. In EU Member States, the GFCF has fallen from an average of 3.9pp in the first 10 years to an average of 3.6pp in the next 10 years, overall over the last 20 years, the observed average of GFCF has been 3.7pp in percentage of GDP.

IV. SOME EXAMPLES FROM THE MEMBER STATES OF UE IN ORDER TO OBSERV THE CORRELATION BETWEEN THE INCREASE/DECREASE OF GOVERNMENT DEFICIT AND THE INCREASE/DECREASE OF GFCF IN THE PERIOD 2000-2020

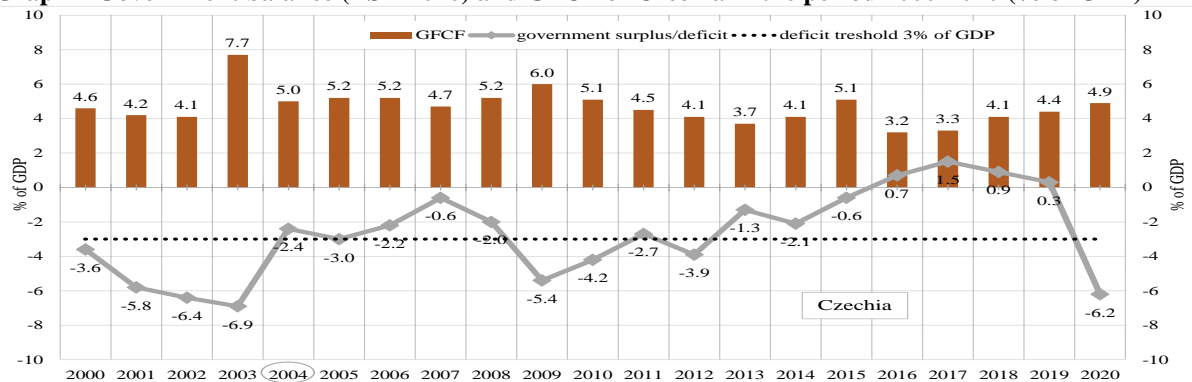
In most EU Member States there are fluctuations in the FBCF level in direct correlation with the deficit fluctuation, especially during the periods when the Member States were in the excessive deficit procedure.

Graph 3 Government balance (ESA 2010) and GFCF of Bulgaria in the period 2000-2020 (% of GDP)



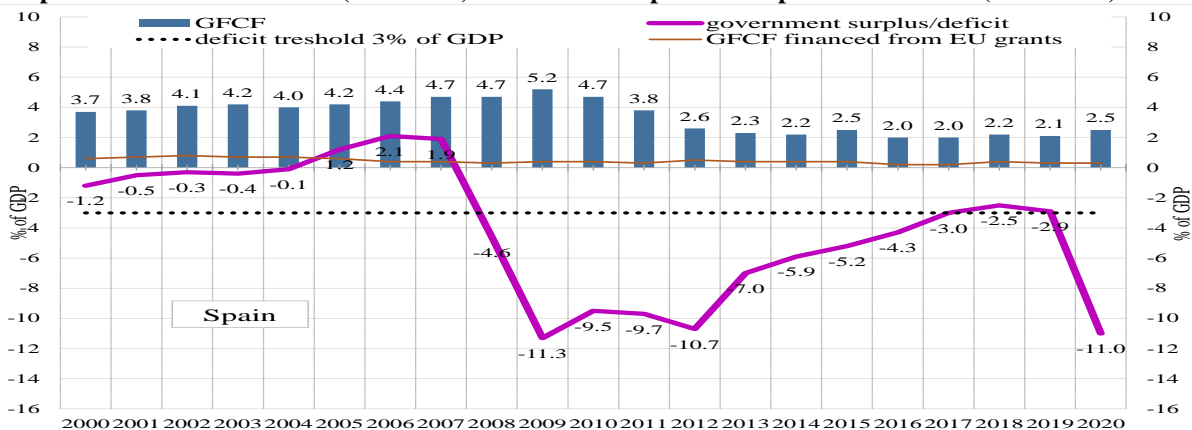
Data source: Eurostat, online database

Graph 4 Government balance (ESA 2010) and GFCF of Czechia in the period 2000-2020 (% of GDP)



Data source: Eurostat, online database

Graph 3 Government balance (ESA 2010) and GFCF of Spain in the period 2000-2020 (% of GDP)



Data source: Eurostat, online database

In 1992, when the Maastricht Treaty was signed and in 2005 when the Stability and Growth Pact was first updated, the possibility of introducing the "golden rule" as a fiscal criterion was discussed, but this was challenged due to the difficulties of separation and clear definition of the current expenditure and of the capital expenditure.

Milesi-Ferretti G. M. (2004) warns about the risk of "creative accounting" in the context of applying the "golden rule" for investments, because the state could try to hide current expenditures in capital expenditures.

Reuter (2020) argues that future generations do not participate in the current decisions on investment projects and proposes to prioritize current spending by adapting the "golden rule" to each category of spending or even by a golden rule applied to the structural deficit. But even if these rules have positive effects on the

economy, their application leads to overcoming the fiscal rules in force, therefore the author suggests developing the list of exceptions to the fiscal rules of the Stability and Growth Pact.

IV. PROPOSALS FOR GOVERNMENT DEFICIT

The novelty introduced in this paper is the redefinition of investment expenditures for the calculation of the government deficit and debt for the purpose of a new simplified Stability and Growth Pact. Namely, the model recalculates the general government deficit based on redefined capital expenditures taking into account other elements existing in the national accounts for the general government sector, such as the consumption of fixed capital (depreciation) instead of the grossfixed capital formation (as is the case currently). Thus, investment expenditures could be recorded over several years, closely related to the life of the non-financial asset for which those expenditures were incurred. The model proposed in the paper uses the consumption of fixed capital (CFC) from national accounts, which can be assimilated to the depreciation from the business accounting (private sector).

$B.9i$ = proposed government balance

$B.9i = B.9 + GFCF - CFC$

Table 3 Proposed government balance $B.9i$ ($B.9i = B.9 - GFCF + CFC$) in the EU Member States in the period 2000-2020 (% of GDP)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
UE	-0.5	-1.2	-2.0	-2.3	-2.0	-1.6	-0.5	0.4	-1.1	-5.0	-5.2	-3.5	-3.4	-2.8	-2.2	-1.7	-1.3	-0.7	-0.2	-0.2	-6.5
ZE	-0.6	-1.2	-2.0	-2.4	-2.2	-1.9	-0.7	0.2	-1.4	-5.2	-5.6	-3.8	-3.6	-3.0	-2.6	-2.0	-1.6	-1.0	-0.5	-0.5	-7.0
BE	0.3	0.3	0.1	-1.8	-0.2	-2.7	0.0	0.0	-1.3	-5.2	-4.1	-4.1	-4.0	-3.0	-2.8	-2.2	-2.3	-0.5	-0.4	-1.4	-9.0
BG	-0.7	1.2	-1.3	-0.4	2.4	2.1	3.4	3.7	4.6	-2.0	-1.5	-1.5	0.3	0.8	-2.8	2.1	0.2	0.7	2.4	2.9	-1.5
CZ	-4.3	-6.7	-7.3	-4.3	-2.3	-2.5	-1.6	-0.3	-1.3	-4.1	-3.8	-2.8	-4.4	-2.1	-2.4	0.2	-0.3	0.8	1.1	0.9	-5.4
DK	1.8	1.1	-0.3	-0.4	1.9	4.8	5.1	5.1	3.2	-2.8	-2.4	-1.8	-2.7	-0.4	2.1	-0.5	0.9	2.5	1.5	4.4	-0.1
DE	-1.5	-2.9	-3.9	-3.8	-3.5	-3.5	-1.8	0.2	-0.1	-3.1	-4.2	-0.8	0.0	-0.1	0.5	0.9	1.2	1.4	2.0	1.7	-4.0
EE	1.9	2.5	4.0	4.8	4.6	3.5	6.2	6.6	1.2	0.9	2.0	3.2	3.1	2.6	2.7	2.1	1.1	2.0	1.7	2.1	-2.3
IE	6.7	3.5	2.0	2.3	3.0	3.3	4.8	3.3	-3.5	-12.0	-30.6	-12.3	-8.1	-5.9	-3.0	-1.5	-0.1	0.2	0.9	1.6	-3.5
EL	-1.9	-2.5	-4.0	-4.8	-6.0	-4.8	-3.1	-4.7	-7.6	-12.7	-11.2	-11.9	-10.5	-13.9	-3.8	-5.8	0.0	1.4	0.4	0.0	-10.7
ES	0.4	1.3	1.8	1.8	1.8	3.3	4.4	4.5	-2.1	-8.5	-7.3	-8.6	-10.9	-7.5	-6.4	-5.3	-4.8	-3.4	-2.7	-3.2	-11.2
FR	-0.5	-0.6	-2.4	-3.2	-2.7	-2.5	-1.6	-1.8	-2.6	-6.3	-6.1	-4.6	-4.5	-3.6	-3.7	-3.6	-3.5	-3.0	-2.2	-2.7	-8.9
HR	0.4	0.5	0.6	1.2	-0.2	0.3	0.8	2.3	1.4	-2.3	-5.0	-6.6	-4.0	-3.9	-4.0	-2.1	0.3	1.6	1.8	2.7	-3.8
IT	-1.8	-2.4	-2.7	-2.4	-2.7	-3.3	-2.9	-0.6	-2.0	-4.2	-3.9	-3.6	-3.2	-3.4	-3.7	-3.1	-2.9	-3.0	-2.9	-2.1	-9.8
CY	-0.2	-0.2	-1.8	-3.3	-1.2	-0.4	0.7	4.6	2.2	-2.8	-2.6	-4.1	-5.4	-5.8	-9.2	-1.1	0.5	2.4	-0.8	1.9	-5.1
LV	-6.4	-5.2	-4.9	-3.1	-1.9	-1.1	0.2	1.2	-3.1	-8.3	-8.0	-3.5	-0.9	-1.0	-1.3	-1.0	-0.4	-0.2	0.9	0.8	-2.6
LT	-4.2	-4.4	-1.8	-1.0	-0.5	0.7	1.5	2.2	-0.2	-7.7	-4.8	-7.0	-2.0	-1.8	0.0	0.4	0.3	1.1	1.2	1.1	-5.8
LU	7.8	8.3	5.1	3.5	1.7	3.2	3.6	6.3	5.4	2.1	2.4	2.8	2.3	2.3	2.9	3.1	3.5	3.1	4.6	3.6	-1.8
HU	-3.7	-4.1	-7.4	-7.0	-6.2	-6.9	-7.5	-4.3	-4.1	-5.1	-4.5	-5.5	-2.3	-1.8	-1.0	1.1	-2.1	-1.4	0.2	0.6	-5.4
MT	-3.9	-4.9	-3.7	-6.9	-3.0	-0.7	-0.9	-0.7	-4.0	-3.3	-2.4	-2.0	-2.5	-1.8	-0.3	1.0	1.4	3.7	3.3	2.3	-7.9
NL	2.0	0.6	-0.8	-2.0	-1.0	0.2	0.9	0.6	1.1	-4.0	-4.3	-3.6	-3.5	-2.6	-2.1	-1.7	0.3	1.6	1.7	2.2	-4.1
AT	-2.0	-0.6	-1.1	-1.6	-4.7	-2.1	-2.1	-0.9	-0.8	-4.6	-3.9	-2.3	-2.0	-1.7	-2.3	-0.6	-1.0	-0.2	0.8	1.1	-8.3
PL	-3.7	-4.5	-4.6	-5.8	-4.6	-3.1	-2.1	0.1	-1.2	-4.6	-4.1	-1.3	-1.2	-2.3	-1.3	-0.5	-1.5	0.0	2.2	1.3	-5.0
PT	-0.8	-2.1	-1.0	-3.7	-4.2	-4.5	-3.3	-2.2	-2.6	-8.5	-8.9	-7.1	-6.8	-5.8	-8.3	-5.0	-3.1	-3.9	-1.2	-0.6	-6.3
RO	-1.9	-2.0	0.2	-0.1	-0.1	0.3	1.5	2.0	-0.4	-5.0	-3.2	-1.9	-0.8	0.5	1.1	2.6	-0.9	-2.0	-2.3	-2.9	-6.6
SI	-2.1	-2.8	-0.8	-0.9	-0.1	0.3	0.9	2.5	1.2	-3.1	-3.2	-5.2	-2.9	-13.2	-3.2	-0.8	-1.6	0.4	1.8	1.7	-6.9
SK	-14.6	-8.6	-9.1	-4.9	-3.6	-3.2	-3.3	-2.1	-2.1	-7.5	-6.9	-3.7	-4.3	-2.7	-2.2	0.5	-2.5	-0.8	-0.4	-0.8	-5.9
FI	7.4	5.4	4.8	3.3	3.1	3.3	4.3	5.6	4.7	-1.9	-2.2	-0.5	-1.6	-1.8	-2.4	-2.2	-1.1	0.0	0.0	0.0	-4.4
SE	3.8	2.2	-0.4	-0.3	1.2	2.7	3.2	4.3	3.0	0.3	1.2	1.0	0.1	-0.3	-0.5	1.0	2.3	2.8	2.5	2.3	-1.3

Data source: own calculations

Reporting on both CFC and FBCF data has become mandatory for the EU Member States through the ESA Regulation 2010 approved in 2013 which includes both the national accounts methodology and the data transmission program to Eurostat. As of 2018, all Member States have the obligation to report national accounts CFC data in various details. Data series generally covers the period 1995-present.

Therefore, the solution proposed in this paper can be implemented based on the available data. GFCF data for the general government sector are already included in the EDP notification tables on government deficit and debt transmitted in the context of the excessive deficit procedure to Eurostat by EU Member States twice a year (March and September).

Consequently, the model has direct practical applicability under the conditions of a revised Stability and Growth Pact.

V. PROPOSALS FOR GOVERNMENT DEBT

In terms of debt, EU Member States will continue to report gross government debt (Maastricht debt). As the government deficit and debt are correlated in national accounts, the model proposes to recalculate the reference threshold of government debt for each EU Member State in the context of the Stability and Growth Pact.

The proposed novelty is the assessment of the government debt in the context of an updated SGP against a modified debt threshold that takes into account the annual increase in investment in the context of the simplified investment deficit, respectively the 60% threshold from Maastricht plus the difference, in percentage points of GDP, between the gross fixed capital formation and the consumption of fixed capital (FBCF minus CCF) related to the general government sector.

Table 4 The increase proposed to the Maastricht debt threshold (GFCF-CFC) in pp of GDP for assessing the annual government debt of the EU Member States in the period 2000-2020 in the context of a new government deficit (B.9i)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
UE	0.7	0.7	0.7	0.8	0.7	0.7	0.9	0.9	0.9	1.0	0.8	0.6	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.3	0.4
ZE	0.7	0.8	0.7	0.7	0.7	0.7	0.8	0.8	0.8	1.0	0.7	0.4	0.1	0.0	-0.1	0.0	-0.1	-0.1	0.0	0.1	0.2
BE	0.4	0.1	0.1	0.1	0.0	0.0	-0.2	-0.1	-0.2	0.2	0.0	0.2	0.3	0.1	0.3	0.2	0.1	-0.2	0.4	0.5	0.4
BG	-0.2	0.2	-0.1	0.0	0.6	1.1	1.6	2.6	3.0	2.0	1.6	0.5	0.6	1.3	2.6	3.8	0.0	-0.5	0.4	0.8	1.9
CZ	-0.7	-0.9	-0.9	2.6	0.1	0.5	0.6	0.3	0.7	1.3	0.4	-0.1	-0.5	-0.8	-0.3	0.8	-1.0	-0.7	0.2	0.6	0.8
DK	-0.1	0.0	-0.3	-0.3	-0.2	-0.2	0.1	0.1	0.0	0.0	0.3	0.3	0.8	0.8	1.0	0.8	1.0	0.7	0.8	0.6	1.0
DE	0.1	0.1	0.0	-0.1	-0.2	-0.2	-0.1	-0.1	0.0	0.1	0.2	0.1	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.2	0.2	0.2
EE	2.0	2.3	3.6	3.0	2.2	2.4	3.3	3.9	3.8	3.1	1.8	2.1	3.4	2.4	2.0	2.0	1.5	2.7	2.3	2.0	2.6
IE	1.8	2.5	2.5	2.0	1.7	1.7	2.0	3.0	3.5	1.9	1.5	0.7	0.2	0.3	0.5	0.4	0.6	0.5	0.8	1.1	1.5
EL	2.2	3.0	2.0	3.0	2.8	1.4	2.8	2.0	2.6	2.4	0.1	-1.4	-1.4	-0.5	-0.2	0.1	-0.2	0.8	-0.5	-1.1	-1.0
ES	1.6	1.8	2.1	2.2	1.9	2.1	2.3	2.6	2.5	2.8	2.2	1.1	-0.2	-0.5	-0.5	-0.1	-0.5	-0.4	-0.2	-0.3	-0.2
FR	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.7	0.9	0.8	0.6	0.5	0.5	0.2	0.0	0.1	0.0	0.1	0.4	0.3
HR	3.4	2.7	3.9	5.7	4.9	3.9	3.9	4.5	4.3	3.9	1.5	1.4	1.5	1.7	1.5	1.4	1.2	0.8	1.6	2.4	3.6
IT	0.6	0.8	0.2	0.8	0.8	0.8	0.7	0.7	0.6	0.9	0.3	0.0	-0.3	-0.5	-0.7	-0.5	-0.5	-0.6	-0.7	-0.5	-0.3
CY	2.0	1.9	2.3	2.6	2.5	1.8	1.7	1.4	1.3	2.6	2.1	1.6	0.4	-0.2	-0.4	-0.2	0.2	0.5	2.7	0.4	0.6
LV	-3.7	-3.3	-2.6	-1.5	-0.7	-0.6	0.7	1.8	1.2	1.3	0.6	0.6	0.5	0.2	0.3	0.4	-0.6	0.6	1.7	1.4	1.9
LT	-1.0	-0.9	0.1	0.3	0.9	1.0	1.8	3.0	2.9	1.4	2.1	1.9	1.1	0.8	0.6	0.7	0.1	0.6	0.6	0.6	1.6
LU	2.3	2.7	3.1	3.2	3.1	3.4	1.7	1.9	1.9	2.3	2.7	2.1	1.8	1.4	1.5	1.7	1.6	1.8	1.6	1.2	2.3
HU	-0.7	-0.1	1.4	0.2	0.4	0.9	1.8	0.8	-0.3	-0.3	-0.1	-0.3	0.0	0.8	1.8	3.1	-0.3	1.0	2.3	2.7	2.7
MT	1.6	1.2	1.7	2.1	1.3	2.1	1.6	1.4	0.1	-0.1	-0.1	0.4	0.9	0.5	1.3	2.0	0.5	0.5	1.4	1.9	2.2
NL	0.8	1.0	1.2	1.1	0.8	0.7	0.9	0.8	1.0	1.2	1.0	0.9	0.5	0.4	0.2	0.4	0.3	0.3	0.3	0.4	0.2
AT	0.4	0.1	0.3	0.2	0.1	0.4	0.4	0.5	0.7	0.7	0.5	0.3	0.2	0.3	0.4	0.4	0.5	0.6	0.6	0.5	0.6
PL	0.3	0.2	0.2	0.2	0.4	0.8	1.4	2.0	2.4	2.7	3.3	3.7	2.6	1.9	2.3	2.1	0.9	1.5	2.4	2.0	2.0
PT	2.4	2.7	2.3	2.0	2.0	1.6	0.9	0.7	1.1	1.4	2.5	0.6	-0.6	-0.7	-0.9	-0.6	-1.2	-0.9	-0.9	-0.7	-0.6
RO	2.7	1.5	2.1	1.3	1.0	1.1	3.6	4.7	5.0	4.1	3.7	3.5	2.9	2.6	2.3	3.2	1.7	0.6	0.6	1.5	2.6
SI	1.5	1.7	1.6	1.7	1.8	1.6	2.1	2.5	2.6	2.7	2.4	1.4	1.1	1.4	2.3	2.0	0.3	0.5	1.1	1.3	1.5
SK	-2.0	-1.4	-0.9	-1.8	-1.3	-0.3	0.3	0.0	0.4	0.6	0.6	0.6	0.1	0.2	0.9	3.2	0.1	0.2	0.6	0.5	0.3
FI	0.5	0.4	0.7	0.9	0.9	0.6	0.3	0.5	0.5	0.6	0.3	0.5	0.6	0.7	0.6	0.2	0.6	0.7	0.9	0.9	1.0
SE	0.7	0.8	1.0	0.9	0.9	0.9	1.0	1.0	1.1	1.0	1.2	1.2	1.1	1.1	1.0	1.0	1.3	1.4	1.7	1.7	1.8

Data source: own calculations

The results obtained on the basis of the proposed model, using data for the period 2000-2020 for all Member States, show that there is room for more investment expenditure in line with the government deficit and Maastricht debt targets, thus opening up the possibility of implementing new investments in the future.

VI. CONCLUSIONS

The disadvantage of using B.9 as a budget target stems from the major negative impact of investment spending on the budget balance, even if by definition, investments will be able to generate revenue in the future.

In order to reduce the discrepancies between the fiscal rules and the ESA 2010 methodology, the novelty introduced in this paper is the proposal to redefine the formulas for calculating the government deficit and debt in relation to investment expenditure. On one hand it could simplify the fiscal rules and on the other hand it leads to economic progress supported by public investment projects.

The implementation of the model at European level would involve the updating the Stability and Growth Pact as well as the introduction at European Union level of a new investment surveillance mechanism similar to the excessive deficit procedure, suggestively called "deficient investments procedure". The rules on monitoring and prioritizing the investments and their efficiency rates represent future directions for research.

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