ASSESSING SOME FISCAL INDICATORS IN THE EUROPEAN UNION IN THE PERIOD 2000-2021

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Abstract: COVID-19 has posed many problems to the world's economies beyond its dramatic medical effects. The beginning of 2022, under the auspices of the war in Ukraine, brings and will continue to bring additional challenges for the world's economies and especially for European economies. In this context, marked by high fears and uncertainties, worldwide, fiscal policy strives to control expanding public debt but also the level of taxes and duties, boost revenue and control spending. Therefore, this article highlights the study of some basic fiscal indicators at European Union level for the period 2000-2021. The indicators followed are overall balance, primary balance, cyclically adjusted primary balance, automatic stabilizers, fiscal stance, fiscal impulse and fiscal multiplier (more exactly impact multiplier of expenses). The results show that there are many fiscal and budgetary issues to be addressed by expansionary or contractionary European Union policy measures, and that the pandemic crisis and the war crisis could make matters worse in the future.
Keywords: cyclical adjusted primary balance, fiscal stance, fiscal impulse, automatic stabilisers, EU.
JEL Classification: H30, H61, H62.

1. Introduction

Macroeconomic stability and sustainability seem more than ever to guide the world's economies, and fiscal policy through its short-term impact may or may not contribute to these goals. Therefore, measuring the fiscal stance, and other important indicators, can outline whether the link between fiscality and the economy is mutually reinforcing or vice versa, taxation can put a brake, either directly or indirectly, on economic development. Therefore, the role of fiscal policy is to help the economy stay close to its potential growth, so governments must constantly strive to use, in particular, counter-cyclical fiscal policies. Specifically, in good times, fiscal policy should contract, and in less favorable times, fiscal policy should allow for some relaxation or expansion. Managing this process is not easy, because poorly developed countercyclical fiscal policies can themselves trigger a sudden transition from boom to recession and not what it was intendded at the biginning, more exactly a process of counterbalancing and keeping economic growth close to the potential. Of course, the overview should not be limited to the short term, but also should be extended to the medium and long term, but for this article, we can consider sufficient a diagnostic analysis of the sustainability of fiscal policy on short-term, following, in future studies, an analysis of the sustainability of public debt in the current complicated European context.

Therefore, this article analyzes, for the period 2000-2021, for euro area countries, for non-euro area countries and for the EU as a whole, a series of indicators such as: overall balance, primary balance, cyclically adjusted primary balance, fiscal stance, fiscal impulse automatic stabilizers and fiscal multiplier, which can tell us whether fiscal policy works or not in the direction of supporting the economy of these areas.

2. Description of the problem

Fiscal policy is not the only macroeconomic policy that can help us understand the connection with macroeconomic developments and the business cycle in general, therefore monetary policy also has an important contribution, especially for inflation, exchange rate and external balance. One of the limitations of basic fiscal indicators (overall balance and primary balance) is that we cannot say exactly whether the positive developments are strictly due either to the evolution of the indicators, or of the shock of comodity or housing

prices, or the automatic stabilisers or indeed, the governments have taken measures (e.g. rules, adjusting tax rates, discretionary spending etc.) by which fiscal policy has led to these improvements.

But if we focus strictly on the short term and especially on the contribution of fiscal policy to shaping aggregate demand, we can see that in addition to indicators such as overall balance and primary balance, we should see the effects of fiscality on the business cycle more precisely the evolution of cyclically-adjusted fiscal balance. This element is analyzed together with two other indicators: the fiscal state and the fiscal impulse and then we will be able to make important statements about the adequacy of the fiscal policy to the evolutions of the economic cycle at non-euro area, euro area and EU level, and what fiscal policy should do in the sense of expanding or contracting.

3. Literature review

Numerous studies deal with: the evolution of fiscal policy, more and more adequate ways of estimating and measuring fiscal indicators, analyzes between discretionary and non-discretionary measures, implicitly indicators to facilitate this decomposition, the connection of fiscal evolutions with the economic cycle, with globalization, with stabilization policies, including the relationship between fiscal policy measure with economic crises, etc. For example, when is analyzed the relationship between fiscal policy and the business cycle, the expansionary or contractionary nature of fiscal policy changes is analyzed using estimates of the real-time and ex-post business cycle position based on the production function approach or on some filtering techniques (Cimadomo, 2008; Beetsma and Giuliodori, 2008), but these methods suffers from the inherent uncertainty related to the business cycle position in real time (Barriosand and Fargnoli, 2010). The emphasis on countercyclicality is generally very important, countercyclical fiscal policy (stimulating aggregate demand during downturns and withdrawing demand during upturns) can potentially play a role in responding to normal variations but mostly to larger aggregate demand shocks. Thus, through the impact of revenues and government spending on income-sensitive components of aggregate demand, fiscal policy contributes to broader-based stabilization process more than other macroeconomic levers (e.g. monetary policies) (Daniel et. al., 2006).

When considering the relationship between discretioanry measures and financial crisis, Barriosand and Fargnoli (2010) found that although on average discretionary measures are relatively low compared to tax revenues levels, their incidence on tax elasticities can be very large and can lead to significant departure between gross and net tax elasticities, which in turn affect the view on what really is the fiscal stance. Also, they found that the discretionary measures taken by the EU countries in the run-up to the 2008/2009 global financial crisis were often pro-cyclical thus, once the full effects of the crisis on tax revenues unfolded, countries often found themselves in the most difficult budgetary situations.

Also, in the study of Giorno, Richardson, Roseveare and van den Noord (1995), are analyzed a number of elements concenrning the estimation of potential output, output gaps and structural budget balances, mentioning that changes in the structural deficit provide also some indication of the degree of stimulus or restraint that the government provides to demand over and above that given by the automatic stabilizers and also a measure of the degree of fiscal consolidation. The resuts of their study, marking a ten-year analysis until 1996, emphasizes that for a number of world countries (15 of them being from the EU area) estimated structural deficits have been relatively stable over the past decade, fluctuating by no more than one or two per cent of GDP. In some cases, notably for Belgium, Denmark, Ireland, Portugal and Japan, estimated structural deficits fell steadily

through the 1980s, while for others (especially France, Greece, Norway, Finland and Spain) there is some trend deterioration over the analyzed period.

If we take into account the possible future evolutions, taking into account IMF Fiscal Monitor from 2021 informations, although fiscal policy remains supportive, with 2021 deficits falling by about 2 percentage points of GDP, on average, however, the deficits are still well above prepandemic levels, especially in advanced economies, beeing projected to decrease further by almost 3 percentage points in 2022 and return to their prepandemic levels by 2026. But in the context of the COVID-19 pandemic doubled by the ruthless effects of the war in Ukraine, we can talk about prolonging budget deficits beyond current expectations, amid high costs of managing migrants, high costs of reducing human suffering and loss of human capital, high costs related to security and defense and also costs related to the administration of efficient policies for energy and food security. All of this will be translated in the near future in sustained costs for a stronger public sector, allowing the possibility of some fiscal relaxation in difficult moments (Ghosh and al., 2002; Heller, 2005) and funding will need to be supported by both public deficits and higher public debt at European level, and especialy of EU authorities.

4. Methodology and data source

The article is based on the IMF's methodology for making a diagnosis of fiscal policy. The analysis period is 2000-2021, and for the fiscal impulse the results refer to the period 2001-2021, and the main data source is Ameco. Together with Ameco, we used Eurostat and World Bank data to complete the information. The breakdown was made into groups of countries: non-euro area countries, i.e. those still outside the euro area, and euro area countries and EU average as a whole, with all 27 states.

The formulas are:

Overall Balnce (OB) = Revenue of the general government (R) - Expenses of the general government (G);   (1)

Primary Balance (PB) = Overall Balance + Interest spending;   (2)

Cyclically Adjusted Primary Balance (CAPB) = Cyclically adjusted revenue (R^{CA}) - Cyclically adjusted primary expenditures (G^{CA});   (3)

where: $R^{CA}=R*(Ypotential/Y)^{\varepsilon R,Y}$ and $G^{CA}=G*(Ypotential/Y)^{\varepsilon G,Y}$; $\varepsilon^{R,Y}$ is revenue elasticity and are $\varepsilon^{G,Y}$ expenditure elasticity; Y is actual GDP and Ypotential is potential GDP;

Output gap=(Y-Ypotential)/Ypotential;   (4)

Cyclical factors (or automatic stabilizers) (AS)= Primary Balance (PB) - Cyclically Adjusted Primary Balance (CAPB);   (5)

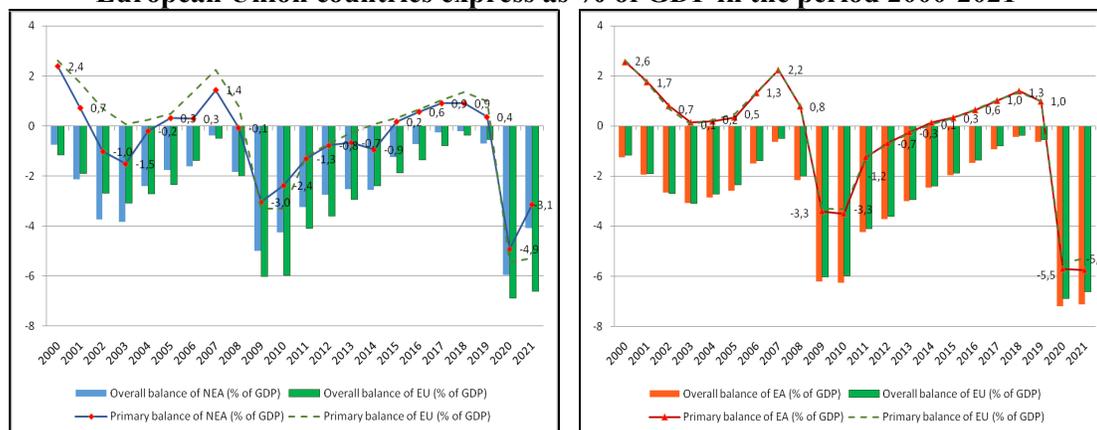Fiscal stance (FS) = - CAPB;   (6)

Fiscal impulse (FI) = ΔFS; and   (7)

Fiscal multiplier (selected only for expences) = ΔY / ΔG, where: $\Delta Y= Y_t-Y_{t-1}$; $\Delta G= G_t-G_{t-1}$;   (8)

The elasticity of the revenues is considered for income to be 1, and for expenses to be very very low and negative, ie: minus 0.05. The elasticity values, although calculated effectively due to the large variability, were not preferred but a relatively average value was preferred, proposed by the IMF methodology. Hence, we consider that the revenues are pro-cyclical and expenditure are usually counter-cyclical. The values of elasticities (both for revenues and expenditures) were considered constant throughout the period (2000-2021) and were proposed according to the IMF methodology, being relatively consistent with the values stated in the economic reports and profile literature (Girouard and André, 2005; Bruce et al., 2006; Bouthevillain *et al.*, 2001; Wolswijk, G., 2009; Price, Dang and Guillemette, 2014; Belinga et al., 2014; Mourre and Princen, 2015; Köster and Priesmeier, 2017 etc.).

5. Results

Overall balance describes the difference between the government's overall revenue from taxes, fees, etc. and government expenditures, including capital spending and government loans. That is why the overall balance is considered somewhat similar to net lending borrowing, especially if the proceeds from privatization or redemption are limited. So, it will be calculated the overall balance as the difference between primary income and primary expenses, and it will be calculated the primary balance as the difference between income and expenses (the overall balance), plus interest expenses related to the debts incurred, the results being expressed as percent of GDP. (see Figure 1). A large gap between the overall balance and the primary balance means a large interest expense, while a small difference means a more sustainable long-term debt policy with less burdensome interest rates.

Figure no. 1. Overall balance and primary balance of Non-euro area, euro area and European Union countries express as % of GDP in the period 2000-2021
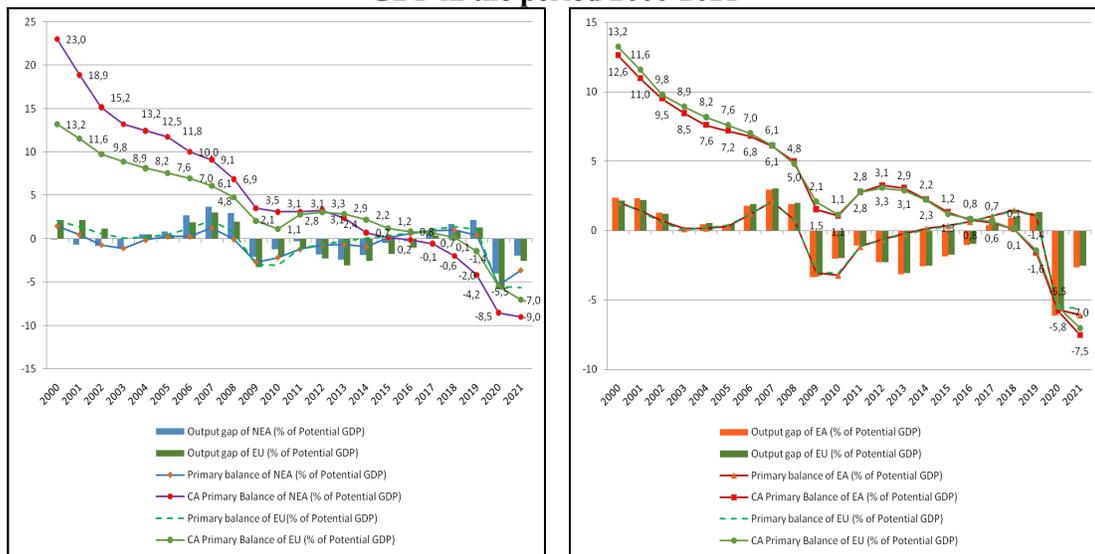

Source: Ameco data; author's processing. Notations: NEA - Non-euro area countries; EA - Euro area countries; EU- European Union countries

Thus we notice that a very burdensome interest rate was recorded at the beginning of the analysis period (2000), gradually decreasing in time, for both non-euro countries (NEA), for euro area (EA) and EU 27 countries as a whole (EU), which suggests a better debt management and relatively more favorable market conditions. Interest expenditures during the analysis period (2000-2021) recorded a average of 3.1% of GDP for NEA countries, 3.8% for EA countries and 3.8% for the EU countries. The moments of financial crisis or tensions are marked by collapses for both primary balance and overall balance for NEA, EA and EU (more precisely the years 2003-2004, 2009-2010, 2020-2021). If we analyze comparatively the evolution of the overall balance between NEA and EU and EA and EU, it is observed that in the years 2001-2003, 2006, 2014, 2019, overall balance of NEA was higher than in the EU, and in the years 2000-2001, 2004-2021 for the euro area, overall balance was higher than in the EU, being a driver for evolution at European level. This suggests that eurozone countries need to pay more attention to public spending management, but also that both automatic stabilizers and public discretionary policies may be more strongly activated, especially in times of crisis by the governments of this group of countries.

When comparing the output gap with the evolution of primary balnce, we we can see that the recession of 2009 and the one of 2020 was marked more strongly by the collapse of the primary balance, expecially for the non-euro area countries (NEA), and the periods

of economic recovery (2004-2008 and 2017-2019, for NEA) were not followed by the same measure of the recovery of the primary balance suggesting some discretionary expansion of the fiscal policy. Also, let us remain that a negative output gap suggests that the regions chosen for analysis are in recession, so we notice that for NEA countries the recession periods are 2000-2003, 2009-2016, 2020-2021 and the expansion periods are only 2004-2008, 2017-2019. We notice a dramatic and worrying aspect that from a period of 22 years, 14 years clearly in recession for NEA countries. Thus, over 60% of the analysis period was in recession for NEA, compared to the euro area countries where only a 45% of the analysis period was recorded in recession (more exactly the periods 2010-2017 and 2020-2021).

Figure no. 2. Output gap, primary balance and cyclically-adjusted primary balance of Non-euro area, euro area and European Union countries express as % of Potential GDP in the period 2000-2021
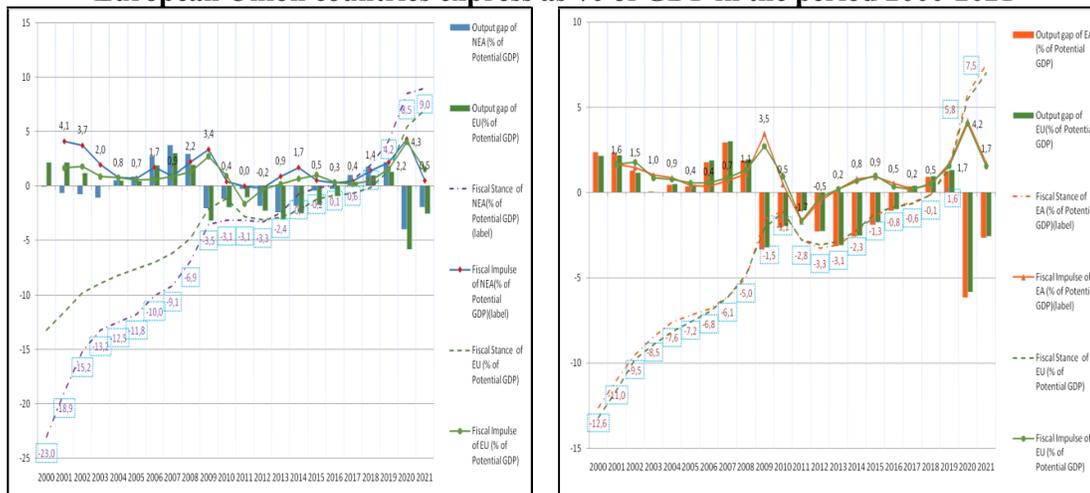

Source: Ameco data; author's processing. Notations: NEA - Non-euro area countries; EA - Euro area countries; EU- European Union countries; CA Primary Balance - Cyclically adjusted primary balance

If we compare the primary balance with the cyclically-adjusted primary balance, we see that for NEA countries, the current balance exceeds the cyclical one, which indicates theoretically that the period of the closeness of the economy with the potential is only the period 2016-2021 (the rest period seems mostly in the recession), while for EA countries this period is 2017-2021, and for EU the same period is 2017-2019 and the year 2021. Thus, the boom period is basically 2016/2017-2019, and the recession 2020-2021 makes fiscal situation looking worse than it actually was because of the sudden and deep collapse of the economy.

If we refer to fiscal stance and fiscal impulse (see Figure no.3), we observe a relatively oscillating evolution for the fiscal impulse and a negative evolution of fiscal stance until 2016, followed by a positive evolution in growth. Fiscal stance indicates the connection between taxation and domestic demand. Thus, a positive value of fiscal stance means that the cyclically-adjusted primary balance is negative, so we are talking about a deficit and an expansionary fiscal policy or an increase in spending over revenues, so a boost in aggregate demand. On the contrary, a negative fiscal stance means that the cyclically-adjusted primary balance is positive, so it is a surplus, so a contractionary fiscal policy, and therefore a mechanism to restrict aggregate demand through restrictive

government conduct concerned with accumulating revenue above the expenditure level. The fiscal impulse shows us the sensible variation, from one year to another, of the fiscal state. A positive fiscal impulse shows us that the fiscal policy becomes more and more expansionist, and a negative fiscal impulse shows us a fiscal policy that becomes rather contractionary.
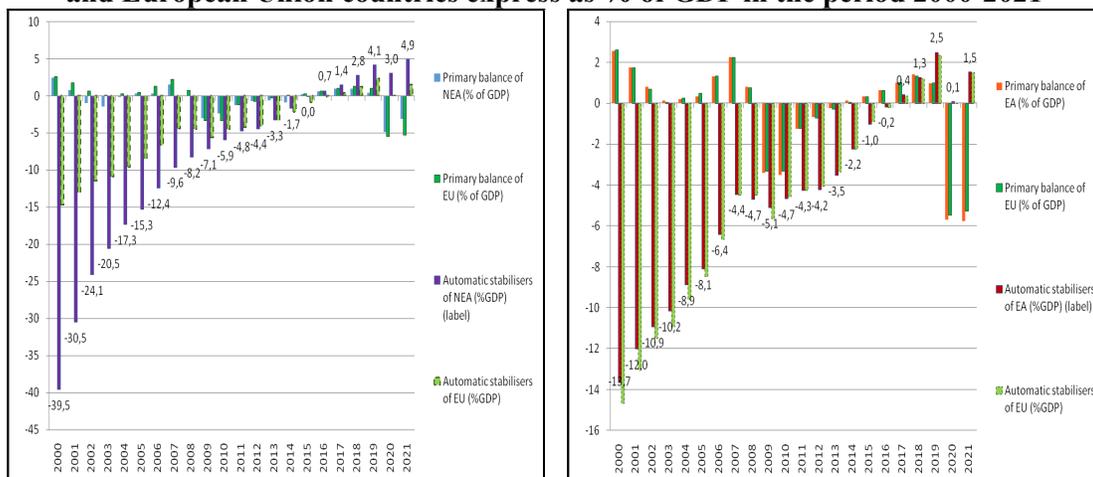
Figure no. 3. Output gap, fiscal stance and fiscal impulse of Non-euro area and European Union countries express as % of GDP in the period 2000-2021

Source: Ameco data; author's processing. Notations: NEA - Non-euro area countries; EA - Euro area countries; EU- European Union countries

Therefore, figure no.3 indicates that the fiscal impulse for the NEA countries was predominantly expansionist, only the year 2012 marked a rather contractionary moment, which is valid both for EA (contraction taking place in 2011) and for the EU (contraction taking place during 2011-2012). However, fiscal stance indicates a predominantly contractionary fiscal policy until 2016 for NEA countries, and until 2019 for EA and EU countries. The COVID-19 crisis has somewhat changed the trend, starting with 2020, marking the need for a relaxation of fiscal rules but especially for national and European fiscal stimulus programs, the effects of which have proved extremely beneficial for the economy in the context of the imposed restrictions. Figure 4 summarizes the previous information as well, but now from the perspective of cyclic factors or automatic stabilizers.

Figure no. 4. Primary balance and automatic stabilizers of Non-euro area, euro area and European Union countries express as % of GDP in the period 2000-2021
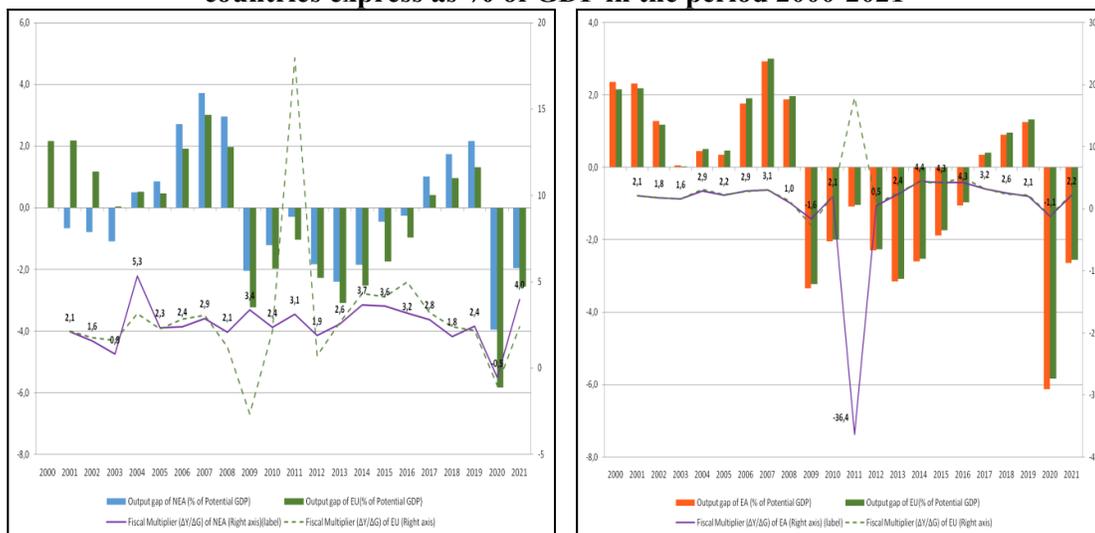

Source: Ameco data; author's processing. Notations: NEA - Non-euro area countries; EA - Euro area countries; EU- European Union countries

Thus, for the NEA countries we notice that they decrease, in value, in the period 2000-2014, being also negative in this period, and from the period 2015-2021 they start to have a positive and increasing evolution. The same is true for EA, automatic stabilizers decrease until 2016, and then become positive and increase in 2017-2021. The years 2000-2021 mark a relatively corresponding increase in the value of automatic stabilizers, suggesting a relatively good reaction of the economy to the non-economic crisis, but with considerable economic effects, triggered by the COVID-19 pandemic.

To see the effect of fiscal conduct (expansion or contraction) on production, it will be calculated the fiscal multiplier. So, in the Figure no.5 we can see the evolution of the fiscal multiplier, referring here strictly to the impact expense multiplier, and we notice that for the NEA countries the evolution is relatively volatile, although the oscillation is relatively balanced, except for the year 2020 for NEA countries, and 2009, 2011 and 2020 for EA countries and 2009 and 2020 for EU countries. The year 2011 marks a sharp collapse in the fiscal multiplier of spending for EA countries, which shows that the sovereign debt crisis has left its damaging mark, even stronger than the crisis of 2009 and 2020 on the evolution of output.

Figure no. 5. Output gap and fiscal multiplier of Non-euro area and European Union countries express as % of GDP in the period 2000-2021

Source: Ameco data; author's processing. Notations: NEA - Non-euro area countries; EA - Euro area countries; EU- European Union countries

Therefore, the article highlights a number of elements of European taxation from 2000-2021, analyzing a number of basic fiscal indicators for the diagnosis of fiscal policy. However, a number of questions remain regarding how best to bring growth to potential growth. In this sense, we can still ask ourselves how much should be and how should react the fiscal stance, the fiscal impulse, the fiscal multiplier and the cyclically-adjusted primary balance etc. These questions are even more pronounced in the context of the fact that the fiscal policy has an natural delayed impact in time on economic output, being difficult to establish, with certainty, the optimal moment of action. In addition, the fact that fiscal policy directly and indirectly influences other macroeconomic indicators related to consumption, investment and net export, public debt, employment, etc. it can make us answer with difficulty regarding the optimal levels of the indicators pursued and especially, what are the measures that can bring us almost certainly in the proximity of the potential output. The answers are even more difficult to build in the context in which, lately, the crises have followed a pattern of a very dense frequency in Europe and especially in the EU. Thus, they have an extremely varied and complex form, starting from an economic crisis, continued with a debt crisis, then with a pandemic crisis and at this moment augmented by a war crisis on its borders and probably with a food and energy crisis difficult to fight, and especially difficult to be solved adequately by fiscal policies.

6. Conclusions
The crises that have followed one another with astonishing rapidity lately, especially in the last 10 years, put us in front of the fact of asking ourselves what is the capacity of public policies to face them. Thus, the article analyzes a series of basic indicators of a fiscal diagnosis in the EU regarding the assurance of fiscal sustainability, especially in the short term. The analysis period is 2000-2021, and the methodology, although relatively simplistic, is that used by the International Monetary Fund. Therefore, the results mark that:
- The gap between the overall balance and the primary balance has narrowed over time, which also demonstrates an improvement in market conditions in the EU, but also a

more adequate public policy on interest rate management both in non-euro area countries and euro area member states,

- During the analysis period, the collapse of the basic fiscal indicators (overall balance and primary balance) are sudden, and the returns, cumbersome and gradual, and the main driver of shocks is felt especially in the euro area, which is not surprising, especially since it is almost three times the size of the non-euro area (only seven countries),

- For Non-Euro Area (NEA) countries the recession periods are 2000-2003, 2009-2016, 2020-2021 and the expansion periods are only 2004-2008, 2017-2019, so from a period of 22 years, 14 years clearly in recession, comparatively more time than in euro area countries; this may also indicate that the macroeconomic policies of this area are less efficient in bringing the economy to its potential level quickly and efficiently,

- For NEA countries, the current balance exceeds the cyclical one, which indicates theoretically that the period of the closeness of the economy with the potential is only starting in 2016 and 2017 for EA countries, continuing until the 2020-2021 crisis, when fiscal situation was looking worse than it actually was because of the recession,

- The fiscal impulse for the NEA countries was predominantly expansionist, only the year 2012 marked a rather contractionary moment, which is valid both for EA (contraction taking place in 2011) and for the EU (contraction taking place during 2011-2012). However, fiscal stance indicates a predominantly contractionary fiscal policy until 2016 for NEA countries, and until 2019 for EA and EU countries. As natural, the COVID-19 crisis has somewhat changed the tendency, for the period 2020-2021,

- Considering automatic stabilizers, we can see a decrease in value in the period 2000-2014 for the NEA countries, and in the period 2000-2016 for EA countries, being also negative in this period, and from the period 2015(2017 for EA countries) until 2021 they had an increasing positive evolution; the year 2021 mark a relatively corresponding increase in the value of automatic stabilizers, for both NEA and EA countries,

-The fiscal multiplier performed relatively well during the 2000-2021 analysis period in both NEA and EA countries, but marked, as expected, a deterioration in the onset of the economic crisis (2009, 2021 and also 2011 for EA, on the background of sovereign debt crisis).

Given the current developments, and especially the war in Ukraine, fiscal indicators will certainly deteriorate in European Union in the near future, synchronizing with downward GDP developments. Thus, fiscal policy will face tight borrowing constraints, probably higher risk premiums due to the more stressed and less liquid financial markets, an important loss in fiscal revenues, and with increasing public spending on the background of the need to improve the social consequences of the massive flows of refugees, etc.

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