ORIGINAL PAPER

IMPLEMENTATION OF THE STABILIZING FUNCTION OF A FISCAL POLICY IN THE EUROZONE COUNTRIES

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A b s t r a c t

The implementation of a stabilizing fiscal policy is of particular importance to the eurozone countries, which do not have the ability to make autonomous decisions in the scope of their monetary policy in order to ease fluctuations of an economic cycle. The aim of this research was to evaluate the implementation of a discretionary fiscal policy in selected countries of this bloc. The *ex post* analysis of the approaches to national fiscal policies, with a division into two research sub-periods, was conducted with statistical methods. Based on the official forecasts by the European Commission, a "real time analysis" was also made, which to some extent enables gaining an insight into plans and intentions of the governments at the moment of making budgetary decisions. The results call into question the use of discretionary fiscal policies in stabilizing the economic cycle at the national level in the studied Eurozone countries. It can be said that the reforms implemented after the financial and economic crisis had a limited impact on the intentions and the actual implementation of the fiscal policies in an anti-cyclical manner. It is then sensible to consider alternative mechanisms, which could successfully lessen the asynchronous fluctuations in production within the European monetary union.

REALIZACJA STABILIZACYJNEJ FUNKCJI POLITYKI FISKALNEJ W KRAJACH STREFY EURO

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A b s t r a k t

Realizacja funkcji stabilizacyjnej polityki fiskalnej ma szczególne znaczenie w krajach strefy euro, które nie mają możliwości podejmowania autonomicznych decyzji w zakresie polityki monetarnej w celu łagodzenia fluktuacji koniunktury. Celem badań była ocena realizacji dyskrecjonalnej polityki fiskalnej w wybranych krajach tego ugrupowania. Analizę *ex post* nastawienia krajowych polityk fiskalnych z podziałem na dwa podokresy badawcze przeprowadzono z wykorzystaniem metod statystycznych. Na podstawie oficjalnych prognoz Komisji Europejskiej przeprowadzono również ,,analizę w czasie rzeczywistym", która w pewnym stopniu pozwala na uchwycenie zamierzeń i intencji rządów w momencie podejmowania decyzji budżetowych. Uzyskane wyniki badań podają w wątpliwość stosowanie uznaniowych polityk fiskalnych w stabilizacji koniunktury gospodarczej na szczeblu krajowym w badanych krajach strefy euro. Można również stwierdzić, że wdrożone reformy po kryzysie ekonomiczno-finansowym miały ograniczony wpływ na zamiar i faktyczną realizację polityki fiskalnej w sposób antycykliczny. Wobec tego zasadne jest zastanowienie się nad alternatywnymi mechanizmami, które z większym powodzeniem mogłyby niwelować asynchroniczne wahania produkcji w europejskiej unii monetarnej.

Introduction

The implementation of the stabilizing function of a fiscal policy is determined by a range of conditions: systemic, internal and external ones. At present, a particular weight is attributed to the last group, as it refers to countries' allegiance to international blocs and, in consequence, the need to adapt to the specific conditions and rules which shape the form and extent of the state's intervention in economy. Particular attention should be paid to the implementation of an anti-cyclical policy in the context of the European economic integration, in which countries transfer their competencies with regard to monetary policy to the European Union organs, and national fiscal policies are subject to transnational rules. The ability to counteract excessive, asynchronous economic fluctuations and asymmetric output gaps is considered a fundamental criterion which creates prospects for further integration and maintenance of the previous accomplishments, as the economic theory considers effectiveness to be the most significant criterion in integration processes. This phenomenon must be then empirically verifiable at various levels of the integration process in order

to assure that a stabilizing policy satisfies its objectives and does not aggravate the situation, i.e. it does not act in a pro-cyclical manner.

The aim of the present paper is to evaluate the implementation of discretionary fiscal policies in selected eurozone countries. Until the economic crisis following the pandemic of 2020, we could have argued for a certain closed phase in the functioning of the economic and monetary union in Europe. This phase, in turn, can be divided into two sub-periods whose dividing line was the economic and financial crisis and the "restructuring" of the eurozone based on a range of reforms implemented in response to that event. The time that has passed since the formation of the monetary union in Europe, and the fact that it can be broken down into two time series similar in the number of observations, facilitates such an evaluation.

Conditions for the Implementation of an Anti-cyclical Policy in the Eurozone in 1997-2019

The stabilizing function of a fiscal policy can be realized in two ways. One approach includes the so-called automatic stabilizers of the cycle, which are autonomous changes in the balance of the state budget that respond to cyclical fluctuations. The other one is referred to as a discretionary policy, which consists in taking active measures by the government to adjust expenditure or taxes to fluctuations in the economic activity (Kotliński & Warżała, 2018, p. 58). This way of implementing the stabilizing function of a fiscal policy raises much more controversy than the former one, in particular with regard to countries which belong to the monetary union. The use of fiscal instruments in order to stabilize excessive cyclical fluctuations is also determined by which current of the economic theory prevails in the economic practice. The construction of the eurozone was based on the assumptions of monetarism and the neo-classical school, which were skeptical about the use of fiscal instruments to ease the fluctuations of production in economy (Hnatyszyn-Dzikowska, 2009, p. 21, 47, 48; Heller & Kotliński, 2012, p. 230). It was then decided that one of the most important conditions for the effective operation of the union was the stability of public finances, which were a determinant of the macroeconomic stability. This approach stood in opposition to the realization of fiscal policies of the 1970s and, as emphasized by A.J. Auerbach (2012, p. 2), it followed from the negation of the effectiveness of its instruments, which was present in the Lucas critique. A solution which was to address the problem of the loss of autonomy with regard to fiscal policies was their coordination (Molle, 2000, p. 412), but only within the scope of maintaining the fiscal discipline guaranteed by the imposition of rules and restrictions in order to avoid the fare-dodging effect and the temptation of abuse. However, the competences to realize the fiscal policies have remained

at the national level. This was justified by the claim that the execution of a fiscal policy and a given country's internal context and specificity are interdependent (Skrzypczyńska, 2012, p. 289).

The autonomy of the state government, which was initially restricted by the provisions in the Treaty of Maastricht, was also subject to rules introduced in 1997 by the Stability and Growth Pact (SGP). This agreement completed and tightened the fiscal rules by obliging the eurozone member states to realize budgetary objectives, understood as the accomplishment of the surplus or balance in the mid-term (Skrzypczyńska, 2012, p. 289, 294). The basis of the corrective part of the SGP was the Excessive Deficit Procedure (EDP), which stipulates the means and timetable to deal with a country that has violated the criteria. The main objective of the SGP was to prevent negative consequences of excessive public debt and deficit. The fiscal space for the stabilization of the cycle (along with the fiscal discipline) was to be secured with the *no bailout* clause, which stipulated that the union and the particular member states do not bear responsibility for the liabilities of other countries, and with the prohibition to finance such liabilities from the funds of the central bank (*Ekonomiczne wyzwania integracji…*, 2014, p. 7).

 It should also be mentioned that the first SGP reform of 2005 de facto consisted in easing its rules. The deficit was not considered excessive if followed from an emergency which had a negative impact on the economy. More weight was given to the rule of medium-term objectives (MTO), which was to support the stability of public finances, but also provide space for active policies. However, no mechanisms of control were established to execute the MTO (Baran, 2013, p. 26). The founders of the European economic and monetary union assumed then that the free space for an anti-cyclical fiscal policy, supported by transfers from the cohesions funds and the dominance of the stabilizing real foreign exchange channel and the destabilizing channel of the real interest rate, would suffice to successfully stabilize the economic cycles (*Ekonomiczne wyzwania integracji…*, 2014, p. 19).

However, the financial crisis and then the debt crisis made it evident that the existing solutions were inadequate, and the mere membership in the monetary union and control by the SGP rules were not disciplining the member states in a sufficient manner (Kotliński, 2013, p. 13). This ineffectiveness was manifested, among other things, by the increase in debt and deficit in the eurozone member states[1]. Recession was in some sense a turning point in the approach

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[1] Doubts as to institutional solutions and fiscal mechanisms were in fact expressed even before the creation of the eurozone. Reservations were raised especially about the Stability and Growth Pact. This skepticism followed mostly from the lack of direct relation to the OCA. Moreover, the critics of the solutions proposed by the SGP emphasized the restriction of the flexibility of fiscal policy, doubling of regulations, negative impact on the synchronicity of economic fluctuations, weakening of automatic stabilizers, oversimplification of the adopted rules and lack of clarity in the rules of budget discipline (Lubiński, 2009, p. 236-248). Many economists claimed that

to the economic policy. When the most acute recessionary effects had eased off, the most important priority for the EU was to achieve tight fiscal discipline, as the growing imbalance in budget and public debt (crisis of debt) was seen as a threat to the competitiveness and economic growth of the entire bloc. What is more, it was pointed out that the economic and monetary union in Europe would not survive without a reduction in debt. Given all this, a new system of economic management was launched in 2011, based on a new fiscal control over the national level. Reforms such as the Fiscal Compact, the so-called six-pack and two-pack and the European Semester, mainly emphasized the discipline and fiscal consolidation in the eurozone, introduction of structural reforms and monitoring of the economic situation together with an ongoing analysis of the *ex ante* character.

Detailed principles with respect to the character of the budgetary framework in member states were regulated by the Council Directive of 8 November 2011. The framework was precisely defined as a set of agreements, procedures and institutions constituting the basis for a fiscal policy managed by the government and self-government agencies (Moździerz, 2018, p. 81). One of the essential principles which were formulated therein was: "Member States should avoid pro-cyclical fiscal policies, and fiscal consolidation efforts should be greater in economic good times. Well-specified numerical fiscal rules are conducive to these objectives and should be reflected in the annual budget legislation of the Member States" (Council Directive 2011/85/EU, 2011, point 18). In the context of this research, it is worth emphasizing that the introduced system of economic management was to support the anti-cyclical approach in fiscal policies (*Ekonomiczne wyzwania integracji...*, 2014, p. 9; Bénassy-Quéré & Ragot, 2016, p. 11; Markowski, 2018, p. 80). This was to be implemented with the use of several instruments.

Firstly, the European economic and monetary union placed more emphasis on the sustainability of the budgets of governmental institutions, which should be balanced or show some surplus. The EDP was then tightened and the catalogue of financial sanctions was expanded. The new system of economic management gave even more priority to the MTO, aiming at the increase in the stability of public finances (Moździerz, 2018, p. 83). Attaining the medium-term objective was to provide a safety margin to countries against the reference value of 3% GDP in the time of economic contraction. The obligation to maintain the structural balance in the amount of the individual medium-term objective (which was implemented by the modified SGP in 2005) was sustained, but the annual lower boundary

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the stabilization of the economic cycle in the member states would be limited by the Maastricht criteria. Lack of fiscal coordination was supposed to lead to a situation where independent stabilization of common shocks (taken without consultation with other countries) would result in too small fiscal activity (Allsopp & Vines, 1996, p. 91).

of the structural deficit was set at 0.5% of the GDP in market prices. For countries where public debt was below 60% of the GDP, the maximum structural deficit was set at 1% of the GDP (Kotliński, 2013, p. 15; Moździerz, 2018, p. 84).

At the same time, more flexibility was given to the regulations emphasizing structural variables, which allows one to take into account various economic situations in member states, including the contraction of the economic activity. It was determined that a deviation is not significant when the country has realized the MTO with a surplus or when the country is in an emergency beyond its control (Kotliński, 2013, p. 18; *Ekonomiczne wyzwania integracji…*, 2014, p. 9-11; Moździerz, 2018, p. 84).

Theoretically then, the above modifications based on the tightening of fiscal rules should alleviate the risk following from inadequate space for an anti-cyclical approach at the national level in the time of an economic slowdown, at least in the countries which have not generated an excessive debt (*Ekonomiczne wyzwania integracji…*, 2014, p. 9, 23). This approach reflects the fact that the European Commission, while giving priority to fiscal consolidation, paid more attention to the macroeconomic stability. In order to conduct precise evaluation of the fiscal situation in member states, the list of determinants taken into account was expanded to include such aspects as the medium-term economic growth, cyclical changes in the economy, realization of policies counteracting macroeconomic imbalances, ability to serve the long-term debt, or hidden liabilities, like those following from the ageing of the population (Moździerz, 2018, p. 78, 114).

Another important change in the system of budget management adopted after the crisis, which was important from the point of view of an anti-cyclical strategy, was placing more emphasis on the process of limiting the public debt. This was supported by a new spending rule which stipulated that the public expenditure should not increase faster than the growth of the potential GDP (in countries which has not attained the MTO, the public spending must increase more slowly than the potential GDP). This aims at securing surplus revenues, coming into the budget at the time of economic expansion, for limiting debt and not for further increase in spending (*Ekonomiczne wyzwania integracji…*, 2014, p. 9; Moździerz, 2018, p. 87). Ultimately it was supposed to counteract the pro-cyclical, expansionary fiscal policy.

In the recapitulation, owing to the implemented changes, the fiscal discipline was to be maintained throughout the entire economic cycle, and not only in the event of exceeding 3% of the DGP in the current deficit. Thus, the efforts towards satisfying this criterion were to be free of the risk that they would lead to a pro-cyclical fiscal policy in the time of weak economic growth or excessively intensive expansion. Overall, the introduced solutions in the economic and monetary union theoretically should limit the pro-cyclical character of fiscal policies and promote an anti-cyclical approach (*Ekonomiczne wyzwania integracji…*, 2014, p. 9, 10).

The manner of response to any disturbances of economic activity is important from the perspective of the theory of the optimum currency area (Warżała,

2015, p. 159). This is why the fiscal policy will always be of particular importance in the process of economic integration, regardless of the dominant paradigm in economics. Alternative adaptive mechanisms (mobility of the workforce, flexibility of prices and wages, financial integration) are not yet adequately developed[2]. For this reason, the research on the fiscal approach seems even more expedient, if only in the context of the accession of new countries into the eurozone.

Analysis of the stabilizing function of the fiscal policy in the countries sharing the same currency is particularly interesting also because the European Commission is shifting its approach towards the realization of intervention policies following from the pandemic crisis. After the lockdown crisis the strategy that had been evident since the financial crisis, namely keeping the unconditional fiscal regime, gave way to the view that the consolidation of public finances cannot be an objective of only an exogenous character. It is highly probable that this approach, when the current pandemic turbulences and the war in Ukraine are over, will remain as a supplement to the existing concept which the eurozone is based on. It is then rational to conduct a synthetic evaluation and a summary of the stabilizing function of the fiscal policies in a certain closed period of this bloc's existence.

Methodology

The research covered 12 eurozone states: 11 countries which formed it in 1999 and Greece (which joined in 2001). The selection of these countries followed from their long performance under the umbrella of the economic and monetary union. The analysis spans the period from the 1999 to the 2019, in the quarterly frequency. The empirical analysis does not cover the period of the financial crisis because the aim of the study is to analyze the implementation of stabilizing policies, not anti-crisis solutions. The former can be used in the more favorable economic times. On the other hand, the time of the recession resulted in strict anti-crisis measures. The period of the financial crisis was a unique time in the functioning of the eurozone. The recession was very deep, and varied in duration between countries (from one to three years). Such crises very seldom come together with cyclical fluctuations in relatively stable times (Borowiec, 2017a, p. 14), which the author of the present article has researched. In the light of the above, taking account of the mentioned years in the study (inclusion into one of the researched periods) would have had a great impact on the results obtained. The period of the study was thus divided into two sub-periods: 1999-2007 and 2011-2019. Such a division made it possible to conduct a comparative analysis of two sub-periods,

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[2] Even in the USA, where flexibility of wages is much higher than in Europe, fiscal and monetary interventions remain the main instrument of macro-economic stabilization (*Ekonomiczne wyzwania integracji...*, 2014, s. 21, 29).

relatively stable from the perspective of economic fluctuations, in the functioning of the eurozone. The first one ends before the outbreak of the crisis[3], and the second one begins when the situation had relatively stabilized and the reforms were being implemented[4]. The division makes it possible to compare two stages in the functioning of the economic and monetary union, separated by the most important reforms at the transnational level[5].

Statistical data were retrieved from the Eurostat, (*ECB Statistical Data Warehouse*) and reports by the European Commission (EC).

The output gap was used as a measure of the cyclicality of economies. The output gap is the most popular indicator in an evaluation of a stabilizing policy. It is interpreted as a deviation of the level of the real GDP away from the level of potential production or its trend, expressed in % (Mourre, Isbasoiu, Paternoster & Salto, 2013, p. 9, 11). In order to calculate this variable, I used quarterly sequences of the GDP in nominal values (current prices), which were then made real with the GDP deflator and cleaned of seasonal fluctuations with the TRAMO/SEATS method, recommended by the Eurostat[6]. Such time sequences were ready to extract the cyclical component and express it as % of the potential production or its trend. To this end, I used the Hodrick-Prescott (HP) filter, which was proposed by R. Hodrick and E. Prescott (1997). It is a high-throughput filter, which means that it 'passes through' fluctuations of the higher frequencies than those selected by the researcher (Adamowicz, Dudek, Pachucki & Walczyk, 2008, p. 18). The starting point in the use of the HP filter is the assumption that the time sequence is made of two components: the trend and the cyclical component. The trend estimation is done by solving the following function (Kufel, Osińska, Błażejowski & Kufel, 2014, p. 42; Beck, 2017, p. 7):

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[3] In economics, 2008 is commonly seen as the beginning of the global crisis (Arestis & Karakitsos, 2011, p. 15; Engelen *et al.*, 2011, p. 22).

[4] In the second sub-period unders research the eurozone went through the debt crisis, however. It also experienced recession in 2012-2013. This one did not follow from an external, unexpected shock like the one caused by the financial crisis. It was also decisively "more shallow" which, albeit not often, accompanies contemporary economic fluctuations.

[5] It should also be emphasized that making an unambiguous and uncontroversial division is practically difficult, as the reforms towards the improvement in fiscal and economic management were introduced in different years (e.g. the European Semester was launched in 2011, and the two-pack in 2013). Besides, their results can only be observed in the following periods. It was decided however, that the beginning of the second research sub-period will be convergent with the year when the first reform took effect.

[6] This procedure was elaborated by V. Gomez and A. Maravall (2001) and has a two-stage course. In the first TRAMO stage (*Time Series Regression with ARIMA Noise, Missing Values, and Outliers*) there is a preliminary elimination, where the selection is made of the auto-regression scope, differentiation scope, as well as delay values of the moving average for the combination of seasonal and non-seasonal factors. Next, with the use of highest credibility, outlier observations are detected together with the estimation of independent variables. Outliers are eliminated. Next, during the SEATS procedure (*Signal Extraction in ARIMA Time Series*), the series is decomposed and each of the non-observable factors is estimated. The procedure was carried out with the GRETL package.

$$\text{min.}\left[\sum_{t=1}^{T}(y_t - g_t)^2 + \lambda \sum_{t=3}^{T}(\Delta^2 g_t)^2\right] \qquad (1)$$

where:

g_t – the trend,

λ – the so called smoothing parameter.

The component of this formula which must be determined by the researcher is the parameter. The value of the smoothing parameter was set in line with the suggestion by Ravn and Uhlig (2001, p. 1), who proposed that that value for quarterly data is 1,600. The values of the cyclical component obtained with the HP filter (interpreted as the output gap) were divided by the value of HP trends and multiplied by 100, which is how I arrived at the value of the product gap expressed as % of the trend.

I used the cyclically adjusted primary balance, the CAPB, as an indicator of the approach to the discretionary fiscal policy. The CAPB is a hypothetical value of the budget balance after adjusting for the impact of cyclical fluctuations and cost of debt service. Its values were calculated in quarterly frequency, based on the following formula:

$$\text{CAPB}_t = \text{PB}_t - \varepsilon \cdot \text{OG}_t \qquad (2)$$

where:

PB_t – the primary balance of the general government sector in relation to the GDP in period t,

ε – the semi-elasticity parameter[7] indicating by how many percentage points the budget balance will change with the increase in production in the economy by 1%,

OG_t – the output gap in the period t.

Another aim of this article was to assess the plans and intentions of the governments as to the direction of the fiscal policy, with the use of official data of the European Commission, which were known to the policy makers at the time of making budget decisions. To this end, I conducted the so-called real time analysis. The basis for the evaluation of the fiscal approach was the Fiscal Condition Index (the FCI). The FCI is the difference between the value of the cyclically adjusted primary balance in the current period and in the base period. A positive change is interpreted as fiscal tightening in a given period, a negative change – as easing the fiscal policy. It can be expressed as a following formula:

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[7] The „semi-elasticity" parameter was assumed to be the values of this indicator published by the European Commission for each member state (*Report on Public...*, 2014, p. 45).

$$FCI_t = CAPB_t - CAPB_{t-1} \tag{3}$$

where:

$CAPB_t$ – the cyclically adjusted primary balance in year t,
$CAPB_{t-1}$ – the cyclically adjusted primary balance in year t-1.

Most of the research on the implementation of a fiscal policy in real time is based on the use of forecasts of the cyclically adjusted primary balance as the indicator of the next-year discretionary measures (Cimadomo, 2012; Święcicki & Michałek, 2014; Paloviita & Ikonen, 2016). In this research, I also used official forecasts by the European Commission concerning both the CAPB and the output gap[8]. As the most important part of the European Semester (the guidelines of which are used by the eurozone countries to construct and submit their budget plans) falls into the first six months of the year, the autumn forecasts for the output gap from year t-1 were used for year t, which are usually published in October and are therefore the most recent and accessible data at the time when the budget construction for the next year is still under way[9]. Given all this, in the formula (3) for the fiscal condition index, the values of the CAPB in period t have been construed as the autumn CAPB forecast from year t-1 for year t (as the budget for year t is constructed in year t-1). This choice seems natural because, compared to the previous, spring forecasts, these values reflect a wide set of planned, discretionary measures by the governments in the following year, and are published upon an analysis of preliminary budget strategies of the member states by the EC, with the account of the recommendations issued by the EU organs.

To determine if the values mean the tightening or easing of the fiscal conditions, the data must be referred to the previous period (subtract the "actual" CAPB from the previous period). The "base" value in the formula was taken to be the autumn CAPB forecast from year t-1 for the same year (t-1). These data include the most recent information which are at the disposal of politicians who make the decisions concerning the revenue and expenditure for the following year, and who know the forecasts of the cyclically adjusted primary balance in the current year. On these grounds, it can be deduced whether their intention was to tighten or ease the fiscal discipline. In consequence, the modified formula for the FCI index in "real time" was obtained:

$$FCI_t = forecast_{t-1}\, CAPB_t - forecast_{t-1}\, CAPB_{t-1} \tag{4}$$

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[8] Subsequent issues of *Statistical Annex to European Economy* and *European Economic Forecast*.

[9] In order to maintain methodological consistency with own estimates of the output gap in the quarterly frequency, forecasts of the output gap were selected with the HP filter. The European Commission also uses the output function by Cobb-Douglas to estimate these values.

where:

$\text{forecast}_{t-1}\,\text{CAPB}_t$ — the forecast for year t of the cyclically adjusted primary balance released in autumn of year t-1,

$\text{forecast}_{t-1}\,\text{CAPB}_{t-1}$ — the forecast for year t-1 of the cyclically adjusted primary balance released in autumn of year t-1.

The above formula can be interpreted as follows: an indicator of the evaluation whether politicians who are aware of the possible value of the CAPB in a given year (based on the forecast) have planned the tightening or easing of the fiscal policy for the following year. In order to determine if such plans were of an anti-cyclical or pro-cyclical character, the following assumption was made: the policy was defined as anti-cyclical when the change in the CAPB (FCI) in period t was positive (negative) and the forecast of the output gap made in period t-1 for period t was also positive (negative). In this approach, the phase of favorable economic conditions should be accompanied by fiscal tightening, and easing the fiscal discipline should take place in the phase of the economic contraction. By analogy, a reverse situation (fiscal easing in the periods of the positive output gap or tightening in the case of the negative gap) was interpreted as pro-cyclical. Following Borowiec (2017b, p. 13), it was also assumed that the annual absolute change of the cyclically adjusted primary balance must be at least 0.2% of the GDP to define the policy as either anti-cyclical or pro-cyclical. In other cases, the fiscal approach was deemed neutral.

Research Results

In order to evaluate and compare the bias of the fiscal policy, indicators of correlation between the CAPB and the output gap were estimated for the two research sub-periods defined previously[10] (Tab. 1). A positive correlation means that the balance grows in the periods of increase in the output gap and drops when the gap decreases. This indicates the anti-cyclical function of the discretionary fiscal policy. A negative correlation means that the balance has a pro-cyclical character.

In accordance with the interpretation of the value of the correlation indicator presented above, one can conclude that the CAPB in the first research sub-period was mainly anti-cyclical (correlation above 0.1). This was the case in 8 of the studied countries. In the second sub-period, however, as many as 7 countries had a balance that could be interpreted as pro-cyclical. In most cases, the estimated correlations must be considered as weak or moderate.

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[10] Because of the statistical data accessibility, the analysis of Germany and Ireland begins in Q1 2002, and Austria in Q1 2001.

Table 1

Correlation between the CAPB and output gap in eurozone countries

Country/period	1999 – 2007	2011 – 2019
Austria	0.28	-0.20
Belgium	0.16	0.02
Finland	0.71***	0.15
France	0.43***	-0.40**
Germany	0.28	-0.45***
Greece	-0.64***	0.40**
Ireland	0.19	-0.56***
Italy	-0.12	-0.80***
Luxemburg	0.63***	-0.12
Netherlands	0.19	0.01
Portugal	0.06	-0.19
Spain	0.07	-0.08

*** statistically significant correlations at 1% significance ** statistically
significant correlations at 5% significance 5%; * statistically significant
correlations at 10% significance
Source: the author, based on the Eurostat and EBC data.

The research results are to a large extent consistent with other elaborations
in the subject literature on the stabilizing function of fiscal policies in the eurozone
countries (Krajewski & Piłat, 2012; Arsic, Nojkovic & Randjelovic, 2017; Borowiec,
2017b; Carnazza, Liberati & Sacchi, 2020; Dallari & Ribba, 2020). These studies,
however, focused on the first decade in the history of the monetary and economic
union, the crisis years, and a few years following the recession.

It should be noted that the *ex post* evaluation of the fiscal policy character
is not free of shortcomings. For example, it does not contribute to the investigation
whether the implemented reforms support the planning of an anti-cyclical
approach. Therefore, it is worth considering the "real time analysis", which may,
to some degree, reflect the intentions of politicians regarding their activities
in the domain of fiscal policy.

Table 2 contains the results of the study conducted in accordance with the
procedure presented in the methodological part of this article. The lighter shade
of grey color indicates anti-cyclical policies, while the darker shade of grey color
stands for pro-cyclical policies. In addition, the bolder framework indicates the
periods in which a given country was subject to the Excessive Deficit Procedure
(including the years when the EDP was imposed and lifted).

In the first sub-period under research, the policy decisions of the governments
in the fiscal domain were mainly pro-cyclical. The concordance indicator,
understood as the percentage share of the number of years characterized by a bias

Table 2

Character of decisions regarding discretionary realization of fiscal policies in the eurozone countries

Country/year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Austria	AE	AR	PR	PR	PR	AE	N	N	-	-	-	PR	PR	PR	PR	PR	AE	N	PE	AR
Belgium	N	N	PR	AE	AE	AE	AE	AE	-	-	-	N	AE	AE	N	N	N	PR	AE	PE
Finland	AR	N	AR	AE	X	PE	AE	N	-	-	-	PR	PR	PR	N	N	PR	AE	AE	AR
France	PR	N	PR	N	PR	PR	N	N	-	-	-	PR	PR	PR	PR	N	PR	PR	N	PE
Germany	PR	AE	PR	PR	PR	PR	N	PR	-	-	-	PR	PR	PR	AE	N	AE	PE	N	PE
Greece	PE	PE	AR	PE	PE	AR	PE	PE	-	-	-	PR	PR	PR	PR	AE	PR	N	PR	AE
Ireland	PE	N	AR	X	PR	N	PR	N	-	-	-	PR	PR	PR	PR	N	AR	AR	AR	PE
Italy	AE	AE	PR	N	AE	N	AE	PR	-	-	-	PR	PR	PR	N	AE	AE	AE	PE	PE
Luxemburg	n.d.	PE	N	n.d.	n.d.	PE	N	AR	-	-	-	PR	AE	PR	AE	AE	AR	PE	PE	PE
Netherlands	PE	PE	PR	PR	PR	PR	AE	AE	-	-	-	PR	PR	PR	AE	AE	AE	PR	PE	PE
Portugal	N	AR	AR	PR	AE	AE	PR	PR	-	-	-	PR	PR	PR	PR	PR	AE	N	PE	N
Spain	AR	AR	AR	AE	N	PR	N	AE	-	-	-	PR	PR	PR	PR	N	AE	AE	PE	N

AE – anti-cyclical expansive (fiscal easing in the environment of negative output gap); AR – anti-cyclical restrictive (fiscal tightening in the time of positive output gap); PE – pro-cyclical expansive (fiscal easing in the environment of positive output gap); PR – pro-cyclical restrictive (fiscal tightening in the time of negative output gap); „n.d." no data; N – neutral, X – forecast of production gap was 0 which indicates that the economy was in the state of long-term and short-term balance. Hence, the intentions to realize the fiscal policy for the given period were not interpreted.

Source: the author, based on the Eurostat and EBC data.

that deepens economic fluctuations in this sub-period (for all countries), amounted to 42%. Anti-cyclical intentions were noted for 33% of all periods, and neutral ones – for 23%. These values do not add up to 100% as there were also years when the policies had a neutral character, or their approach was not interpreted because of the "closing of the output gap" (e.g. Finland in 2004).

Upon the analysis of the character of the implemented fiscal measures, we notice that in the second sub-period under research (2011-2019), the indicator of concordance for the periods where the pro-cyclical intentions were prevalent rose to 57% for all of the countries. Moreover, the indicator of concordance for the anti-cyclical policy dropped to 26% and for the neutral policy – to 17%. This pro-cyclicality was mainly restrictive in nature, most of all because of the target for the fiscal conditions to be met under the Excessive Deficit Procedure (this was particularly evident in 2011-2014). This pro-cyclical tightening refers also to the countries where the situation of public finances was relatively stable, which may attest to the fact that these countries exercise special caution against fiscal stimulation in the face of the debt crisis in the eurozone. Nevertheless, the pro-cyclical expansion was increasingly evident in the last three of the studied years. This may follow from the need to compensate for the period of fiscal consolidation and economic slowdown, which was foreseen then. However, in line with the research methodology presented above, these were still measures which enhanced the economic fluctuations, as the output gap was positive.

Because the period when the EDP was in place was unusual, it is worth investigating the periods in which countries had more leeway in setting their budgets. In order to verify what intentions were really dominant in those years, the anti-cyclical or pro-cyclical ones, I estimated the concordance indicator excluding all of the years in which the EDP was in force. In the first sub-period, the indicator reached 40% for "anti-cyclical years" and 34% for the "pro-cyclical years." In the second sub-period, these values stood at 38% and 45%, respectively.

The above research results cannot substantiate unambiguous conclusions, as the future fiscal decisions may not fully materialize, for example when a discrepancy appears between the production forecast at the moment of budget construction and the actual performance. Therefore, what we observe *ex post* may be considerably different from what was planned in the past and was taken account in the register of legislative instruments (Cimadomo, 2012, p. 447-451). Moreover, the closing of the Excessive Deficit Procedure did not mean that the country reached its medium-term objectives. Nevertheless, the above analysis may indicate the actual intentions of politicians at the moment of constructing the revenue and expenditure of the state, based on the existing and accessible data. The research warrants a conclusion that the reforms implemented after the economic and financial crisis had a limited impact on the intentions and factual realization of fiscal policies in an anti-cyclical manner.

Conclusions

The research results, both obtained *ex post* and from the "real time" analysis, question the use of discretionary fiscal policies in the stabilization of an economic cycle at the national level in the selected eurozone countries. Taking into account the fact that the completion of subsequent stages in the economic integration does not alter the expected outcomes of policy interventions into the economic cycle, it is worth considering alternative mechanisms, which could be more successful in alleviating the asynchronous fluctuations in production in the countries of the European monetary union. This is particularly important in the context of the new situation which the EU countries need to face after the crisis following from the pandemic and Russia's invasion of Ukraine. Public finances will eventually need to undergo gradual consolidation, which may again render national fiscal policies "inadequate" in counteracting short-term asymmetric output gaps.

In the author's view, national fiscal policies should first and foremost secure the credibility and stability of public finances in particular countries, and the potential stabilizing function should be supported by a central mechanism. The most likely scenario are fiscal transfers based on the inter-regional distribution in the short term, implemented on the *ex ante* basis as an automatic stabilizer. Needless to say, every initiative limiting the sovereignty and autonomy in the realization of a country's fiscal policy will require a significant political willpower, determination and a long-term outlook. This is why further research and discussion in this field seem necessary.

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