

IDENTIFICATION CRITERIA OF AUTOMATIC STABILIZERS AND THEIR TYPOLOGICAL CLASSES

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Abstract

In the literature, but especially in practice, there are many public debates about the most effective way to manage different macroeconomic shocks and to improve the economic cycle. Many rely on discretionary macroeconomic policies, but there are increasingly intense discussions about the use of automatic tools. Therefore this article attempts to clarify what automatic stabilizers are, what could be the classification criteria and the typologies of automatic stabilizers for a better design of these macroeconomic adjustment tools.

Keywords: automatic stabilisers, output smoothing, economic cycle;

JEL classification: H30, E32, E63;

Introduction

The global financial and economic crisis has brought to light the qualities and weaknesses of fiscal policy, re-entering in the the attention of the media and the academic environment as a supporter and counterpart of monetary policy in stabilizing macroeconomic fluctuations. At the same time, the global financial crisis has repositioned the role of discretionary fiscal policy by granting national fiscal incentives, but also by substantial recapitalization of the most important deadlock financial institutions. This aspect, in addition to boosting low domestic demand, has had a strong adverse effect - rising deficits and public debt in advanced and emerging economies in the world. Faced with the shortcomings of discretionary fiscal policy, distorted by political constraints and obtuse targets guided by electoral cycles, fiscal policy with an automatic character, based on simple, clear fiscal rules and anticyclical effects, again brings to light the role and the importance of automatic stabilizers.

Automatic stabilizers are considered to play an important role in smoothing production and have the main advantage of lacking implementation gaps, a benefit outlined by the fact that it does not require a deliberate decision by the government or the monetary authority in order to take action, being an structural endogenous element. Although with obvious utility in the economy, there are varied and sometimes divergent views on the nature, role, features and effectiveness of automatic stabilizers. In this regard, this article aims to clarify a series of features of automatic stabilizers, starting from the description of possible classification criteria and thus contributing to the understanding of the mechanism of the automatic stabilizers functioning.

Description of the Problem and short Literature Review

The literature often deals with the problem of automatic stabilizers only from the fiscal and budgetary perspective, analyzing either the revenue side or the expenditure side, considering on the base of the empirical and theoretical studies that the most prominent stabilizers are the unemployment benefits on the expenditure side, and on the revenue side the taxes, and as a whole, the size of the government is seen as a major automatic stabilizer (Martner, 2000; Cogan et al., 2010; Bornhorst et al., 2011; Shen and Kaya, 2013 etc.). In terms of monetary policy, few studies address the issue of automatic stabilizers (Krugman and Obstfeld, 2003; Palley, 2014; Ailina, 2015 etc.) and the link between the two policies is often excluded from the automatic stabilization analysis. Moreover, pure theoretical studies that clarify what are, what features have automatic stabilizers and how they work are extremely isolated.

However, in the work of Dinga (coord., 2011), the following criteria for the classification of automatic fiscal stabilizers (AFS) are identified: *the part of the economic process targeted by the AFS* (noted criterion E, aggregate demand noted E1 and aggregate supply noted E2), *the length* of the SFA action (the number of intermediate links between the AFS and the final target or the L criterion, being divided into unmediated AFS or L1 and mediated AFS or L2), the width of the AFS action (number of variables affected by an AFS

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or criterion W; AFS with mono-variable action or W1 and AFS with multi-variable action or W2), the final target of an AFS (e.g. the variable on which AFS will act, the criterion S, with 7 sub-criteria referring to labor factor - S1, capital - S2, imports - S3, private consumption - S4, private investment - S5, exports - S6, government expenditure - S7), AFS impact channel (or AFS fiscal policy instrument, noted T criteria), the connectivity of the AFS action (or C criterion, single AFS in a chain of transformations - C1 or non-unique C2), the form of AFS action (the F criterion; continuously - F1 or with discontinuity - F2), the mode of action of an AFS (permanent or M2 criterion or singular the M1 criterion), the density of the institutional grid (refers to the existence of a threshold – the K1 criterion or multiple thresholds for variation in the rate of action of an AFS or the K2 criterion), the invariance of an AFS (the possibility or lack of autofeedback; where the AFS which conserve themselves have the notation criterion I1, and non-conservative I2).

Methodology and Data Sources

Numerous studies address the issue of automatic stabilization at either microeconomic or macroeconomic level, focusing mainly on empirical studies and simulations, generally on the fiscal-budgetary side. Theoretical studies, although extremely few, can bring important clarifications on what are automatic stabilizers, what are their features, and how they can be exploited theoretically and practically to increase the effectiveness of using stabilization tools. This article represents a partial valorisation of the study "Automated Stabilizers in the Economy - Concept, Classification and Design Elements" (Ailincă, 2018 coordinator, study conducted within the "Victor Slăvescu" Center for Financial and Monetary Research). Thus, this article is based primarily on an abstract, theoretical and logical analysis, without a contextualized concentration of the empirical nature, proposing the analysis and the increasing of the degree of consistency of the concept of automatic stabilizer in the economy, offering as much as possible a very own interpretations. This analysis is favored by the existence of important differences in literature approaches, of different methods of calculating automatic stabilizers (especially fiscal ones), of different definitions and different indicators, being no agreed reference as universally valid for this subject.

Results Obtained

Identification of classification criteria and typology classes of automatic stabilizers

On the basis of Dinga's work (coord., 2011), the criteria for the classification of automatic fiscal stabilizers can be easily extended to other automatic stabilizers, such as automatic monetary stabilizers (see Table 1).

Given that automatic stabilizers often use the institutional path open by the classical macroeconomic policy instruments, we recall the monetary policy instruments used by them: 1. Monetary market operations, 2. Permanent facilities offered to credit institutions, and 3. Minimum mandatory reserves (RMO). Monetary market operations are mainly aimed at communicating monetary policy guidance, guiding interest rates and managing liquidity conditions on the market. Monetary market operations pursue liquidity injections (e.g. repo operations, collateralised loans with eligible assets for collateralisation, purchases of eligible assets for trading), and liquidity absorption (e.g. reverse repo operations, attraction of deposits, issuance of deposit certificates, sales of eligible assets for trading) and foreign exchange swap, representing two simultaneous transactions with the same counterparty, also used for injection or absorption of liquidity.

Table 1. The typological framing of the potential automatic monetary stabilizers according to the classification presented in Dinga's work (coord., 2011)

		Exchange rate	Automatic money market operations that seek liquidity injection	Automatic money market operations that seek the absorption of liquidity	Automatic interest rate on the permanent credit facility	Automatic interest rate on the permanent deposit facility	Automatic rate of MMR in lei	Automatic rate of MMR in foreign currency
E	E1							
	E2							
L	L1							
	L2							
W	W1							
	W2							
S	S1							
	S2							
	S3							
	S4							
	S5							
	S6							
	S7							
T	T1							
	T2							
	T3							
	T4							
	T5							
C	C1							
	C2							
F	F1							
	F2							
M	M1							
	M2							
K	K1							
	K2							
I	I1							
	I2							

Source: author's conception

As regards the permanent credit facilities, they are also designed to provide short-term (one day) liquidity absorption, but also to stabilize the short-term interest rates (overnight interest rate) of the money market through the corridor form by the credit facility respectively the deposit facility, which can also be designed at a certain moment in a form of automatic monetary stabilizer.

At the same time, the monetary policy interest rate of the two facilities represents the nominal interest rate under the full control of the national bank, which can be increased / decreased sufficiently by an automatic mechanism in order to increase / decrease the real interest rate, acting as an automatic stabilizer towards reducing / increasing aggregate spending serving to stabilize the economy at the potential level (Stiglitz and Walsh, 2005). If we consider the inflation the main monetary policy target and the monetary policy interest rate as the main monetary policy instrument, it is important to specify the difficulty in determining the extent to which the nominal interest rate (monetary policy interest rate) should increase / decrease as a result of growth / decrease in inflation. Therefore, in order to preserve real decision-making power, this instrument may not be wanted to be designed as an automatic stabilizer.

Regarding Mandatory Minimum Reserves (MMR), which is the available money (in lei and in foreign currency) in the National Bank of Romania (NBR) accounts of credit institutions, also here could be conceived as a stabilizing instrument. Considering that the rate of Mandatory Minimum Reserves aims to increase / decrease the ROL credit expansion and the rate of Mandatory Minimum Reserves in foreign

currency seeks to increase / decrease the foreign currency credit expansion, we can consider that an automatic stabilizer based on MMR would directly target credit control, and thereby adjusting the economy.

If we take into account that controlling and reducing inflation is the main monetary policy target, even if money market demand can require to raise money supply, the central bank will act through the key interest rate (implicitly by the standing facilities) by increasing it (restricting the ability of commercial banks to lend to the economy) than by means of monetary growth, which is why I did not consider the instrument of using monetary aggregates as possible automatic stabilisers. However, automated tools could also be designed for monetary aggregates.

From the perspective of the transmission channels (we considered this criterion the T criterion), according to the NBR, it can be noted: the exchange rate channel (T1), the credit channel (T2), financial institutions the interest rate channel (T3) the balance sheet channel (T4) and the channel of economic agents' expectations regarding inflation (T5).

It should be noted that in the case of the economic process side of the action of an automatic stabilizer (E criterion), in the short and medium term monetary policy through its instruments (automatic or discretionary) affects only the gap between the actual or real level of production and the long-term sustainable one, thus not directly influencing the workforce situation, technological endowment and implicitly production.

By the fact that monetary policy aims to stabilize the liquidity market conditions by injecting liquidity (e.g. buying assets, repo operations, etc.) - this can be assimilated to the function of spending within budgetary-fiscal policy (by spending the public money the government offers liquidity to the system, respectively by absorption of liquidity (e.g. asset sales, reverse repo operations, etc.) - this can be assimilated to the revenue collection function of the state budget, with the withdrawal of funds /liquidity from the economy. This systematization can allow us to fit the monetary and fiscal stabilizers according to the supply / withdrawal of liquidity in the economy (let consider this the criterion A). Thus, we can assume that there are automatic stabilizers that inject liquidity (A1) and others that absorb it (A2).

According to Göndör (2012) on the characteristics and role of automatic fiscal stabilizers, the author points out that the disadvantages of discretionary fiscal policy recommend the use of automatic stabilizers due to lower political interference, faster decision-making and, in general, a economic environment with less fiscal uncertainties. Other elements that might recommend the use of automatic stabilizers according to the author are: more transparency, a clearer mechanism of operation and more responsibility. Thus, in relation to the concentration of discretionary or non-discretionary character, we can classify the stabilizers as automatic, quasi-automated or discretionary. In this regard, for automatic stabilizers (noted B criterion) we might consider them as automatic (B1) and quasi-automatic (B2).

Another possibility of classification could be the quality of "path dependence" of automatic stabilizers. Thus, depending on the "path dependence" (noted C criterion), automatic stabilizers can be considered either to use the "pathway" of discretionary policy tools to exert their action (C1) or to act in other ways (C2), creating new tools for macroeconomic policies, so their own institutional path.

Another classification element could be the action time of an automatic stabilizer. Depending on the time of action (noted D criterion), stabilizers can be considered to have short duration of action (consider 1-12 months – criterion D1), mean duration of action (we consider more than 1 year but less than 5 years - the D2 criterion) or long duration of action (lets consider over 5 years - D3 criterion). This classification could be analyzed in relation to the duration of the economic cycle. The economic cycle, consisting of fluctuations in the recurrent economic activity, is generally measured by GDP movements (downward and upward) around the trend. It is considered according to the economic theory that business cycles last between 1-8 years, while financial cycles last in average 16 years and the moment of systemic banking crises coincides with the cycles of financial cycles (Isărescu, 2013). Turning to the duration of an automatic stabilizer, according to Socol and Socol (2012), "the impact of automatic stabilizers is short-lived, and if they operate symmetrically over the economic cycle, it does not contribute to a deterioration of the structural budget position". Here, it should be noted that besides the duration of action of a stabilizer, we must also analyze the duration of the effects (benefits) of a stabilizer, and of course it should be observed that the duration of the benefits of a stabilizer should be projected as great as possible and the duration of action of a stabilizer as small as possible but optimal.

Another element of classification may be the nature of the basis upon which it is acting. Depending on the nature of the basis on which they act (E criterion), automatic fiscal stabilizers can act on either income items (E1) or either on expenditure items (E2), adjusting automatically to changes in the economic cycle (Martner 2000, pp. 32). A criterion that can also be used for monetary stabilization (acting either on the asset side - I think it can be assimilated to E2 or either on passive side - assimilable to E1). At the same time, if we consider the balance sheet perspective at the aggregate state level, we can consider that there can be automatic stabilizers that can act either on the asset side or on the passive side.

At the same time, the degree of responsiveness of the control variable to changes in the economic cycle, having an impact on the degree of responsiveness of the control variable to the action of an automatic stabiliser (AS), describing the possible efficacy of an AS, may be considered another classification criterion. It may be another classification criterion. The command variable receptivity can be determined by the structure and system features of the command variable. According to the degree of responsiveness of the control variables to changes in the economic cycle, we can analyze the effectiveness of the action of an AS (noted Criterion F). For example, depending on the receptiveness of expenditures and revenue (e.g., implicit taxes) to changes in the economic cycle, the single tax rate or the progressive taxation system can be used in fiscal-budget policies. For example, the progressive taxation system offers a better connection between fiscal policy and the economic cycle. Thus, we can assume that there are automatic stabilizers whose control variables have low (F1) or high (F2) responsiveness to changes in the economic cycle. According to Buti et al. (2003) and the European Commission (2001), empirical evidence shows that the more a state has a more generous social system and a large fiscal system and a progressive tax system, the state tends to extract a greater "smoothing effect" from automatic stabilizers.

The nature of the macroeconomic shock on which an automatic stabilizer acts, may be another classification criterion. The operating principle of automatic stabilizers is to balance the budget in relation to the evolution of the production deficit. More specifically, the functioning of AS is guided by the preventative, anti-cyclical character of economic behavior. An AS pursues fiscal or monetary relaxation during the economic downturn, while in the economic boom period it tightens and strengthens fiscal-budgetary or monetary policy, and therefore seeks primarily to combat the effects of a demand shock. Depending on the the nature type of the shock, there are automatic stabilizers acting in the first phase either on a demand shock (let us state the criterion - G1) or on the offer shock (G2 criterion).

If we consider the possibility of the reversibility of the expansion or contraction of the economy by the action of automatic stabilizers, we can consider the impact on the reversibility of expansion or contraction of the economy another criterion. Depending on the impact on the reversibility of the expansion or the contraction of the economy (lets consider the H criterion), automatic stabilizers can be considered to have a perfectly reversible (H1) or partially / semi-reversible (H2) effect.

Depending on the predominant ability to remove an unwanted effect or to obtain a positive effect (I criterion), automatic stabilizers can be categorized as deviators (e.g. stabilizer action is focused to reduce social inequality - I1 criterion) and attractors - the I2 criterion (e.g. guaranteed minimum income, state allowance for children).

Another criterion could be the degree of derivation of the effects of automatic stabilizers in the economy. Depending on the degree of derivation of their effects in the economy (the J criterion), we can consider the existence of primary stabilizers (J1), secondary (J2), tertiary (J3) and quaternary (J4). This classification could be based on the systematization of the sectors of the national economy, shaping up how far the effects of automatic stabilizers can get.

Another classification criterion could be the geographical area of action. Depending on the geographical area of action (let consider this the K criterion), automatic stabilizers may be local / national (K1), regional (K2) and international or global (K3) (e.g. AS created by international bodies or as a result of international treaties). Recently, in the European context, supranational automatic stabilizers are being discussed, which would have the effect of smoothing cyclical fluctuations (mainly reducing boom and bust episodes) and increasing the confidence of national member states in EU bodies, taking over some insurance and stabilization function on a supranational level.

At the same time, another element of grouping of automatic stabilizers could be the level of economic action. Depending on the level of economic action (criterion L): automatic stabilizers can be microeconomic (L1) and macroeconomic (L2).

If we are talking about the macroeconomic policies in which an automatic stabilizer could operate, another criterion would be the macroeconomic policies pursued. Depending on the macroeconomic policies pursued (criterion M), they can be automatic fiscal-budgetary stabilizers (M1), social stabilizers, monetary stabilizers (M2), etc. According to Andersen (2016), it is considered that a clear distinction is not possible between fiscal policies and social and labor market policies, which is why we can also regard social automatic stabilizers as falling into the fiscal ones.

The area of complexity of an AS may be another criterion for grouping automatic stabilizers. Depending on the complexity of the action of an AS (N criterion), there may be automatic stabilizers with direct individual action on a single macroeconomic policy (N1) and automatic stabilizers with mixed action (eg simultaneously intervening in fiscal policy and in the monetary policy - N2 criterion).

Although it is often distinct, we can also take into account the criterion of overlapping the trigger identity over the automatic stabilizer (assimilable to a self-stabilizing phenomenon) and the overlapping trigger over the variable to be controlled. Depending on the overlapping of the trigger identity over the automatic stabilizer (O criterion), (e.g. the trigger is only a threshold of the stabilizer instrument, for example the exchange rate in the case of a self-regulating mechanism) (O1) or another variable (O2) (the trigger can be an intermediate variable or even variable that you want to control).

Although, indirectly, it can describe an automatic stabilizer, thus we can take into account the suitability of the trigger as another criterion of classification. Depending on the trigger's suitability (P criterion): rough (P1) or sensitive (P2); aspect which can differentiate between the suitability or inadequacy of the trigger on the automatic stabilizer. For example, in the case of unemployment benefit, the trigger may be the unemployment gap or production gap or unemployment rate, often considering that the unemployment rate is more appropriate, more sensitive, as a trigger variable, of course at a certain threshold (European Commission, 2013, page 5). This criterion can also be considered separately, detached in the strict sense of the features of the automatic stabilizer (especially when its identity does not overlap the stabilizer).

At the same time, we can make a ranking according to the trigger threshold height. Depending on the trigger threshold height (Q criterion), it can be considered an automatic stabiliser with low / discrete threshold for trigger (Q1) or high threshold for trigger (Q2). There could also be multiple thresholds, symmetrical or asymmetrical. It is considered, for example, that the height of the threshold of the trigger affects the frequency and duration of the stabilization benefit in the opposite direction. Also, even under the threshold, there is a possibility that the economic and social situation of the potential beneficiary is rather precarious and requires stabilization, but due to the high threshold it might not to receive it. Also this criterion can be detached in strict sense of the stabilizer features and can be taken over by a classification of the trigger variable.

Another possible classification criterion may be depending on the characteristics of the tension of the flow of economic substance or the stabilized element. Depending on the characteristics of the economic material flow voltage of the stabilized element (noted R criterion), it may be diminishing stabilizers (R1) or potentiators / amplifiers (R2).

At the same time, it should be taken into account the criterion on the effectiveness of stabilizers. Depending on the stabilizer efficiency criterion (let's note S criterion) we can assume that there are strong or high-efficiency automatic stabilizers (S1) and low-efficacy automatic stabilizers (S2). For example, according to Stiglitz and Walsh (2005), an economy with stronger automatic stabilizers has an aggregate demand-inflation curve more close to vertical, with a lower cyclical unemployment and less output reduction than in the case if automatic stabilizers would not work. Below is the typological codification according to the above mentioned criteria of the automatic monetary stabilizers (see Table 2) and of the automatic fiscal-budgetary stabilizers (see Table 3).

The presentation of these typologies is not intended to be exhaustive, and there are certainly other ways of systematizing and classifying automatic stabilizers, of course, depending on a certain purpose or multiple purposes established in the framework of macroeconomic policies.

**Table 2. Typological framing of potential automatic monetary stabilizers
according to the above classification**

		Exchange rate	Automatic money market operations that seek liquidity injection	Automatic money market operations that seek the absorption of liquidity	Automatic interest rate on the permanent credit facility	Automatic interest rate on the permanent deposit facility	Automatic rate of MMR in lei	Automatic rate of MMR in foreign currency
A	A1							
	A2							
B	B1							
	B2							
C	C1							
	C2							
D	D1							
	D2							
	D3							
E	E1							
	E2							
F	F1							
	F2							
G	G1							
	G2							
H	H1							
	H2							
I	I1							
	I2							
J	J1							
	J2							
	J3							
	J4							
K	K1							
	K2							
	K3							
L	L1							
	L2							
M	M1							
	M2							
N	N1							
	N2							
O	O1							
	O2							
P	P1							
	P2							
Q	Q1							
	Q2							
R	R1							
	R2							
S	S1							
	S2							

Source: author's conception

Table 3. Typological framing of potential automated fiscal stabilizers according to the above classification

		Personal Income Tax	Corporate income tax	Parafiscal payments (contributions)	Transfers (social assistance) (social aid, social subsidies, guaranteed minimum income)	Transfers (Unemployment Benefit)
A	A1					
	A2					
B	B1					
	B2					
C	C1					
	C2					
D	D1					
	D2					
	D3					
E	E1					
	E2					
F	F1					
	F2					
G	G1					
	G2					
H	H1					
	H2					
I	I1					
	I2					
J	J1					
	J2					
	J3					
	J4					
K	K1					
	K2*					
	K3					
L	L1					
	L2					
M	M1					
	M2					
N	N1					
	N2					
O	O1					
	O2					
P	P1					
	P2					
Q	Q1					
	Q2					
R	R1					
	R2					
S	S1					
	S2					

Source: author's conception, head of the table is from Dinga's work (coord., 2011);* it would be advisable to have stabilizers at regional (for example, EU) level as well

Conclusions

The global financial and economic crisis has brought to light the qualities and flaws of fiscal policy, considering that monetary policy can not solve the main macroeconomic imbalances alone and entirely. The role of the state has been reconsidered, both from a discretionary perspective, of the concrete measures taken by governments on the economy, but also from the perspective of automatic functioning. Although monetary policy is considered to be a good tool for monetary instruments to stabilize disturbing macroeconomic fluctuations, the crisis has shown that there is room for better design of monetary policy management tools and automated stabilization.

The highly varied and often divergent opinions on automatic stabilizers require the need to deepen the knowledge of the nature, role, features and effectiveness of automatic stabilizers in the economy. Thus, this article aims to clarify a series of features of automatic stabilizers, starting from the description of possible classification criteria, in addition to those already mentioned in the literature, hoping to contribute at least theoretically to the better understanding of the operation mechanism of automatic stabilizers.

Future Directions to Be Approached

At the same time, given that the automatic stabilizer is analyzed against a chosen variable in order to be stabilized, a strict analysis may be considered necessary, focusing on the variable to be stabilized (especially if there is a distance between automatic stabilizer and the final target) in the sense that it should be noted that part of these classification criteria could be applied to it (and also to the economic context in which an automatic stabilizer acts). This could lead, by integrating as much knowledge as possible, to a better understanding of the mechanism of automatic stabilizers' operation in the economy. Equally, the simultaneous treatment of automated monetary and fiscal elements and the integration of knowledge about their functioning could make a significant contribution to understanding the cohesive function mechanism of macroeconomic policies.

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