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Monetary Policy Targets and Macroeconomic Equilibrium. Some Theoretical Remarks

Abstract:

Purpose: The article attempts to systematize the strategies undertaken by individual countries (groups of countries) after the 2007+ crisis with regard to stabilizing prices and supporting economic recovery. It is about highlighting the strengths and weaknesses of particular types of strategies as well as opportunities and threats related to their implementation.

Methodology: In the theoretical analysis, three types of economies were distinguished, using as a criterion the orientation of a given economy towards securing price stability or supporting economic recovery. The classical dynamized AD-AS model, commonly used in macroeconomics, and the SWOT analysis were used as a research tool.

Findings: The basis for differences in the approach of economic authorities of individual countries to the problem of stabilizing prices or supporting economic recovery is the mandate of the central bank. Depending on the type of strategy implemented by the central bank, individual countries and groups of countries react diametrically to exogenous shocks, which results in different results in terms of economic growth and employment.

Practical Implications: The results can be utilized by central authorities (central banks) in formulating assumptions and forecasts of monetary policy.

Originality / Value: The paper contains an original division of countries / groups of countries due to their orientation in the field of medium-term stabilization policy. The analyzes of these countries are also original, having no equivalent in the world literature on this subject.

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1. Introduction

No major simplification is not made by stating that the essence of the dispute that has been going on in economic theory and in the theory of economic policy for several decades boils down to answering the question whether the medium-term stabilization policy should focus solely on securing price stability, or it should support the achievement of other goals, in particular securing the means to accommodate the economic recovery and improve the situation on the labor market (Friedman, 1968, 2007; Akerlof, Dickens, & Perry, 1996; Bernanke, Laubach, Mishkin, & Posen, 2001). This dispute takes different forms, in different places and with different intensity (Ball, 2013; Ito, 2016; Bednarczyk, 2012; Bednarczyk, Brzozowska-Rup, 2018). During it, spectacular changes of positions (e.g. Blanchard, Dell'Ariccia, & Mauro, 2010; Blanchard, Dell'Ariccia, & Mauro, 2013) and politics took place; e.g. the hitherto supporters of full price stabilization became supporters of creeping inflation, as was the case, for example, in the Japanese economy (increasing the inflation target), or in countries that developed "traditionally" in conditions of high inflation and began to implement policies aimed at suppressing it (Mexico).

The number and influence of the supporters of both options also evolved. While at the beginning of the 1990s, there was almost unanimity among the theoreticians and practitioners of central banking on the importance of securing price stability as a necessary and practically sufficient condition for long-term economic growth, situation changed after the crisis at the turn of the 2000s, and especially after the 2007+ and COVID – 19 crises. Supporters of using all available monetary policy tools to revive the economy began to gain more influence (even in conservative circles of central banking leaders), justifying slightly greater tolerance for price increases (Powell, 2020; Bank of England, 2021; Clarida, 2021). The nature of the dispute over the way economic policy is formulated is reflected in the strategies implemented by individual countries (groups of countries) with regard to stabilizing prices and supporting economic recovery (ECB (a), 2021; ECB (b), 2021; PBoC, 2021; Board of Governors of the Federal Reserve System, 2021). As mentioned above, these strategies may change over time depending on the results achieved. Therefore, it is important to trace

the mechanisms and channels of their impact, especially in periods of strong exogenous shocks.

2. Methods

In the theoretical analysis, three types of economies were distinguished, using as a criterion the orientation of a given economy towards securing price stability or supporting economic recovery. Featured:

- 1) low – inflation oriented economies,
- 2) moderate - inflation growth oriented economies,
- 3) higher - inflation growth oriented economies.

The classical dynamized AD-AS model, commonly used in macroeconomics, and the SWOT analysis were used as a research tool.

3. Theoretical analysis

re.1) The main feature of low-inflation oriented economies (see the example of the euro-area economy) is readiness to give up economic growth if the result of this growth is exceeding the set low inflation target. Such unambiguous determination of priorities was explicitly included in, among others, the Treaty on the Functioning of the European Union (EU 2008) , Statute of the European System of Central Banks and of the European Central Bank (EU 2012) , where in Chapter 2, Article 2 of the latter it is stated that “the main objective of the ESCB is maintaining price stability. Without detriment for price stability (emphasis added), the ESCB supports general economic policies in the Union ...”.

Moreover, even if real inflation is below the set target but inflation expectations show an upward trend, then, it is quite likely that in this type of economy monetary policy can become stricter in fear of triggering an “uncontrolled” inflation process which in the long run can threaten achieving the set target. In the low-inflation oriented economy, in accordance with the logic of the Taylor rule, clear asymmetry can occur as regards the reaction of the authorities to the increased inflation rate and higher unemployment rate. Even a slight move upward of the inflation rate (by few basis points) – especially when real inflation overlaps or slightly exceeds the set inflation target – causes tightening of monetary policy (triggers a series of increases in official interest rates), whereas a higher (even considerably) unemployment rate, (of several hundred basis points) is ignored by the authorities which explain this increase, e.g. by changes in the NAIRU levels (Bednarczyk, 2013) or provide other equally abstract causes. The way in which this type of economy reacts to exogenous shocks, both negative and positive, is also important.

The way in which the anti-inflation-oriented economy reacts to a negative exogenous shock resulting, e.g., from a considerable increase in prices of raw materials is presented in Figure 1.

Figure 1. Reaction of low-inflation economy to a “negative” price shock.

Source: Author's own research.

The initial equilibrium at point A corresponds to output at the level P_0 and inflation of i_0 , i.e. equal to the adopted inflation target i_c . Let us assume that a sudden and considerable increase in prices of raw materials (e.g. oil) takes place in the global market which, considering dependence of a given economy on their imports, will cause an increase in production costs and prices. This corresponds to a shift of the supply curve from s_0 to s_1 and equilibrium from point A to point B_1 . However, the monetary authorities of a country following the strategy of maintaining inflation close to the set inflation target will tighten monetary policy to prevent inflation growth. As a result of a decline in global demand (a shift of the demand curve from d_0 to d_1), the economy will reach equilibrium at point B which corresponds to the output level P_2 , lower than the initial level P_0 and lower than the level P_1 which would result from the use of a price rise as an external shock absorber. The difference between the output levels P_1 and P_2 is the cost incurred by the economy for maintaining price stability. It is the flexibility of changes in the output levels in relation to price changes (position

of the supply curves) that determines how big this cost is in relation to achieved benefits. A more horizontal position of these curves can cause that the benefits achieved in the field of price stability (the difference between i_1 and $i_0 = i_c$) can turn out to be quite small, whereas production losses can be significant.

The reaction of the low-inflation oriented economy to a “positive” price shock can be equally unfavorable for economic growth (Figure 2).

Figure 2. Reaction of the low-inflation oriented economy to a “positive” price shock.

Source: Author’s own compilation.

Let us assume that point A indicates the situation of initial equilibrium which corresponds to the output level P_0 (at the reserve production capacity) and inflation i_0 equal to the inflation target i_c set by the authorities. Let us also assume that the economy becomes a beneficiary of a “positive” price shock related, e.g. to lower prices of raw materials or an inflow of cheap labor force reducing production costs (a shift of the s_0 curve to s_1). Theoretically, lower production costs can cause two types of reaction from the authorities: 1) maintaining a neutral (or even restrictive) character of monetary policy which results in an equilibrium at point B, 2) initiating reduction of interest rates to revive demand which means a shift of the demand curve d_0 to d_1 and the equilibrium from point A to point B_1 .

Considering the fact that the authorities try to keep inflation at level i_c that is higher than real inflation (thus, they have a degree of freedom to support a recovery), it seems more probable that they will adopt strategy 2. Yet, in practice, in the low-inflation oriented countries, variant 1 is chosen. It happens so because while pursuing the set inflation target and emphasizing a negative effect of each price increase on the market participants' assets and quality of life, the authorities will perceive "undershooting" the target as a lesser threat for the economy than a threat posed by the situation when inflation exceeds the set target. They will interpret an inflation decrease as temporary and not requiring any correction of monetary policy. Naturally, such an approach of the authorities exposes "real" economy to a significantly increased risk which results from the possibility of transforming inflation expectations into deflation expectations, increasing the expected long-term real interest rates and pushing the economy into a long-lasting "low inflation trap" with all its negative consequences (Bednarczyk, Misztal, 2016; Ito, 2016; Xiaochuan, 2016).

re 2) A different "philosophy" of development is implemented by the moderate-inflation growth oriented economy. In the legislation of these countries defining the central bank goals, the tendency towards growth maintenance is given the highest priority but price stability is taken into account as an important factor determining its attainment. A specific feature of the development strategy implemented by the moderate-inflation growth oriented countries is their pragmatic and not doctrinal approach to the way in which monetary policy is carried out. In the policy of both countries one can find some elements of the "hybrid" version of inflation targeting (certainly more in the policy of the Federal Reserve System), yet, the character of undertaken activities is determined mainly by their consistency with the current practice, adequacy to the current conditions in which the economy functions and usefulness for satisfying its needs.

The moderate-inflation growth oriented countries react differently to external supply-side shocks in comparison to the above described cases of reaction to these shocks by the countries implementing tough anti-inflation strategies. Figure 3 illustrates the case of reaction to a negative supply shock. The initial equilibrium at point A corresponds to the inflation rate i_0 and output P_0 . The effect of a supply curve shift from s_0 to s_1 (due to a supply-side shock) will be a tendency towards the equilibrium at point B which corresponds to higher inflation (i_1) and lower output (P_1). The authorities note a growing inflation rate and, at the same time, try to calm down expectations (forward guidance can be one of the methods)

while taking decisive measures aiming at counteracting the supply-side shock effects. They can be of both pro-supply nature (tax reliefs, increased expenditure on R&D) and pro-demand nature (increased access to credits and lower credit costs, increased state expenditure, etc.). As a result of the authorities activities and market mechanisms, the supply curve will move to s_2 and the demand curve – to d_1 . The equilibrium will be found at point B1,

Figure 3. Reaction of the moderate-inflation growth oriented countries to a “negative” supply-side shock.

Source: Author’s own research.

which corresponds to the same output level which was noted before the shock. The inflation rate which in “the transitional period” was higher than at the beginning can be reduced depending on the extent to which the authorities will manage to put inflation expectations under control. If the return to the output level from before the crisis is more the effect of pro-supply moves reducing production costs (the supply curve shifts towards s_3), then the price increase rate can achieve values lower than those before the crisis, and output – higher levels (equilibrium at point B2).

Also in the case of a “positive” supply-side shock the reaction of the moderate inflation growth oriented economies will be more favorable for the prospects of the general macroeconomic equilibrium than in the case of the low inflation oriented economies (Fig. 4). Let us assume

that due to a large decrease in prices of raw-materials (oil), the supply curve will start to shift downwards to the right towards s_1 , which corresponds to the tendency towards increased output (due to lower costs and generally better effectiveness of management) and lower inflation indices. The authorities supporting growth and striving for a better situation in the labor market (in China this can mean including subsequent groups of rural population in labor market mechanisms) will perceive a temporary decline in inflation as a chance to implement pro-supply factors of the business cycle recovery (e.g. by easing credit policy). Obviously, the degree of the production capacity utilization and the balance of payment situation are very important for the possibility of taking advantage of this chance. However, if the economy does not function in the circumstances close to the

Figure 4. Reaction of the moderate-inflation growth oriented economy to a positive supply shock.

Source: Author's own research

Full utilization of its production capacity and the situation of the balance of payment does not seriously deteriorate, it is highly probable that as a result of the authorities activities and market mechanisms, the economic equilibrium will eventually appear at point C, which corresponds to a decisively higher output level than that before the shock and the same inflation rate. A positive difference between output levels P_2 and P_1 is the evident gain of the moderate-inflation growth oriented economy

in relation to the low-inflation oriented economy, resulting from a possibility of implementing a more flexible and active income policy.

re. 3) The specificity of the higher-inflation growth oriented countries (economies) stems from the facts that, firstly, these countries experience longer or shorter episodes of high (India) or very high (Brazil) inflation and, secondly, that they understand price stability differently from the low or even moderate inflation growth oriented countries.

Moving on to the analysis of reactions of the higher-inflation growth oriented economies to supply-side shocks, we should keep in mind the evolution of their monetary policy in the course of the last decades as the inflation processes were fading globally. In connection with lower global inflation indices, also the costs of the disinflation process initiated in those countries gradually decreased; this was supported by stabilization or even a drop in import prices. Thus, the said countries could focus more on pursuing their inflation targets without risking excessive losses in the fields of production output and employment. The “classical” model of the reaction to an exogenous price shock in the higher-inflation growth oriented economy, causing an unexpected increase in production costs is presented in Figure 5. Let us assume that initially the economy is in the state of equilibrium at point A which corresponds to output level P_0 and inflation i_0 .

Figure 5. Reaction of the higher-inflation growth oriented economy to a “negative” price shock

Source: Author's own research.

A considerable increase in import prices causes a shift of the supply curve to s_1 and economic equilibrium curve to point B which corresponds to a lower output level (P_1) and lower employment. The authorities willing to support economic growth and prevent an increase in unemployment can choose a strategy consisting in compensation of higher import costs to companies by increased access to bank credits and reduced credit costs, increased public procurement, etc., which will result in increased internal demand values and a shift of the demand curve to position d_1 and economic equilibrium to point C. The new equilibrium will enable the return of output and employment to the pre-supply shock levels, which can be perceived as a success of the authorities' policy. Yet, this success will be achieved at the expense of high inflation (i_2).

Moving on to the analysis of the reaction of the higher-inflation growth oriented economy to a "positive" exogenous shock, it must be noted that this type of economy can use all assets of the expansive income policy to revive economic growth. Like in the case of the moderate-inflation growth oriented economies, here also the limits of economic expansion are determined by the degree of utilizing production capacity and the situation of the balance of payments. Characteristic features of these economies are often substantial resources of unused labor resources, high ratio of investment in fixed assets and a large capacity for absorption of foreign direct investments which flow in with an intention to take advantage of the recovery. Both these factors act toward removal (or mitigation) of barriers to growth and strengthen the boom.

Figure 6. Reaction of the higher-inflation growth oriented economy to a “positive” price shock.

Source: Author's own research.

Possible changes in the macroeconomic equilibrium in the higher-inflation growth oriented economy are presented in Figure 6. A shift of the supply curve to s_1 and economic equilibrium to point B accompanies output growth to the level of P_1 with a simultaneous drop in inflation (i_1). The authorities interested in following long-term goals of “economic and social progress” or “indispensable economic growth”, will not take advantage of a temporary inflation drop to anchor inflation expectations at a lower level (e.g. by tightening monetary policy) so as to allow the inflation rate to reach the values close e.g. to the values noted in the countries of low inflation (2 - 3%), but instead they will initiate actions supporting economic growth up to the moment when inflation reaches “traditional” or even temporarily higher inflation values. In Figure 6 this corresponds to a shift of economic equilibrium to point C which in turn corresponds to a higher than initial output level (P_2).

4. Discussion

Table 1 presents the elements of the SWOT analysis of the above-mentioned strategies of the medium-term stabilization policy. The differences in the effects they cause depend, inter alia, on the severity of exogenous shocks affecting individual economies, the degree of society's tolerance of price increases, the effectiveness of market mechanisms as well as the speed and scope of a given economy's response to changes in macroeconomic policy (Bednarczyk, 2018). The theoretical analysis

Table 1. SWOT analysis of selected strategies of the medium-term stabilization policy

		Strenghts	Weaknesses	Chance	Threats
1	A strategy focused on keeping inflation low	<ul style="list-style-type: none"> - low inflation - real income protection - strengthening of the exchange rate 	<ul style="list-style-type: none"> - low pace of economic growth - the threat of deflation - zero lower bound risk (ZLB) - threat of a deficit of the balance of payments 	<ul style="list-style-type: none"> - improvement efficiency of market mechanisms 	<ul style="list-style-type: none"> - lack of an adequate response to exogenous shock - the occurrence of the contagion and fragmentation effects at the financial markets.
2	Strategy of promoting economic growth at a moderate level of inflation	<ul style="list-style-type: none"> - gradual increase in nominal income from work and capital - gradual increase in real production - "normal" level of interest rates 	<ul style="list-style-type: none"> - the possibility of non-acceptance of moderate inflation by market participants - increase in inflation expectations - emergence of demands for wage increases 	<ul style="list-style-type: none"> - good economic situation on foreign markets - no threat of a stronger destabilization of the global financial system 	<ul style="list-style-type: none"> - exogenous shock, e.g. a sharp increase in energy resources
3	The strategy of supporting economic growth at a higher level of inflation	<ul style="list-style-type: none"> - fast growth of nominal income and internal demand - faster production and employment growth where the current level of potential production is much lower than the potential level 	<ul style="list-style-type: none"> - the possibility of an uncontrolled increase in prices (launching a wage and price spiral), - currency depreciation 	<ul style="list-style-type: none"> - using the increase in prices and the exchange rate as a "cushion" limiting the impact of external shocks on the economy 	<ul style="list-style-type: none"> - lowering the level of foreign investors' confidence in the domestic economy

Source: Author`s own research.

carried out above indicates the existence of a high probability of coexistence between a policy of low (a priori defined) inflation target and a low economic growth rate. One of the reasons for this coexistence may be the too weak and poorly targeted response of this policy to exogenous shock. A policy aimed at promoting economic growth amid moderate inflation has much greater possibilities to overcome exogenous shocks. Although the effect of this policy are slightly higher inflation rates, it allows to avoid, for example, the threat of the development of the deflation and stagnation process and the Zero Lower Bound problem (Bednarczyk, Misztal, 2016).

The feasibility of a strategy based on promoting economic growth at higher inflation levels depends mainly on the degree of capacity utilization. In the case of high capacity utilization, further stimulation of demand may lead to acceleration of price growth, sharp depreciation of the currency exchange rate, capital outflow and other negative phenomena that may significantly reduce the effectiveness of the government's response to exogenous shocks.

5. Conclusions

Drawing the final conclusions from the above considerations on the strategy of central banks' operation in the conditions of turmoil in global markets, causing effects on the macroeconomic balance (especially price stability) in individual countries (groups of countries), it should be noted that:

- 1) the monetary policy strategies undertaken by the main participants of the world economy, as the leading method of medium-term economic policy, differ quite significantly,

- 2) the differences are based on the mandate of the central bank: it may oblige the bank to strictly adhere to a fixed inflation target, or to control inflation in order to create the best possible conditions for economic growth,

- 3) there are significant differences in the practical understanding of the nature of price stability; in industrialized countries (the euro area, the United States, Japan, United Kingdom) 2% inflation is assumed as an approximation of full price stability, while in other large economies of the G20 (China, India, Brazil) much higher inflation is tolerated as meeting the requirements specifically understood stability,

- 4) depending on the implemented strategy, individual countries and groups of countries react diametrically to exogenous shocks, which may result in different results in terms of economic growth and employment,

- 5) the strategy chosen by the authorities, depending on the duration of its implementation, may have a strong influence on the awareness of market participants regarding its mechanisms and affect the expectations

and course of real economic events, which in turn may reduce the effectiveness and usefulness of traditional tools of state influence on macroeconomic equilibrium (e.g. the effectiveness of changes in short-term official interest rates) and, more broadly, the effectiveness of a medium-term stabilization policy.

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