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General Aspects of Monetary and Fiscal Policy Coordination

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Abstract: The main objective of macroeconomic policy is achieved by using instruments available to its makers, and certainly one of the most important is the one related to monetary and fiscal policy. However, the use of the mentioned instruments is complex, given the fact that they are in the hands of the monetary and fiscal authorities that are separate, and that often have conflicting goals. This is one of the key reasons why it is necessary to establish an appropriate mechanism for coordination among them, which would ensure a synchronized economic policy. That is why there are a number of theoretical and empirical researches that proved the justification of coordination between two key instruments of economic policy. At preventing various imbalances that may arise as a result of inadequate coordination, it is necessary to establish a range of different institutional and operational arrangements, which will, in addition, save the credibility of these policies.

Key words: monetary policy, fiscal policy, coordination, institutional arrangements, operational arrangements.

JEL Classification: E52, E61 and E62

1. Introduction

The main objectives of macroeconomic policy implies the achievement of non inflationary, stable economic growth by using policy instruments, most notably those in the field of monetary and fiscal policy. The implications of the use of policies by the two key stakeholders are often conflicting. Therefore, a need for an adequate coordination mechanism among these holders has emerged as the necessity in order to achieve desired ultimate goals of economic policy.

This is especially important if we take into account the fact that central bank independence was particularly analyzed in the past decades given the fact that it was imposed as a necessity due to the lack of confidence in government anti-inflation policies. Therefore, an independent central bank is seen as an institution that will primarily take care of monetary stability. This implies that economic policy management is analyzed as an interaction between independent monetary and fiscal policy authorities, which often have opposing or conflicting goals.

2. Overview of theoretical studies on monetary and fiscal policy coordination

There are numerous theoretical studies that confirm the necessity of a joint effort between monetary and fiscal authorities to coordinate management tools that are available to them. It is possible to group them in many ways considering the particular segment of the very research that the authors wish to emphasize. For example, seeking an answer to the hypothesis why there is a need for coordination of monetary and fiscal policy when monetary policy is committed to achieving price stability, Lambertini and Rovelli (2005) divide all former theoretical studies into five groups.

In this regard authors dealing with monetary implications of fiscal indiscipline (Sargent and Wallace, 1981) emphasizes that the extent to which the fiscal deficit has been predetermined and unsustainable, monetary policy and price level are no longer exogenous. In this way, these authors have contributed to the emphasis of fiscal discipline as a precondition for monetary stability, which is then easily proved in every empirical sense. Woodford (1995) had similar conclusions in the context of the analysis of so-called fiscal theory of the price level, although fiscal policy objectives are not directly analyzed in these studies, and especially do not include macro stabilization.

The next group of theoretical research of the issues of interaction and coordination of monetary and fiscal policy shows that monetary obligations and implications have the so-called perverse effect on fiscal policy. For example, studies examining a case in which the central bank that is more anti inflationary oriented prove that its orientation has the perverse effect on incentive of the fiscal authorities to reduce the level of debt (Beetsma and Bovenberg, 1999, 2000).

The third group of studies is those that do not share the assumption that decision makers can committed effectively to conduct the monetary and fiscal policy rules-based versus discretionary policy. With regard to this assumption, it should

be emphasized that research shows that distorting fiscal policy causes blockage between the natural and actual output which puts to the test the monetary authority that would otherwise want to stabilize output around the natural level, to resort to inflationary inconsistent policies (Beetsma and Uhlig, 1999).

Other authors come to similar conclusions and, by developing their own models which test the relation between the two mentioned instruments of economic policy, show that fiscal policy holders who have discretionary powers act uncooperative towards the monetary policy holders who run their own policy based on rules, which actually limit the positive side of the use of monetary commitment and monetary policy based on rules. Taking into account these settings, the model at the end indicates that in these circumstances, monetary policy is of the overly contractive character and fiscal policy is not of the sufficiently expansive character.¹

The common denominator of the fourth set of studies is the existence of decentralized fiscal authorities, and the main differences between them come down to assumptions about the function of the goal between monetary and fiscal authorities. For example, on the assumption that the monetary authorities motivated to prevent deviation from the natural level of output as well as the inflation from its targets, and that the fiscal are primarily focused on output, Ulrich (2002) concluded that in this case it may come to pressure on aggregate demand in order to stabilize the output of fiscal authorities, which on the other hand may have inflationary implications that will cause the central bank to raise the interest rates, which ultimately means that the coordination between monetary and fiscal policy would be useful especially in terms of maintaining interest rates at lower levels.

On the other hand, regarding the usefulness of the synchronized and coordinated fiscal and monetary policy, Anderson (2002) shows that the costs of uncoordinated fiscal policies tend to be more pronounced in the case of the so-called major aggregate shocks, while those are significantly lower in case of other smaller shocks. Also, in their research of this issue, Beetsma and Bovenberg (2001) focused on the analysis of cases where monetary and fiscal authorities are not able to bind to the targeted variables and when nominal wages are predetermined, while analyzing the conditions under which this situation leads to the accumulation of public debt, which is of the wasteful character.

¹ For detailed research look at: Dixit, A., and L. Lambertini, Interactions of Commitment and Discretion in Monetary and Fiscal Policies, *American Economic Review* Vol 93, No 5, 2003., p. 1522-1542.

And finally, the fifth group of studies of coordination between monetary and fiscal policy based on the assumption that the main source of interaction between them stems from the fact that both types of economic policies affect aggregate demand and inflation in a similar way. While Buti, Roeger and Weld (2001) by analyzing the interaction between the two policies conclude that this relation should not be interpreted solely in terms of conflict or cooperation between monetary and fiscal policy, but that the relation should be seen as a dependent function of the type of shock with which the economy is facing, with the coordination particularly desirable in cases when the economy is faced with shocks on the supply side, while the opposite is true for shocks occurring in aggregate demand.

Therefore, it is noticeable that there is a wide range of books dealing with the mentioned issues. Bearing this in mind, as well as a large number of studies related to the interaction and coordination between monetary and fiscal policy, the systematization can be done through the recognition of four trends can be singled out (Semmler, Willi & Wenlang Zhang 2004, p. 206-209).

The first is certainly related to the fiscal theory of the price level (Leeper, 1991), (Sims, 1994, 1997, 2001), (Woodford, 1994, 1995, 1998, 2000), which studies the so-called non-Ricardian fiscal policy, which proves that it can change the conditions of stability of monetary policy. It can be concluded that the equilibrium price level must be adjusted to ensure the solvency of the government.

The other trend is related to a series of studies related to the interaction between monetary and fiscal policy at the strategic level. In this regard, they offered concrete solutions to the dynamics of the fiscal deficit, public debt and inflation, in various analyzed frameworks of game theory (Van Aarle, 1995), (Buti et al., 2000), (Wyplosz, 1999), (Aarle et al., 2002).

The third one, unlike the others, has an empirical character. Within it can be distinguished works are devoted to the interaction between the two policies in individual countries (Melitz, 1997, 2000), (Van Aarle et al., 2001), (Muscatello et al., 2002), (Smaghi and Casini, 2000).

And finally, the fourth is a tendency that can be extracted from a variety of papers on the interaction of monetary and fiscal policy analyzed in models related to two or more open economies (Leith and Wren – Lewis, 2001), (Melitz, 2000), (Van Aarle et al., 2002), (Chamberlin et al., 2002). Special attention is paid to it in the analysis of the interaction between the countries of the European Monetary Union.

On the other hand, in recent studies particular emphasis on the problem of coordination between monetary and fiscal policies in the countries of the monetary union (Cooper and Kempf, 2000), (Beetsma, Debrun and Klaassen, 2001), (Buti, Roeger and Veld, 2001), (Beetsma and Jensen's, 2004), (Van Aarle, Di Bartolomeo, Engwerd and Plasmans, 2004), (Engwerd, Aarle and Plasmans, 2002), (Dixit and Lambertini, 2003), (Plasmans, Engwerd, Van Aarle, Di Bartolomeo and Michalak, 2005).

In addition to the previously mentioned criteria for grouping similar researches in this area, it should be noted that the principle has been used in the literature, which is based on the fact that the models developed in recent years, dealing with the role of monetary policy in the current environment, which often has a stochastic character, in which the role of fiscal policy is incorporated as well as the analysis of their interactions. In this regard, a lot of theoretical material has been developed taken into consideration either models based on a closed economy (Woodford, 2003), or those dealing with an open economy (Obstfeld and Rogoff, 2000, 2002), (Corsetti and Pesenti, 2001), (Devereaux and Engel, 2000). The mentioned studies are important because they developed a kind of methodology to be used in very recent literature that analyzes the case of an open economy, which includes the function of being based on an aggregate (overall) utility, which on the other hand shows an explicit dependence on welfare of different policy instruments on the basis of which it is possible to do calculations with the results of equilibrium for a wide range of the so-called cooperative and non-cooperative modes.²

A considerable number of authors (Leith and Lewis, 2000), (Schmitt - Grohe and Uribe, 2001), (Benigno and Woodford, 2003) examined the interaction between monetary and fiscal policy using new Keynesian dynamic stochastic general equilibrium model (DSGE), (Muscatelli, Ropele & Tirelli 2004, p. 2), among which there are three types - the Solow model, the Ramsey model and the so-called overlapping generations model.³ Moreover, apart from the conventional dynamic, new Keynesian DSGE models are developed in the literature, the so-called new Keynesian structural DSGE models, which take into account a richer range of fiscal channels, and using this models some authors conclude that the automatic stabilizers that are used in the tax system are combined more effective-

² For a detailed research see: Giovanni Lombardo and Alan Sutherland, Monetary and Fiscal Interaction in Open Economics, European Central Bank Working Paper Series, Working Paper No. 289., 2003.

³ For detailed research of DSGE models see: Burkhard Heer and Alfred Maußner, *Dynamic General Equilibrium Modeling - Computational Methods and Applications*, Springer, 2009.

ly with monetary policy based on the rules compared to public spending policy based on rules (Muscatelli et. al. 2004, p. 26).

3. The need for coordination of monetary and fiscal policy

Taking into account the fact that an economy is a complex dynamic system which is influenced by a multitude of factors whose number is constantly increasing, which makes it unstable, the coordination of macroeconomic policies, especially monetary and fiscal policy is a necessity of modern developments. This is especially important in the light of the fact that the abandoned Keynesian - monetarist controversy based on the affirmation of one instrument of economic policy at the expense of another and thus generating a need for permanent checking and analysis of the mechanism of combined application of instruments and measures of monetary and fiscal policy, given that no proper interaction between them exists, we can hardly talk about any purposeful and effective economic policy.

The problem becomes more evident in the light of the fact that monetary and fiscal policy, while conducted by separate and relatively independent institutions, so related to one another, it is often very difficult to make a distinction between them, and with complete precision to answer to what extent it is an effect of the one policy, and where the effect of the other begins. However, it should be noted it is certain that based on its interconnectedness the interdependence between them is evident.

Monetary policy impact on interest rates and their term structure, inflation and inflation expectations have significant fiscal consequences. The level of interest rates, in addition to its numerous implications in an economy, reflects its direct impact on fiscal policy through the cost of servicing the public debt affecting the calculation of its sustainability in the country. On the other hand, the volatility of interest rates may be one of the factors that can affect the fluctuation of the required level of surplus that would be sufficient to stabilize the relation between debt and output. Finally, high inflation is another factor that causes many implications on the public finances of economy, starting from an increase in the actual tax burden, stimulating the occurrence of so-called Olivera-Tanzi effect which is reflected in deterioration of taxes and expressed tendency to defer the payment of taxes, the creating of pressure on the expenditure side of the budget due to increased transfer of public expenditures, and generally prevents the making of any accurate fiscal projection for the future.

On the other hand, fiscal policy affects monetary policy through a variety of direct and indirect channels. The most important is certainly the fact that expansionary fiscal policy can result in large fiscal deficits, which may present a challenge for the government to put pressure on the monetary authorities to monetize the deficit, promoting an expansive monetary policy, rising inflation expectations, disrupting the exchange rate, causing a problem with payment balance, and finally with the ability to influence the formation of a currency or financial crisis. In this regard it is important to note that there are no relevant studies in the literature to confirm a strong empirical (cross-country) correlation between a high debt and high inflation.⁴ It is also useful to emphasize that the fiscal theory of the price level (Leeper, 1991), (Simms, 1994, 1999), (Woodford, 1995, 1997, 1998), (Cochrane, 2001) shows that the public sector budget constraints imposed several restrictions on monetary and fiscal variables. According to this theory, the present value budget constraint determines the equilibrium price level in a way that if the expected discounted net down surplus or deficit of the state is not identical to the unpaid claim, the price level must be changed so as to establish the mentioned equality (Chadha & Nolan 2003, p. 4).

If, however, the fiscal deficit is not covered by its own monetization but is financed in the market, it may also cause a concern for monetary authorities because of the crowding-out effect that can ultimately undermine economic growth and development, while on the other hand, external financing of domestic deficit caused by expansionary monetary policy, could cause problems with the exchange rate and the balance of payments, which is also one of the problems that the monetary authorities may face. The more direct channel through which fiscal policy can affect the monetary policy is the effect of indirect taxes impacting the price level, causing a potential spiralling of wages and prices, and ultimately influencing the rate of inflation. Not to mention the fact that the unsustainably high public spending, enormously generous transfers and inefficient tax system could be a factor that could not only affect the potential output, but also cause a more restrictive monetary policy as the monetary response to the above mentioned situation.

Changes in fiscal policy also affect monetary policy through a direct impact on aggregate demand. Changes in tax levels affect company profits and their disposable income, and therefore their consumption and investment decisions, which could have repercussions on inflation. Another way in which fiscal

⁴ Look at for example: Marta Campilo and Jeffrey Miron, Why Does Inflation Differ Across Countries? In: Monetary Policy and Low Inflation, Christina D. Romer and David Romer (eds.), The University of Chicago Press, 1997.

policy can affect inflation is the impact of the fiscal effect on potential output in a way that lower income taxes can be one of the factors that will affect the creation of new companies, which ultimately may increase the potential output (Binay 2003, p. 247).

Moreover, in addition to these direct channels, fiscal policy makes an impact on monetary policy and the indirect channel, which is manifested through the perception and expectations. This is the way that expectations of large budget deficits and significant borrowing to cover it can undermine confidence in the prospects of an economy, which will on the other hand cause an increased risk in financial markets and thereby act as a destabilizing factor in the foreign exchange market, achieving the final pressure on the very monetary policy order that is in place. Another indirect channel through which they can make an impact on fiscal monetary policy can be the phenomenon known in the literature as the Ricardian equivalence where the financial behaviour of economic agents depends on the perception of a country's fiscal sustainability, which ultimately may well affect the monetary disturbance and other projections. In addition, the financial markets may also be an important area for coordination between monetary and fiscal policies, because the link between monetary and fiscal policy can largely depend on the level of development of financial markets.

The interaction of these policies is particularly obvious when one wants to make an impact on the economic cycle in order to achieve macroeconomic stability and desired economic growth, and coordination in the field of economic growth is encouraged by regulating demand and eliminating instabilities occurring in the system, with the aim of achieving price stability as well as internal and external balance. Also, one of the important aspects of the interaction between monetary and fiscal policy is the need for a high degree of coordination in response to the financial crisis, which has recently been challenged by the events that occurred especially starting since 2007.

The importance of coordination influenced by the fact that monetary and fiscal policy can determine many different economic values such as the level and structure of savings, investment, production, employment, and the balance of payments. The amount of taxes, the tax system type, the size and structure of public expenditure policies, budget surplus or deficit, as well as its financing on the one hand, and a change in the quantity of money in circulation, the level and structure of credit and cost of credit, on the other hand, represent a significant determinants of not only the level of prices and the exchange rate, but also the structure of production and employment in an economy.

The fact that after a period of “great moderation” a crisis that has caused the biggest economic contraction since the Great Depression occurred, and that it caused the need to review strategies, effects, and in general the role of monetary and fiscal policy given the fact that the confidence in the holders of these policies is seriously undermined, does not in any way diminish, but rather increases the importance of coordination, because the question is not whether to use simultaneous instrumentation of monetary and fiscal policy, but how to coordinate them and direct them towards the desired target variables. In this sense, in order to achieve the main goals which are set before the macroeconomic policy, and that is one of sustained economic growth and price stability and a sustainable balance of payments, the key is close to the level of coordination among decision makers in the field of monetary and fiscal policy, since their final effects depend on how the measures taken in any of these policies affect the other. Therefore, the lack of coordination of these policies will lead to financial instability, dragging with it an increase in interest rates, the pressure on the exchange rate, inflation, and ultimately will have a negative impact on economic growth.

Thus, the goal of economic policy orientation has a strong influence on decision-making about the appropriate combination of these instruments, which means that the coordination of these policies is of great significance for the effects of overall economic policy, which are mainly directed towards restoring the economy at or near steady state. This means that the so-called inconsistent and uncoordinated policy -mix leads to poor economic performance of an economy, which ultimately strongly confirms the importance of this coordination.

Therefore Hanif and Farooq (2008, p. 3), classify the basic reasons that explain the need for coordination between monetary and fiscal policy:

- Establishment of internally consistent and mutually aligned goals of monetary and fiscal policy measures towards non-inflationary stable growth;
- Facilitate the effective implementation of previous decisions made in order to achieve the set objectives of monetary and fiscal policy through the exchange of information and conducting consultations aimed in that direction;
- Influencing the monetary and fiscal policy to adopt sustainable policies.

Taking this approach into account, it can be concluded that coordination should be established at two levels in the short and long term. When it comes to short term, coordination is carried out in order to create conditions for achieving price stability, where the emphasis is on the proper management of monetary policy and public debt, which largely determine the previously mentioned requirement.

On the other hand, in the long term it is necessary to set appropriate policy-mix, which should be a precondition for a quality approaching equilibrium level of the economy as well as the basis for a stable and sustainable economic growth, which will certainly be previously established if the level of the fiscal deficit in that period of time needs to be challenged for its monetization by the central bank and unsustainable increase in internal or external public debt.

Areas where functional and institutional interdependence between the policies is especially expressed are the question of financing the budget deficit, the manner of use of assets arising from the budget surplus and management of public debt. However, despite the existence of consensus on the need for synchronized use of instruments in available to the holders of these policies, the problem arises when you need to answer which instruments have priority when it comes to solving individual problems.

Coordination of monetary and fiscal policy, otherwise designed by different government bodies that have their own goals, strengths and weaknesses, and limitations and resources, can be based on permanent contacts between holders of the two policies directed towards making joint decisions about strategies, effects and measures of these policy instruments. If the fiscal authorities are aware of the function of the monetary policy and its formal and informal analytical model, they will be able to anticipate the response of monetary policy in each fiscal action, and to adapt to future action. In this sense, the effect of the mentioned interaction must result in the monetary authorities' anticipating each new fiscal initiative and responding to each fiscal impulse or incorporating fiscal plans in their estimates of future interest rate movements directed towards achieving the above mentioned goals. Also, fiscal authorities would have to take into serious consideration the response of monetary policy, prior to making final decisions, possibly combined with initiatives that are planned in the future. In addition, coordination may be based on the previously adopted series of policies and procedures that the decision makers will have to comply with, reducing the need for frequent interaction between them, resulting in the same effect as in the previous case. In any case, the way in which the coordination will be established depends primarily on a number of specific factors typical for each country, and the level of their institutional development.

4. Institutional and operational arrangements

One of the problems that may arise during the implementation of monetary and fiscal policy is the conflicting character of the goals that each of them is trying to accomplish. A precondition for solving the mentioned as well as a number of other problems that can accompany this policy is the existence of effective coordination among them, which usually depends on the development of financial markets, central bank independence and transparency of fiscal policy. In order to achieve better sharing of the information as well as better coordination among the holders of these policies, informal and formal or explicit and implicit solutions are established. Explicit solutions applied in the countries that do not have a tradition of proper functioning of financial markets and that lack the market depth and instruments that are traded, while the implicit solutions are applied to accelerate coordination. Therefore, the IMF has developed two important standards related to the central bank and fiscal agents, which are an important aspect of delineation, and therefore better coordination between monetary and fiscal policy.

However, in the case of a perfect functioning of financial markets and the absence of imperfections that would disturb the achievement of efficient outcomes, virtually no coordination problem would exist. However, as the perfect market is a purely theoretical category, it is necessary to establish various institutional and operational arrangements aimed at prevention of macroeconomic imbalances that can occur in an economy as a result of inadequate coordination. These arrangements will help preserve the credibility of these policies, as they represent the precondition for preventing deviations that may occur, which are related to the deviation of realized variables of policy goal.

Taking the above mentioned into account, it should be noted that there are various forms of institutional and operational arrangements which adequacy varies from country to country depending on a range of factors. So, Laurens and Piedra (1998, p. 17-21) distinguish several different recommendations and arrangements to be implemented in order to strengthen the coordination between monetary and fiscal policy:

- Arrangements for the independence of the central bank;
- Arrangements for conflict prevention and resolution;
- Arrangements that limit direct loans of the central bank to the country;
- Arrangements for a balanced budget or limited deficit;
- The currency board arrangement.

Theoretical arguments and international experience supports the notion that countries with more independent central bank in principle achieve better results than those who are less independent, in a sense that achieving low inflation is not the result of having had a cost of lower economic growth and employment levels. Central bank independence is an institutional tool to optimize contribution and to achieve the objective of economic policy related to economic management directed towards achieving high long-term real rate of GDP growth, high employment and low volatility of these variables, while the main theoretical argument for an independent central bank is that the long-term high rate of economic growth requires price stability, and the central bank more motivated to deal with it (Schwödiauer, Komarov & Akimova 2006, p. 4).

The establishment of an independent central bank, immune to different kinds of pressure, directed towards threatening price stability for short-term increase output, as a long-term precondition of effective monetary policy, does not mean absence from its coordination with the fiscal authorities. In fact the success of monetary policy largely depends on effective coordination between the holders of these segments of the economic policies. Therefore, central bank independence does not imply absolute independence in the literal sense, but above all, the willingness and ability to withstand any kind of pressure that could result in deterioration of its ultimate goal.

Empirical confirmation of benefits of independent central banks are associated with a number of studies addressing this issue, confirming the link between independence and economic performance achieved in economies where such central banks operate, which are particularly related to the correlation between central bank independence and long-term inflation and the budget deficit as a GDP percentage. A connection that is also established between the independence of the monetary authority and fiscal policy comes down to the fact that independent central banks have greater credibility, which in fact is an important factor that affects the fiscal position, and ultimately prevents the possibility of direct financing of the public debt, which is of particular importance (Dahan 1998, p. 15-17).

Restriction of credit support from a country's central bank is the key segment of the central bank independence. Therefore, the mentioned limitations are actually a result of its independence and credibility, which ultimately means that the very independence is significant for the implicit coordination between monetary and fiscal authorities. Otherwise, unlimited lending to the government by the central bank would cause the subordination of the monetary policy, as well as the politics of public debt of the country. In this case there is a

situation in which economic policy is as deep as a successful fiscal policy, while the central bank would lose credibility, which would almost certainly impact price stability.

For the benefit of scientific correctness, it is useful to emphasize that there are authors who indicate that in addition to those standard arguments normally used to show the other side of central bank independence, there are arguments that are not in favour of an independent monetary authority because of the coordination between monetary and fiscal policy. Specifically, this research shows that independence could result in a conflict between monetary and fiscal authorities or problems that could possibly arise in the areas of public debt management, policies of financing the public debt, exchange rate management and policies to preserve the stability of banking. However, the results obtained on the basis of these studies are not intended to ultimately deny the importance of central bank independence, but only to point to potential problems that could possibly arise in this respect (Mas 1995, p. 1462-1464).

However, besides the fact that awareness of the importance of establishment of an independent central bank is at a high level, as it is an important precondition for the ultimate goal of monetary policy, it is necessary to develop those arrangements that will prevent deviations that could occur as a result of the lack of central bank independence and its inability to cope with fiscal authorities. Therefore, it should be noted that in order to prevent inconsistencies that might arise between monetary and fiscal policies, arrangements that include limiting the central bank loans to state should be developed, as well as balanced budget or limited deficit, and finally the establishment of the coordination committees.

The above mentioned committees or working groups, which mandate, status and operations may vary by the country, can play an important role when it comes to resolving potential conflicts between monetary, fiscal and government debt management agency' goals. The possibility of conflict between the holders of these policies is significantly reduced if the monetary authorities have necessary independence and autonomy in their work. However, if there is an inconsistency between the policies, it is necessary to start conflict resolution, which in essence means that unreasonably expansive character of one of these policies would cause the restrictive character of the other policy as a counter measure, and vice versa, with the aim of achieving ultimate goals of economic policy.

It was mentioned earlier that an important indicator of the independence of monetary authorities is the amount of direct loans to the state, and the pressure is certainly greater if the securities market is underdeveloped. In that case, the

credit support provided by the central bank is the only way of domestic financing of the state. Abuse of the mentioned domestic financing should be prevented by institutional arrangements, in order to maintain the independence of the central bank, and thus increase the likelihood of achieving low and stable inflation in the long run. It should be emphasized that the countries that have a longer and better tradition of coordination tend to restrict direct credit support for the state by the central bank, while the indirect lending (securities trading in the secondary market, repo arrangements, etc.) is allowed since it is an important instrument for liquidity management in the country. True, there are informal restrictions to indirect form of state funding, which is generally implemented in a way that limits the use of these operations on the market for the purposes of monetary policy, preventing the transfer of seigniorage to the state, and the like.

Inevitable question of limiting both direct and indirect credit support of the central bank to the state is the possibility of avoiding it. The most commonly used form of avoiding these forms of credit support is to use intermediaries that have access to central bank, borrow funds from the central bank and then transfer them to the state. The problem is that it is not easy to avoid this practice since, in terms of controlling the intermediaries by the state, it is impossible to restrict the access to central bank. The problem is smaller if the central bank operates in the market, because the intermediaries then come up with the funds in the way they pay the market price, resulting in a situation where banks wishing to provide more money for the state have to offer a higher price for the same money, which finally cause price increase of funds which make them less attractive for the state (Cotareli 1993, p. 22).

The way to achieve full institutional independence of the central bank is certainly the treatment of its gains or losses. It is also something that some authors see as an important institutional solution that contributes to a more successful coordination of the monetary and fiscal policy.

Despite the existence of institutional arrangements related to monetary policy, there are arrangements that promote fiscal discipline, which is related to the balancing of the budget or the limitation of the government deficit. For that reason, many countries reached for fiscal rules, the observance of which is the obligation of the state, resulting in the safety of public finances. According to Laurens and Piedra (1998, p. 20), the key to achieving effectiveness of these arrangements is in avoiding pitfalls that arise as a result of non-budgetary transactions, pension arrears and other future liabilities and quasi-fiscal operations.

The need to establish institutional arrangements for the promotion of fiscal discipline becomes more pronounced in light of the fact that one of the consequences of the economic crisis is the motivation of a large number of states to affect the stimulation of economic growth and increase the liquidity of the financial markets by increasing public spending and aggregate demand. Regardless of the type of measures used by a state, each of them has resulted in increased public spending, which is usually accompanied by a drop in public revenues, which ultimately causes a significant increase in the budget deficit expressed as a percentage of GDP. In response to the above mentioned situation, the most developed countries at some point adopted budget rules that limit the amount of the deficit as a percentage of GDP, and total public debt.

According to the International Monetary Fund, in early 2009, there were 90 countries with national or supra-national budgetary rules, including 21 developed countries, 33 developing countries and 26 low income countries. Regarding this, there is a tendency the tendency to give up one rule and to combine more rules. It should be noted that, in principle, a balanced budget rule is applied (in a particular business cycle rather than annually), limiting public debt as a percentage of GDP, public spending limit (limit that applies to the total, current or primary energy in absolute terms, growth rates and percentage of GDP) and the rules relating to income (establishing the upper and lower income limits, which is aimed at increasing fee as well as preventing excessive fiscal burden), (Jackson 2011, p. 17-23). However, despite the fact that there are numerous benefits for institutional arrangements that support a balanced budget and limiting the deficit, there are studies that show that fiscal policies induce pro-cyclical fiscal policy (North, 2000), (Bouthevillain et al., 2001), (IMF, 2004).

Regarding this, some studies prove that limits on deficit -output ratios encourage the implementation of pro-cyclical policies, and counter-cyclical policies in very good or very bad conditions. Fiscal policy is of pro-cyclical character because the government holds deficit just below the limit to avoid a sanction for non-compliance. According to these studies, the optimal fiscal rule would imply a mechanism in which the state during the “good times” accumulates money surplus, which is used to cover the deficit when it is needed during the “bad times” (Manesse, 2007).

Arrangement that may also impact the increase of the credibility of monetary policy is the currency board, which is normally the monetary and foreign institution that issues banknotes and coins that is completely converted to a foreign or “reserve” currency at the permanently fixed exchange rate, generally determined by the parliament. This, on the other hand, means that the above arrangement

implies complete coverage of domestic currency by foreign reserve currency in order to maintain a fixed exchange rate, which is why it is a significant constraint on the monetary and fiscal policy, and thus the limit for the potential macroeconomic instability that may arise. The currency board represents an arrangement that gives credibility to the economic policy when its reputation is low, which is otherwise often disrupted due to problems with inflation, exchange rates or severe fiscal deficits that are present in the economy. In addition to enabling the currency and price stability and limiting the budget deficit, it is particularly recommended to small and open economies that do not have adequate knowledge of central banking, do not have well-developed financial markets and want to enhance the presence of trade and foreign investments by increasing the credibility of economic policy since it guarantees the same high level of transparency because of the simple monetary rule, which decreases the possibility of abuse by economic policymakers.

However, despite numerous advantages that the currency board provides, there is significant number of studies that highlight its weaknesses. Some of them even suggest that their implementation is more likely to cause damage to an economy rather than to affect the enhancement of long-term economic performance (Roubini, 1998). Otherwise, the debate about the shortcomings of this arrangement is similar to the debate on the advantages and disadvantages of fixed and flexible exchange rates. In other words, the opting for or against the currency board is essentially the choice between flexibility and credibility.

One of its biggest weaknesses is certainly the fact that it is impossible to conduct an effective independent monetary policy, disabling the function of the “lender of last resort”, depriving the central bank of the possibility to lend money to the state or financial institutions in times of deficit in the economy, the inability to control the flow of money, capital and foreign direct investment and eliminating the consequences of the fall in interest rates and the potential consumer and credit bubbles that may therefore arise.

That is why Batsaihkan (2009) concludes that the use of a currency board can be extremely harmful in the long run if it is not accompanied by structural changes that transitional economies will apply, taking into account the fact that the exit strategy in both, political and economic terms, can be extremely expensive. When they talk about exit strategy, Wolf, Ghos, Berger and Gulde (2008) proved in their research that in most modern currency boards, it does not contain explicit rules for fear of undermining confidence, which is why the example of Turkey and the events that occurred there are an overemphasized example of the exit strategy.

In addition to the above-mentioned arrangement, which Laurens and Piedra (1998) insist on, the literature emphasizes the need for guidance and other arrangements particularly in developed countries, which should result in more effective coordination, despite the fact that the financial markets in these countries are developed and the coordination among policy is achieved largely through the operation of market laws. In this sense, Hanif and Farooq (2008) emphasize the importance of establishing formal or informal coordination committee or group that usually consists of key decision makers in ministries of finance and central banks, to coordinate monetary and public debt management policy. These bodies, which otherwise may have a different form and organizational structure are to review different strategies that should contribute to achieving the objectives of monetary policy and public debt management.

5. Conclusion

The establishment of appropriate coordination mechanisms and instruments of monetary and fiscal policies is the precondition for achieving the ultimate aims of the two policy holders, since otherwise, the holders of separate policies and mutually conflicting goals, would cause divergent macroeconomic trends. The Great Depression, which occurred after a period of “great moderation” and which significantly undermined confidence in the monetary and fiscal authorities, did not in any way diminish, but increased the importance of having adequate coordination. This is because the issue here is not the simultaneous use of one at the expense of another instrument of economic policy, but the focus shifts to the method of establishing the coordination.

In this regard, there is extensive literature that confirms the necessity of establishing an adequate interaction between monetary and fiscal authorities, which in various ways may be grouped, and from which one can identify several trends, which range from the fiscal theory of the price level, through the strategic interaction of monetary and fiscal policy coordination models for testing related to two or more open economies, to coordination between the monetary and fiscal policies in a monetary union, and the new Keynesian dynamic general equilibrium model.

In this sense, the influence of monetary on fiscal policy through its impact on interest rates, their term structure, inflation and inflation expectations, and the impact of fiscal on monetary policy achieved through a range of direct and indirect channels are obvious. In order to create conditions for the establishment of effective coordination between the most important economic policy instruments,

it is necessary to establish institutional and operational arrangements in order to prevent the occurrence of macroeconomic disturbances arising as a result of inadequate coordination. The same can apply to arrangements related to central bank independence and involving the prevention and crisis management, limitation of direct loans to support the central bank, a balanced budget and limiting deficit for the establishment of the currency board, or the existence of formal or informal committee for the coordination of monetary policy and public debt management.

References

1. Andersen, T. (2002) Fiscal Stabilization Policy in a Monetary Union with Inflation Targeting. CEPR *Discussion Paper* No. 3232.
2. Batsaikhan, Uuriintuya. (2009) Divergent Paths of inflation Stabilization: The Role of Currency Boards Arrangements (CBAs) Case Comparison of Estonia and Poland. Central European University, Department for International Relations and European Studies.
3. Beetsma RMWJ, and Jensen H. (2004) Monetary and fiscal policy interactions in a microfounded model of a monetary union. University of Copenhagen, Mimeo.
4. Beetsma, R. and H. Uhlig. (1999) An Analysis of the Stability and Growth Pact. *The Economic Journal*.
5. Beetsma, R., and A.L. Bovenberg. (1999) Does Monetary Unification Lead to Excessive Debt Accumulation? *Journal of Public Economics*, 74.
6. Beetsma, R., and A.L. Bovenberg. (2001) Structural Distortions and Decentralized Fiscal Policies in EMU. CEPR *Discussion Paper* No. 2851.
7. Beetsma, R., and A.L. Bovenberg. (2001) Structural Distortions and Decentralized Fiscal Policies in EMU. CEPR *Discussion Paper* No. 2851.
8. Beetsma, R., Debrun, X., and F. Klaassen. (2001) Is Fiscal policy coordination in EMU desirable? *Swedish Economic Policy Review* 8.
9. Benigno, P., and M. Woodford. (2003) Optimal Monetary and Fiscal Policy: a Linear-Quadratic Approach.
10. Binay, Şükrü. (2003) Some issues in fiscal policy and central banking: the case of Turkey. *BIS Papers* No 20.
11. Bouthevillain, C., P. Cour-Thimann, G. Van den Dool, P. Hernandez de Cos, G. Langenus, M. Mohr, S. Momigliano, and M. Tujula. (2001) Cyclically Adjusted Budget Balances: An Alternative Approach.” *ECB Working Paper* No. 77, Frankfurt, European Central Bank
12. Buti M, Roeger W, and Jan In't Veld. (2001) Stabilizing output and inflation: policy conflicts and coordination under a stability pact. *JCMS: Journal of Common Market Studies*.
13. Buti M, Roeger W, and Jan In't Veld. 2001. Stabilizing output and inflation: policy conflicts and coordination under a stability pact. *JCMS: Journal of Common Market Studies*.
14. Buti, Marco, Roeger Werner, and Jan in t Veld. (2000) Monetary and Fiscal Policy Interactions under the Stability Pact. Manuscript. Directorate General for Economic and Financial Affairs. European Commission.
15. Campilo, Marta, and Jeffrey Miron. (1997) Why Does Inflation Differ Across Countries? In: *Monetary Policy and Low Inflation*, Christina D. Romer and David Romer (eds.), Chicago: The University of Chicago Press.

16. Chadha, S. Jagjit, and Charles Nolan. (2003) On the Interaction of Monetary and Fiscal Policy. DAE *Working Paper* No. 0303.
17. Chamberlin, Graeme, Stephen Hall, Brian Henry, and David Vines. (2002) Coordinating Monetary and Fiscal Policies in an Open Economy. Manuscript. Management School. Imperial College London. Centre for International Macroeconomics. Oxford University.
18. Cochrane, J. (2001) Long term debt and optimal policy in the fiscal theory of the price level." *Econometrica*, Volume 69, Issue 1.
19. Cooper R, and Kempf H. (2000) Designing stabilization policy in a monetary union. *NBER Working Paper* No. 7607.
20. Corsetti, Giancarlo, Pesenti, Paolo. (2001) International dimensions of optimal monetary policy. Federal Reserve Bank of New York Staff Report No. 124.
21. Cotareli, Carlo. (1993) Limiting Central Bank Credit to the Government – Theory and Practise. International Monetary Fund, *Occasional Paper*.
22. Dahan, Momi. (1998) The Fiscal Effect on Monetary Policy. International Monetary Fund, Monetary and Exchange Affairs Department, *Working Paper*. No. 66.
23. Devereaux, M.B., and C. Engel. (2001) Monetary Policy in an Open Economy Revisited: Price Setting and Exchange rate Flexibility. *NBER Working Paper* No 8423.
24. Dixit, A. and L. Lambertini. (2003) Interactions of Commitment and Discretion in Monetary and Fiscal Policies. *American Economic Review* 93.
25. Dixit, A. and L. Lambertini. (2003) Interactions of Commitment and Discretion in Monetary and Fiscal Policies." *American Economic Review* 93.
26. Engwerda, J. C., van Aarle, B. & Plasmans, J. (2002) Cooperative and non-cooperative fiscal stabilization policies in the EMU. *Journal of Economic Dynamics and Control* 26.
27. Hanif, N. Muhammad, and Arby M. Farooq. (2008) Monetary and Fiscal Policy Coordination. *MPRA Paper* No. 10307.
28. Heer, Burkhard, and Alfred Maußner. (2009) *Dynamic General Equilibrium Modeling - Computational Methods and Applications*, Springer.
29. International Monetary Fund. (2004) Measuring Fiscal Stance and Stabilizing Role of Fiscal Policy. (Unpublished; Washington).
30. Jackson, K. James. (2011) Limiting Central Government Budget Deficits: International Experiences. Congressional Research Service.
31. Lambertini, L., and R. Rovelli. (2005) Monetary and fiscal policy coordination and macroeconomic stabilization. A theoretical analysis. Dipartimento di Scienze Economiche Universit'a di Bologna.

32. Laurens, Bernard, and Enrique G. de la Piedra. (1998) Coordination of Monetary and Fiscal Policies. International Monetary Fund, Monetary and Exchange Affairs Department, *Working Paper*
33. Leeper, E. (1991) Equilibria under Active and Passive Monetary Policies. *Journal of Monetary Economics*, Vol 27., No.1.
34. Leith, C., and S. Wren-Lewis. (2000) Interactions between monetary and fiscal policy rules.” *The Economic Journal*, 110.
35. Leith, Campbell and Simon Wren-Lewis. (2000) Interactions between Monetary and Fiscal Policies. *The Economic Journal* 110.
36. Lombardo, Giovanni, and Alan Sutherland. (2003) Monetary and Fiscal Interaction in Open Economics. *European Central Bank Working Paper Series*, Working Paper No. 289.
37. Manesse, Paolo. (2007) Deficit Limits and Fiscal Rules for Dummies. International Monetary Fund, Vol. 54, No. 3, *IMF Staff Papers*.
38. Mas, Ignacio. (1995) Central Bank Independence: A critical View from Developing Country Perspective.“ The World Bank Washington DC, *World Development*, Vol 23., No. 10.
39. Melitz, Jacques. (1997) Some Cross-country Evidence about Debt, Deficits and the Behavior of Monetary and Fiscal Authorities. *CEPR Discussion Paper* No. 1653.
40. Melitz, Jacques. (2000) Some Cross-country Evidence about Fiscal Policy Behavior and Consequences for EMU. Manuscript. University of Strathclyde. *CREST-INSEE and CEPR*.
41. Melitz, Jacques. (2000) Some Cross-country Evidence about Fiscal Policy Behavior and Consequences for EMU. Manuscript. University of Strathclyde. *CREST-INSEE and CEPR*.
42. Muscatelli, V. Anton, Patrizio Tirelli, and Carmine Trecroci. (2002) Monetary and Fiscal Policy Interactions over the Cycle: Some Empirical Evidence. Manuscript.
43. Muscatelli, V. Anton, Tiziono Ropele, and Patrizio Tirelli. (2004) Fiscal and Monetary Policy Interactions in a New Keynesian Model with Liquidity Constraints. University of Glasgow and CESifo, Munich.
44. Obstfeld, M., and K. Rogoff. (2000) New Directions for Stochastic Open Economy Models. *Journal of International Economics*, 117.
45. Obstfeld, M., and K. Rogoff. (2002) Global Implications of Self-Oriented National Monetary Rules. *Quarterly Journal of Economics*, 117.
46. Plasmans J., Engwerda J.C., Van Aarle B., Di Bartolomeo G., and Michalak T. (2005) Dynamic modeling of monetary and fiscal cooperation among nations. Springer, Berlin.

47. Roubini, Nouriel. (1998) The case against Currency Boards: Debunking 10 Myths About the Benefit of CBs.“ Stern School of Business, New York University.
48. Sargent, T.J., and N. Wallace. (1981) Some Unpleasant Monetarist Arithmetic. *Quarterly Review*, FRB of Minneapolis, fall 1981 (Reprinted in *Rational Expectations and Inflation 2nd Edition* NY: Harper Collins College Publishers 1993).
49. Schmitt-Grohe, S., and M. Uribe. (2001) Optimal Fiscal and Monetary Policy Under Sticky Prices. *NBER Working Paper* No. 9220.
50. Schwödiauer, Gerhard, Komarov Vladislav, and Iryna Akimova. (2006) Central Bank Independence, Accountability and Transparency: The Case of Ukraine. *FEMM Working Paper Series*, No. 30.
51. Sims, C. (1994) A Simple Model for the Study of the Price Level and the Interaction of Monetary and Fiscal Policy. *Economic Theory*, Vol. 4, No. 3.
52. Sims, C. (1999) The Precarious Fiscal Foundations of EMU. *De Economist*, Vol. 147, No. 4.
53. Sims, Christopher A. (2001) Comment on Sargent and Cogley's Evolving U.S. Postwar Inflation Dynamics. Manuscript.
54. Smaghi, Lorenzo B. and Claudio Casini. (2000) Monetary and Fiscal Policy Cooperation: Institutions and Procedures in EMU. *Journal of Common Market Studies*.
55. Uhlig, H. (2002) One Money, But Many Fiscal Policies in Europe: What Are the Consequences? *CEPR Discussion Paper* no. 3296.
56. Van Aarle B., Di Bartolomeo G., Engwerda J., and Plasmans J. (2004) Policy-makers' coalitions and the stabilization policy in the EMU. *Journal of Economics*.
57. Van Aarle, Bas, Harry Garretsen, and Niko Gobbin. (2001) Monetary and Fiscal Policy Transmission in the Euro-area: Evidence from a VAR Analysis. Manuscript.
58. Van Aarle, Bas, Jacob Engwerda, and Joseph Plasmans. (2002) Monetary and Fiscal Policy Interaction in the EMU: A Dynamic Game Approach. *Annals of Operations Research* 109.
59. Van Aarle, Bas, Lans Bovenberg, and Matthias Raith. (1995) Monetary and Fiscal Policy Interaction and Government Debt Stabilization. Manuscript.
60. Wolf, C. Holger, Ghosh, R. Atish, Berger, Helge, and Anne-Marie Gulde. (2008) Currency Boards in Retrospect and Prospect. Massachusetts Institute of Technology.
61. Woodford, M. (1995) Price Level Determinacy without Control of a Monetary Aggregate. *Carnegie Rochester Conference Series on Public Policy*, 43.
62. Woodford, M. (1995) Price Level Determinacy without Control of a Monetary Aggregate. *Carnegie Rochester Conference Series on Public Policy*, 43.

63. Woodford, M. (1997) Control of the Public Debt: A requirement for Price Stability?”, in *The Debt Burden nad Monetary Policy*, eds: G. A. Calvo, and M. A. King, MacMillan, London.
64. Woodford, M. (1998) Public Debt and the Price Level. Princeton University
65. Woodford, Michael. (1994) Monetary Policy and Price Level Determinacy in a Cash in advance Economy. *Economic Theory*.
66. Woodford, Michael. (2000) Fiscal Requirements for Price Stability. Manuscript. Princeton University.
67. Wyplosz, Charles. (1999) Economic Policy Coordination in EMU: Strategies and Institutions. CEPR.