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Coordination of monetary and fiscal policy¹

Abstract. To achieve price stability, coordination of monetary and fiscal policies is required. The importance of coordination results from such premises as understanding the interdependence between monetary and fiscal policy, the role of central bank independence, the instruments-targets relation and financial stability as well. The lack of coordination will result in inferior overall economic performance, whereas providing it will give a better outcome for both policymakers. Therefore, coordination may be treated as the necessary condition for achieving price stability.

Keywords: policy coordination, economic policy, unpleasant arithmetic, central bank independence, price stability.

JEL codes: E31, E58, E61.

1. Price stability as a context

Nowadays broad consensus on benefits of price stability has emerged among economists. The prevailing opinion is, on the one hand, the consequence of inflation costs, on the other – benefits of low and stable inflation. It is generally accepted that low inflation fosters a long-run economic growth and enhances social welfare, whereas high and variable inflation increases uncertainty and deteriorates economic conditions (see e. g. Barro, 1995; Cargill, 2001; Fischer, 1996; Goodfriend, 2001; Issing, 2000; Mishkin, 1997).

The increasing importance of price stability (in economic theory and practice as well) contributed to the shift in the hierarchy of economic policy goals (Issing, 2000; Woodford, 2001). Reducing and controlling inflation have become the foremost objective for policymakers. Along with it the role of central banks has increased. Their actions, connected with institutional changes, were generally suc-

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cessful – average rate of inflation decreased significantly in the last two decades². The disinflation process, however, was disrupted by many factors (fiscal, political or structural). As a result, more attention has been paid in recent years to potential threats of monetary policy efficiency and price stability³.

The coordination of domestic monetary and fiscal policy seems to be one of the most important problems. The aim of this paper is to present importance of this coordination for price stability. The view that monetary policy cannot function effectively without a good relation with fiscal policy is based on practical (problems of individual countries), and theoretical (mainly derived from game-theory models) premises. The paper focuses, however, on the latter ones. The main conclusion is that the coordination may be treated as the necessary condition for achieving price stability.

2. Fiscal influence on monetary policy and price stability

In the monetarist-Keynesian debate, monetary and fiscal policies were perceived as separable undertakings. Before the 1980s, economists generally agreed that fiscal policy had an impact on the price level only if the budget deficit was financed by printing money. If it is financed by bond issue, the prices remain unchanged and both policies are in principle autonomous (Wojtyna 1998, pp. 99–100).

Such a split seems natural – monetary and fiscal authorities are different entities with different instruments, goals and preferences. In 1981 Sargent and Wallace “burst the bubble” on this dichotomy, arguing that neither policy is conducted in a vacuum⁴. It may be appropriate to think of monetary and fiscal policy as separate ventures, but the crucial thing is to understand that the two interact: monetary policy actions have repercussions for fiscal policy settings and vice versa (Bhattacharya and Haslag, 1999).

Sargent and Wallace in their “unpleasant arithmetic” (1981) proved that both monetary and fiscal policies interact within a single, unified government budget constraint⁵. They showed that if the fiscal authorities embark on the path of unsustainable deficits, the central bank might eventually be forced to print money (and

² In OECD countries it decreased from 10, 2% in 1970s to 1, 4% in 1999 (Cargill, 2001; Vinals, 2000).

³ It must be emphasized that inflation is not the only one threat to price stability. In recent years, even more attention has been paid to deflation, as a source of price instability (see e. g.: Ahearne et al, 2002; Bernanke, 2001; Buitier, 2003; Taylor, 2001),

⁴ For comments see: Bhattacharya, Guzman, Smith, (1998); Darby (1984); McCallum (1990); Sargent (1987).

⁵ Intertemporal budget constraint had been known earlier, but it got new meaning by taking into consideration rational expectations (Wojtyna 1998, p. 101).

inflate therefore) to fund the deficits. Then, deficits financed by bonds issue ultimately bring inflation too. Moreover, if expectations are rational⁶, the public realizes that the government is on such a dangerous path, and it will expect inflation to increase. As a result, the increased issue of bonds leads to an immediate increase of the inflation rate. In other words, Sargent and Wallace argue that to such extent that the path of the government's deficits is predetermined and unsustainable, the monetary policy and the price level are no longer exogenous to it (Lambertini and Rovelli, 2002).

Consequently, the fiscal policy may limit the central bank's ability to maintain price stability⁷. The monetary authority, sooner or later, will be forced to finance budget deficits with negative consequences for the price level⁸. Thus, it is clear that to achieve price stability both monetary and fiscal policies have to be consistent. The lack of consistency will result in suboptimal states of economy. In order to avoid potential disturbances, the coordination of monetary and fiscal actions is necessary.

Sargent and Wallace perceived coordination as a device for providing optimal policy-mix. Such approach was rather common in the early 1980s. However, coordination was not clearly defined in the papers considering this problem. Most often it was identified just with mutual consistence of monetary and fiscal policy, being conducive to policy goals achievement (e.g. Blinder, 1982). It is worth noticing that such understanding of coordination is very similar to that represented by the Polish classics of organization and management theory (Adamiecki, 1938; Kotarbiński 1965; Zieleniewski, 1982).

Unpleasant arithmetic has shown forcibly the interdependence of monetary and fiscal policy and initiated numerous studies of the monetary–fiscal interaction (see e.g. Alesina and Tabellini, 1987; van Aarle et al. 1995; Dotsey 1996; Tabellini, 1986). By restoring intertemporal budget constraint Sargent and Wallace's theory presents a direct influence of fiscal factors on the price level. But fiscal policy may as well have an indirect impact on prices. High nominal unindexed debt puts pressure on the central bank to unleash surprise inflation, in order to erode the real value of the debt⁹. An even more indirect impact of fiscal policy is also possible – via its

⁶ When expectations are rational, price level is a function not only of the current money supply, but also expectations of the future levels of the money supply.

⁷ A similar point, although much more radical, arises in the context of the “fiscal theory of price level”(FTPL) recently redeveloped by M. Woodford. According to the FTPL, monetary policy may be even irrelevant to price determination (see e.g. Cochrane, 2000; Leeper, 1991; Woodford 1995). This theory is, however, often criticized, among other things, for its logical “incoherence” (Buiter, 1999; Christiano and Fitzgerald, 2000).

⁸ In terms of game theory, unpleasant arithmetic may be seen as a “game of chicken”, where the central bank loses. Formally, process described by Sargent and Wallace is the noncooperative Stackelberg-type game (Blackburn and Christensen, 1989).

⁹ In fact, this is a variant of the time inconsistency problem of optimal discretionary monetary policy.

influence on the state of real economy (output, real interest rates). All these factors may interfere with price stability (Lane, 2002). To maintain this stability cooperation between the two entities is needed.

Ironically, with a better understanding of importance of monetary and fiscal interactions for price stability, negative impact of fiscal factors has escalated in many countries. More ironically, independence of central banks, treated as a device for this problem, additionally deteriorated the relation between monetary and fiscal policies, sealing separation of the two policymakers.

3. Independence of central banks

The establishment of independent central banks in many countries seems to be the most important institutional change in the practice of economic policy during the last twenty years. Similarly, the central bank's independence has become one of the most often studied – and probably one of the most fashionable – areas in economic theory. Most problems connected with the central bank's independence are beyond the scope of the paper, so we discuss only those which are closely linked to the policy coordination¹⁰.

It is said that the more independent the central bank is, the less it will be under political influence (public choice argument) and the less forced it can be to finance deficits¹¹. Moreover, independence is also perceived as a useful tool for overcoming a time-inconsistency problem (Eijffinger and DeHaan, 1996). Therefore, countries with independent central banks have lower levels of inflation than countries in which central banks are under direct control of the government¹².

However, there is also the other side of the coin. An independent central bank may weaken relations with fiscal authorities¹³. A potential lack of coordination will probably result in suboptimal economic performance, so it will influence negatively the price level too¹⁴. These problems may stem from one of the three causes (or combination of them): (1) the fiscal and monetary authorities might have different objec-

¹⁰ Central bank independence is the subject of many publications, e.g.: Cukierman, (1992), Debelle and Fischer (1994); Eijffinger and DeHaan (1996).

¹¹ This argument is reversed to unpleasant arithmetic (Parkin, 1987).

¹² In such situation, both policies are perfectly coordinated. But in my opinion, it is very doubtful, whether it is still coordination.

¹³ As Cargill (2001) points out, central bank may become a “prisoner of its own independence”. Such situation finds expression in so-called “independence trap”, in which central bank, concerned with its independence, is reluctant to implement new policies and cooperate with the other policymakers.

¹⁴ The paper focuses on price stability, but, clearly, the lack of coordination will also interfere with other economic policy goals (e.g. reducing unemployment rate).

tives¹⁵; (2) the two authorities might have different opinions about the likely effects of fiscal and/or monetary policy actions on the economy (they may adhere to different economic theories) and (3) the two authorities might make different forecasts of the likely state of the economy in the absence of policy interventions. As a result, coordination is weak, and none of the policymakers achieve their target (Blinder, 1982).

A situation, where the government and the central bank do not cooperate and consequences of this, has been examined in numerous papers (Nordhaus (1994), Andersen and Schneider (1986), Frankel (1998), Petit (1989) Petit and Hughes-Hallet (1990), Agell and Calmfors (1995), Debelle (1996), Leitemo (2002), Dixit and Lambertini (2002)). In many of them, game-theory approach was applied, as a particularly useful tool¹⁶. Regardless of the assumptions concerning information, time dimension or a type of the game (Stackelberg or Nash), almost all of these models show that non-cooperative behaviour leads to suboptimal states of the economy and increases variability of price and output levels¹⁷.

Thus, the central bank's independence fuels the coordination problem¹⁸. As Andersen and Schneider (1986) point out, "when we have two independent authorities, who act in their own selfish interest, then we quite often observe a conflict over the "right" policy direction. This effect should be kept in mind when quite often the argument is put forward that an independent monetary authority should be created". But it does not mean that the independence of central banks is an obstacle for coordination which cannot be overcome. To improve macroeconomic performance, both independence and coordination are necessary.

Bennet and Loayza (2000) distinguish two generations of monetary- fiscal reforms. The first one is to establish central bank's independence and fiscal discipline, the second - is to guarantee institutional incentives for domestic policy coordination. Given this, there is no trade-off between the independent central bank and the policy coordination. Then, coordination should be no longer treated as a process in which any of the policymakers is dependent. By coordination we should understand the process through which two independent authorities negotiate their strategies in order to improve the results for both¹⁹.

¹⁵ It is usually assumed, that government places more weight on output, whereas the central bank is more concerned about inflation.

¹⁶ Game theory was introduced into economic policy due to new classical school. Traditionally assuming rationality of players, game theory was very suitable for new classical analysis. It is, however, neglected for being too simplistic and operated mainly in the world of certainty. For advantages of game theory see Kreps (1990) and Friedman (1986); for the critique see Havrilesky (1994) and Pollard (1993).

¹⁷ This strain of literature focuses in principle on issue of stabilization and strategic decisions, whereas studies initiated by unpleasant arithmetic focus on government debt financing. The two strains are of course closely linked.

¹⁸ One may say that independence has paid attention to a problem, which it has contributed to.

¹⁹ Formulating definition in this way, we are more concerned in the process of reaching an agreement, than in the results of policymakers' decisions. Compare Blinder (1982), Benett and Loayza (2000).

4. Qualitative aspects of monetary policy as a premise of coordination

The central bank's independence is one of the so-called qualitative aspects of monetary policy. The other are credibility and transparency²⁰. All qualitative aspects have recently become much more important in planning and realizing the monetary policy (mainly as a result of greater interest in shaping expectations). Among the numerous advantages, credibility and transparency are also essential in emphasizing the need to coordinate fiscal and monetary policies.

Credibility, defined as the expectation that an announced policy will be carried out (Drazen and Masson, 1994), may be treated as a specific instrument of the monetary policy. It reinforces the influence of all other instruments (interest rates, open market operations, or moral suasion) and is an instrument itself. There are a lot of reasons why credibility might be important to the central bank: it may reduce costs of disinflation, limits the time-inconsistency problem and gives the central bank greater tactical or even strategic flexibility. A credible central bank can also act easier as a lender of the last resort in financial crises without creating fears that it has lost its dedication to reducing inflation (Blinder, 1999).

Generally, a credible central bank will find it easier to realize its main goal. This makes establishing credibility highly desirable. But credibility of the monetary policy will depend not only upon the monetary policy itself, but rather upon the perceived coherence of the overall macroeconomic programme (Blackburn and Christiansen, 1989). In other words, credibility of the monetary policy can be undermined by other factors, influencing the price level and effectiveness of the central bank. In particular, the monetary policy cannot – as it was described – function effectively without a good interplay with the fiscal policy. The latter may weaken credibility of the central bank, thus making an overall macroeconomic program less coherent. To avoid any problems with credibility, coordination, once again, is helpful.

Things seem to be a little similar when transparency of monetary policy is considered²¹. This aspect is also crucial to achieve price stability. Transparency contributes to greater credibility, promotes predictability in the behaviour of central banks and reduces uncertainty for economic agents (Gjedrem, 2001). Additionally, it improves accountability of the central bank (cf. Eijffinger and Hoeberichts (2000); Hochreiter and Kowalski (2000))²².

²⁰ It is related to fiscal policy as well. But in this paper coordination is considered as a device for achieving (or maintaining) price stability. This goal is attributed to the central bank, so we discuss credibility and transparency from the central bank's point of view.

²¹ Transparency may be understood as the extent to which the external presentation of the decisions corresponds with the internal decision making. More about transparency see in: Ferguson, 2001; Walsh, 2001.

²² In the Polish literature the problem of accountability is broadly discussed in Wojtyna (2002).

It is very important to enhance transparency in relation between monetary and fiscal authorities. It is conducive to identification of the policymakers' responsibilities and goals, thus decreasing uncertainty for economic agents. As the public confidence in the information received from the two authorities grows (along with its understanding), its expectations may be easily influenced and price stability may be achieved at a lower cost²³. Policy coordination, which may provide better (i. e. more timely, accurate and reliable) information, is therefore desirable²⁴.

Qualitative aspects of economic policy discussed above emphasize the need for coordination, at the same time showing clearly interdependencies between the monetary and fiscal authorities. As Blackburn and Christiansen (1989) point out, strengthening them should go along with the intellectual and political consensus on the economic theory being used as well as on the objectives and the conduct of the economic policy.

5. Other reasons for monetary-fiscal coordination

Potential effects of the struggle between an independent central bank and a fiscal authority over economic policy and the need for credibility and transparency are probably the most important reasons why coordination is so important. It does not exhaust the subject, however. Among many other reasons, the problem of target-instrument approach to formulating economic policy and financial stability should be mentioned.

As Blinder ((1982) remarks, the traditional targets and instruments approach of Tinbergen and Theil provides a useful framework for thinking about policy coordination because the coordination problem is basically the one of shortage of effective instruments. If the policymaker had enough instruments, the need for coordination would not be so important. But in the real world, the likelihood that we have surplus instruments (compared to the number of policy goals) is very small. There may be more goals than it is traditionally assumed and the instruments themselves may be the targets. Additionally, time dimension (and time-lags connected with it²⁵) should be taken into consideration. But the most embarrassing problem

²³ In this case transparency facilitates also reaching the social consensus on the objectives of economic policy (Worrell, 2000).

²⁴ The influence is also reverse: monetary-fiscal coordination will improve transparency of the overall economic policy.

²⁵ The problem of time lags in monetary policy was not perceived as important during the dominance of new classical school – the consequence of rational character of expectations has been time lags approaching zero. Importance of time lags has increased due to bounded rationality hypothesis (Kowalski, 2002).

here is uncertainty²⁶. For example, according to Blinder (1982, policymakers may feel less uncertain about the effects of particular monetary–fiscal combinations than they do about the effects of individual instruments used in isolation. If so, coordination then becomes much more critical for accomplishing policy targets.

Approach provided by Tinbergen is still in use (Blinder, 1998). It is, however, no longer appropriate for modern institutional conditions. A better concept, though also criticized, appears to be the “assignment”, suggested by Robert Mundell (1962). According to his solution, every instrument should be linked to the target it influences the most (see Wojtyna, 1998). The assignment fails when policymakers do not have enough instruments. This may lead to the so-called situation of “one-armed policymaker”²⁷. This situation, corresponding with the reality of economic policy in many countries, raises clearly the question of coordination. Cooperation of monetary and fiscal authorities may limit problems connected with the shortage of policy instruments.

Finally, we should look beyond the goal of price stability and pay attention to financial stability which, in the face of frequent and dangerous financial crises of the 1990s, has become one of the most often discussed questions by both economists and politicians²⁸. It is commonly agreed that coordination of monetary and fiscal policy is a way to achieve financial stability, with all the benefits it brings. The lack of coordination, however, is perceived as a one of the macroeconomic factors, increasing instability of financial systems²⁹.

6. Concluding remarks

The above-mentioned premises of coordination make its establishment very desirable. Coordination helps to reduce the target-instruments problem, is conducive to financial stability and improves credibility and transparency of both monetary and fiscal policy. Coordination, understood as the process through which two independent authorities, namely the central bank and the government, negotiate their strategies, also creates an environment in which these authorities may effectively realise their policies. The lack of coordination will result in non-optimal policy mix, deteriorating policy outcomes, for instance due to disruptive fiscal factors (like excessive budget deficits and public debt) or a too contractionary monetary policy which in many opinions has recently been the case of Poland.

²⁶ Uncertainty was introduced into Tinbergen’s analysis by W. Brainard.

²⁷ This problem was raised in Sachs and Larrain, 1993.

²⁸ Financial stability is discussed in Kiedrowska and Marszałek (2002a, 2002b, 2003).

²⁹ Moreover, price stability which, as it has been shown, coordination is conducive to, is perceived as a precondition of financial stability.

Thus, coordination of monetary and fiscal policy may be treated as the necessary condition for achieving price stability (preventing or reducing both deflation and inflation). Such a point of view has been adopted in this paper; nonetheless, one could of course go further and treat coordination as beneficial also to achieve other economic policy goals. In other words, some revival of interest in short-term stabilization in the economic literature (noticeable, for instance, at the 2002's Conference in Jackson Hole) does not depreciate the importance of coordination.

The crucial question then is how to provide coordination of monetary and fiscal actions. Institutional solutions approved in individual countries are fairly diverse. In the developed countries with a liquid and effective financial market, coordination is provided by this market itself. Market forces are the main mechanism, forcing the policymakers to coordinate its operations. Therefore, there is no need for explicit policy coordination and clear separation of the policymakers' responsibilities is sufficient. The problem is much more complicated in the countries with underdeveloped financial markets where explicit and strict coordination (of policies, particular instruments and information as well) is required.

Obviously, nobody expects that one perfect solution exists. There is no doubt, however, that for efficient coordination political consensus and will is needed, as well as proper legislation and institutional framework. Additionally, some issues deserve special emphasizing. First, coordination will not balance policy mistakes. Second, in many countries coordination is much more difficult, because of the third player in the game, i.e. debt management agency. Third, similarly, we should also take into consideration the exchange rate regime. Fourth, coordination should not be treated as an argument in favour of limiting central bank's independence.

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