

ANALYSIS OF THE IMPACT OF FISCAL AND EXCHANGE RATE ON GROWTH: LITHUANIAN AND POLISH CASE

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The implementation of the EMU translates a new European policy mix. Our article proposes a study on the coordination of the monetary and budgetary policies for the Baltic States for their complete integration in the European policy mix. New members must ensure a monetary policy able to answer the objective of price stability; they take part in EMS II for three years.

The budgetary sovereignty of governments is relative taking into account their obligations in accordance with the Pact of Stability and Growth. After the participation in the Monetary Union, the countries cannot change their exchange rate, they will lose weapon of the exchange rate and will have henceforth only the budgetary and fiscal policies to adjust their economies. These last are in addition limited by the criteria of convergence and the Pact of Stability and Growth.

Credibility can be obtained only by affecting to each authority a specific objective, namely the price stability for the monetary authority and the sustainability of the national debt for the budgetary authority.

A not balanced policy mix encourages financial turbulences, which occur when the investors have doubts as to the capacity of the country to absorb a shock (for example, in Russia). Budgetary deficit can reach a significant level. The monetary supply which can finance the deficit is then higher than the demand.

According to monetarists, the budgetary discipline is associated with a partial control of prices and wages. In Poland, the "popiwek", which is a tax on the increases in wages, attempts to reduce the budgetary deficit. Such a policy of frozen prices and wages is able to produce a fast deceleration of inflation. The public accounts thus tend to improve quickly.

For monetarists, the monetary policy does not have any influence on the real sphere. The entry in the EMU supposes the loss of the exchange rate. The adjustment of the economic policy for the Member States in the event of asymmetrical shocks can be done only by the tax and budgetary policies.

The latter are indirectly forced by the respect of the criteria of restoration of public finances; in the Central European East countries these problems are significant.

In the current context of slowdown in economic activity, several governments of the Euro zone asked the European Central Bank to lower their rates to support the economic activity.

Within this framework, we will study the impact on the growth of this new policy mix to which the Baltic States and Poland will be subjected.

Keywords: transition, budgetary and monetary policy, growth, European policy mix.

Introduction

The problems of the coordination of the budgetary and monetary policies are posed within a new framework for the latest Member States. Indeed, within the Euro zone, the monetary policy is carried out by the ECB, and only the budgetary policies are assured individually by the states.

The new Member States of the EU manage their monetary (while taking part in the exchange rate mechanism II) and budgetary policy.

The impact on the growth of the coordination of the budgetary and monetary policies depends on several parameters. The macroeconomic characteristics of the new members of the EU are very heterogeneous, and it is difficult to answer precisely each one of them. Therefore we limit our work to Poland and Lithuania (two different examples of policy mix).

The accession to the EU supposed to answer the nominal and real criteria. The European institutions impose strict rules difficult to apply. The main countries of the EMU like France and Germany currently do not answer the public expenditure criteria. They exceed the threshold of 3%. In this case, how could countries still in modernization of the productive and institutional structures follow these standards? Their strict application is likely to block the growth of the transition economies of the East. Therefore several economists propose new standards.

The adhesion of the new members supposes to follow the European Exchange Rate Mechanism II. The Polish and Lithuanian exchange rate policies are different, the respective authorities chose a fixed exchange rate but adjustable then for a floating rate of the zloty and a currency board for the Lit. A harmoniza-

tion of the exchange policies will be carried out within the exchange rate mechanism, which will ensure the participants a scope, if not sufficient then at least appreciable, to ensure a rigorous management of the coordination of the budgetary and monetary policies.

The policy mix try to implement an economic policy which would facilitate simultaneously the realization of the price stability, full employment, sustainable growth and external balance. The political instrument corresponds to each target. The monetary policy aims at price stability, the wage policies relate to the level of employment, the tax policy tries to ensure the growth, and the exchange rate is used for the adjustment of the external balance.

Another way of defining the policy mix is to try to reach simultaneously the domestic and the external equilibrium and to take into account the interdependences between the various political areas and their reactions. The domestic equilibrium requires price stability and full employment, while the external equilibrium reflects the position of the current account. It is the sustainable foreign debt and the domestic growth.

Price stability is the objective of the monetary policy supported by stable unit costs and consequently of the wage negotiations, which concentrate on the distribution of the profits of productivity. If the unit costs of labour remain stable, the monetary policy can be more flexible for the economic growth, lowering the interest rates and supporting the creation of jobs.

The modern economic theory stresses the fact that the tax policy should aim at maintaining the national debt sustainable. That implies that the servicing debt is covered.

Today, the operation of the economy depends on the long-term interest rates. Debts

of companies and private individuals are on this horizon. But the monetary authorities have only one, very indirect influence on these rates, largely dependent on anticipations of the financial actors. The clauses of the Maastricht treaty seem to exceed today. In the context of the EMU, there are good reasons to think that the budgetary and fiscal policies would be more effective than the monetary policy.

The Euro zone is built on two principles: single market of the capital and single currency (a fixed exchange rate between the currencies). Within this framework, research shows well the increased impact of the budget policy on the economic activity.

We will present in the first part a theoretical analysis of the coordination of budgetary and monetary policies. The case of Poland and Lithuania is proposed to try to follow the policies before the accession.

Then, in the second part, we present a study of the European Exchange Rate Mechanism II (ERM II). The latter aims at ensuring a monetary policy favourable to the growth. This allows us to show also the characteristics of the budgetary policies, to allow in a transitory way the economy to find its path of potential growth without returning to a deep recession.

I The optimal policy mix in the EU

1. Importance of the tax policy

1.1 Analysis of coordination according to the MUNDELL FLEMING model

A more significant role is given to the budgetary policies. They are national and can thus be differentiated according to specific needs for each country. The pact of Stability and Growth indeed perpetuates one of the four criteria of convergence of the Maastricht treaty: the lev-

elling off to 3% of the GDP of the public deficits.

The goal is to eliminate the shifts (sources of inflation) interfering with the principle of price stability. Preventing the automatic stabilizers from playing, this becomes unsustainable when the area seems to be inserted in the recession.

The absence of harmonization results in an unrestrained competition among the Member States, reducing the budgetary resources.

1.2 Analysis of the budgetary policy of a European country related to the others by fixed rates of exchange

The new Member States endeavour to reduce their limits of fluctuations. Such an effort is imposed before their accession on the Monetary Union.

A small European economy, whose prices and wages are constant and which is in a fixed exchange rate system or which takes this one as reference, can be described by a macroeconomic model. We note the contributions by R. A. Mundell and J. Fleming (1960) or J. A. Frenkel and A. Razin (1987).

We analyse the effects of the budgetary policy on a strong mobility of the capital.

The new members belong to the ERM II. Their currencies are related to the single currency by a fixed exchange rate system but adjustable within widened limits on $\pm 15\%$ (the exchange rate can vary around a central parity).

Within this framework, the monetary policy seems ineffective.

A rise in the public expenditure relating to national goods determines a rise of the domestic product. Its financing by loan involves an increase in the domestic interest rate compared

to the foreign rate, which induces capital inflow and the appreciation of the national currency. The latter factor reduces exports thus deteriorating the trade balance, and exerts a negative effect on the total product. This effect compensates for the positive incidence of the rise in the public expenditure and restores the initial value of the total product.

A budgetary expansion, whose value of the currency can fluctuate compared to Euro within the European exchange rate mechanism II, does not influence the level of activity, but it reduces the exchange rate and induces a deterioration of the trade balance. On the other hand, a monetary expansion can act effectively on the level of employment.

Conditions of the transitory effectiveness of the budgetary policy are discussed now.

We introduce anticipations on the variations of the exchange rate and the inheritance effects.

* If the agents envisage a exchange rate E^e different from the current exchange rate E , they carry out arbitrations on the money market until the following equality between the yields expected from the national bonds and abroad is carried out:

$$r = r^* + (E^e - E) / E.$$

If these agents envisage perfectly the budgetary expansion under consideration by the public authorities, they know that it determines a fall of exchange rate. They are encouraged to buy national bonds whose anticipated yield is higher than that of the foreign bonds $r > r^* + (E^e - E) / E$, what reduces indeed the exchange rate.

This fall of E determines that of exports, which compensates for the positive effect of the rise in the public expenditure on the production. In this case, the budgetary policy does not influence the level of employment.

On the other hand, if the private agents are made surprised by the budgetary authorities, they anticipate not a fall of the exchange rate but only an induced rise in the public expenditure:

$$E^e > E.$$

In this case, the condition is satisfied for a domestic interest rate higher than the foreign rate and the budgetary expansion exerts a positive effect, in a transitory way, on the total product.

* If a European country is involved in an outside debt and this debt O^P is contracted in foreign currency, a budgetary expansion induces an effect of inheritance by determining a fall of the exchange rate. Let us suppose that the inheritance J of a country is formed by the monetary supply "M" which reduces the value in national currency of the debt towards the outside $E O^P$. In this case, the fall of the exchange rate induced by the rise in the public expenditure determines a reduction of the value in domestic currency of the debt for an amount of O^P given in a short term. It results in a rise from it in the value of the inheritance which stimulates the request for goods.

If the initial debt is high, its variation can induce a significant rise of the private demand, which makes it possible for the budgetary policy to exert a positive net effect on the level of employment. This net effect is negative in the case of a low initial debt.

1.3 Durable effects of the budgetary policy

In the long run, we should see whether the effects shown previously continue by introducing budgetary constraints and ensuring a perfect mobility of the capital.

The budgetary constraints weigh on the private sector, the state, and the whole of the economy.

The resources available to the private agents are composed of the inheritance and the incomes. We suppose that the private agents spend their incomes after paying taxes and their interests in a stationary situation of the balance characterized by a null net investment. The public sector is then in a situation of deficit.

In the absence of a recourse to monetary creation, the total deficit is financed by issuing public bonds.

The total constraint of the economy supposes that the commercial balance equalizes the balance of the incomes of the capital. The latter ensure the equilibrium of the current balance, accompanied by a balance of the movements of capital, which is carried out permanently by the perfect mobility of capital movements.

Now we can study the effectiveness of the long-term budgetary policy.

A rise in the public expenditure financed by taxes makes it possible to account for the constraints while assessing the initial balance in the budget.

The dynamic process that brings an economic system of the initial stationary balance disturbed by this political measurement with the final balance can be described in the following way.

In $t = 1$, a rise in public expenditure determines an increase in domestic production. Private residents see their incomes and their taxes to increase by the same value, and they do not modify their demands for goods. On the other hand, their demands for currency increase. This rise causes a desire of net debt which is satisfied, which reduces the volume of the inheritance held at the end of $t = 1$. Moreover, it determines a transitory rise of the domestic interest rate which generates a capital inflow,

an increase in reserves and money supply. So the inheritance held at the end of the period increases by an amount that compensates for the fall induced by the additional debt. The loads of interests increase with this supplement of debt, which reduces the available resources.

This reduction determines a reduction of the request and production of goods in $t = 2$. The decrease in the demand of currency results induced a transitory reaction of the interest rate and involves a capital outflow and a reduction in the reserves. Then, the money supply and the inheritance decrease.

The reduction of the available resources is more significant than that of the demands for goods and currency induces by it. The agents need to contract an additional debt compared to that which, by the constraint, requires the refunding of the former debt. The reduction in the inheritance induced by that of the money supply is accentuated by a rise in the debt.

This reduction continues from period to period. If it is increasingly weak, it represents a convergent process which ensures the realization of a new long-run equilibrium.

A new stationary balance is then defined by:

- a monetary balance, ensured by a higher supply because of the rise of the reserves, and by a more significant demand resulting from the prevalence of the positive effect of income over the negative effect of inheritance,
- an equality between the total product and a higher macroeconomic demand. This result is obtained from the rise of the public request, the positive effect of which is slowed down by a decrease in the private demand,
- an equilibrium of the current balance, which covers the deficit, with the bal-

ance of the capital incomes more significant than in the beginning because of the rise of the foreign debt, and a higher surplus of the trade balance because of the fall of the imports induced by the fall of the inheritance and the income after taxes.

With time, the budgetary expansion determines a rise of the total product, an increase in the net private debt, and a net increase in the reserves of exchange, which is lower than that of the private debt, resulting in a fall of the private inheritance.

2. The articulation of the monetary policy within the ERM II

Within the European Monetary Union, the restrictive monetary policy followed by the ECB is not always compatible with the economic growth.

The flexibility of the ERM II is an advantage for the new members which will know less conflicts of objectives. It increases applying the Theory of the Target Zones. The definition of the equilibrium exchange rate makes it possible to know the central parity around which the exchange rate can fluctuate between the margins from more or less 15%. This flexibility of management of the monetary policy will ensure a better coordination of the policies.

The new members will know less conflicts of objectives. They will be able to act at the same time in the budgetary and monetary policy in order to control their inflation without giving up to ensure the growth of their economies.

We will now define the fundamental equilibrium exchange rate. The management of these rates makes it possible to soften the constraints.

2.1 New members and the MCE II

J. Williamson (1994) defines "the equilibrium exchange rate as the real effective exchange rate compatible with the simultaneous realization in the medium term of internal and external macroeconomic balances".

The study of the exchange rate, the competitiveness and the balance of payments starts with an analysis of the current account balance and its equilibrium. It allows to measure the performances of an open economy. It is closely related to the other components of investment and domestic saving: budgetary balance and private saving.

2.2 The concept of equilibrium real exchange rate

The determination of the equilibrium exchange rate arouses a new interest since the theoretical projections of J. Williamson. It proposes to define the value of long-term reference towards which the real exchange rate must converge, according to fundamental variables.

The macroeconomic approach¹ of the determination of the equilibrium real exchange rate consists in interpreting the real exchange rate as an indicator of the total competitiveness of a country. It predetermines its external balance. This approach uses a neo-Keynesian model. The equilibrium real exchange rate appears as the value of the real exchange rate ensuring the realization of the domestic and external equilibrium simultaneously.

¹ Alternatively, there is a microeconomic approach of the equilibrium exchange rate. It is based on the intertemporal general balance model and seeks the microeconomic basis of the real exchange rate. (p. 8)

D. Borowski and C. Couharde (1999) underline that J. Williamson's approach has two advantages:

it takes account of the increasing economic integration of the countries by giving a major role to the interdependencies between the countries insofar as the exchange rates are explicitly interconnected;

it explicitly retains the domestic equilibrium in the determination of the equilibrium exchange rates. It is necessary that the countries reach sustainable levels of current accounts but also that they are on their path of potential growth.

As the evolution of the public finance has an impact on the medium-term current account, it is appropriate to take account of measurements of budgetary policies in order to evaluate the target of current account.

J. Williamson proposes to stabilize the ratio of debt to GDP, which makes it possible to define a sustainable level of current account deficits financed by capital inflow.

We analyse the methodology in order to carry out the estimates of the equilibrium real exchange rate. There are two approaches: the methods of comparative statics (employed by J. Williamson) and of dynamic analysis (used by I. Elbadawi).

The approach in comparative statics supposes that the current balance of the basic period has been adjusted with the changes of the latest growth and competitiveness. However, persistent imbalances of the current balance can generate significant variations of the level of the net credits held abroad, which would retroact on the net flows of interests. The policies that affect the investment level can change the potential growth and thus the level of medium-term activity. This argument militates in favour of the dynamic approach².

2.3 Dynamic Approach

An alternative to J. Williamson's approach is offered by the concepts of desired equilibrium exchange rate (DEER)³ and behavioural exchange rate (BEER). We adapt the model of S. Edwards (1989) to the Polish case and retain the following specification:

$$\text{LOGREERFMI}_t = c_1(\text{NNTOT})_t + c_2(\text{NTARIF})_t + c_3\text{NCREDITINT}_t + \varepsilon_t.$$

The VAR models are as follows:

$$\text{LOGREERFMI}_t = c_1^0 + \sum_{i=1}^n c_{1i} \text{LOGREERFMI}_{t-i} +$$

$$+ \sum_{i=1}^n c_{1i}^2 (\text{NNTOT})_{t-i} +$$

$$+ c_{1i}^3 (\text{NTARIF})_{t-i} + \sum_{i=1}^n c_{1i}^4 (\text{NCREDITINT})_{t-i} + \varepsilon_{1t}$$

$$\text{NNTOT}_t = c_2^0 + \sum_{i=1}^n c_{2i} \text{LOGREERFMI}_{t-i} +$$

$$+ \sum_{i=1}^n c_{2i}^2 (\text{NNTOT})_{t-i} +$$

$$+ \sum_{i=1}^n c_{2i}^3 (\text{NTARIF})_{t-i} + \sum_{i=1}^n c_{2i}^4 (\text{NCREDITINT})_{t-i} + \varepsilon_{2t}$$

$$(\text{NTARIF})_t = c_3^0 + \sum_{i=1}^n c_{3i} \text{LOGREERFMI}_{t-i} +$$

$$+ \sum_{i=1}^n c_{3i}^2 (\text{NNTOT})_{t-i} +$$

$$+ \sum_{i=1}^n c_{3i}^3 (\text{NTARIF})_{t-i} + \sum_{i=1}^n c_{3i}^4 \text{NCREDITINT}_{t-i} + \varepsilon_{3t}$$

$$\text{NCREDITINT}_t = c_4^0 + \sum_{i=1}^n c_{4i} \text{LOGREERFMI}_{t-i} +$$

$$+ \sum_{i=1}^n c_{4i}^2 \text{NNTOT}_{t-i}$$

²T. Bayoumi, P. Clark, S. Symanski and M. Taylor (1994) show the theoretical superiority of the dynamic approach by means of a complete multinational model, but they do not prefer definitively this approach to comparative statics. (p. 9)

³ DEER is similar to the fundamental equilibrium rate of exchange proposed by J. Williamson, S. Edwards prefers to employ the term "desired" as it is the desirable rate to obtain the domestic and external equilibrium. (p.9)

$$+ \sum_{i=1}^n c_{4i}^3 (NTARIF)_{t-i} + \sum_{i=1}^n c_{4i}^4 NCREDITINT_{t-i} + \varepsilon_{4t}$$

The variables are non-stationary. When one practises the test for a series of difference first, they become stationary. The conclusions of the test are in conformity with the regulations, and one accepts the assumption of a unit root. They are integrated of the order 1 (1). One of the conditions of the existence of cointegration is satisfied in accordance with the step of Engle and Granger (1987).

The estimation of this equilibrium exchange rate enables us to define the central parity (C) around which the exchange rate will be able to fluctuate inside the limits of fluctuations, more or less 15%. Graphically, we can represent it in the following way (Fig.1):

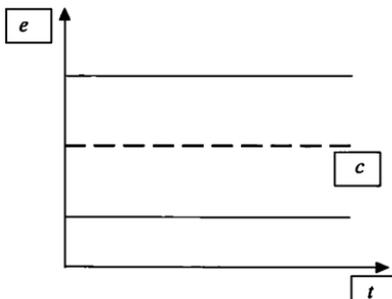


Fig. 1. The ERM II with central parity

In the graph, t represents time, e is the exchange rate.

We have just seen the articulation of the monetary policy of the new members of the EU. We now see what these countries can derive as advantages for the growth.

In an open economy, the Central Bank uses the exchange rate as a instrument to control inflation.

In the event of inflationary shock, the appreciation of the exchange rate makes it possible to control either the current or the anticipated inflation. The dynamics of the monetary policy can be complex from the appreciation itself and raises the interest rate which makes it to have effects shifted on the request. If these effects are individually very strong, we see that the dynamics is unstable and involves more significant variations of the exchange rate, which are also felt in the case of stable dynamics. The Central Bank alternates the periods of real appreciation and depreciation in response to the shock.

Indeed, the monetary restriction which stabilizes a short-term inflation involves later on a too significant braking of the request, which requires a real depreciation to start again the economy, which accelerates inflation again. The result of the interaction between the immediate effect of the exchange rate on inflation and of the delayed effect of the monetary policy on the real activity is harmful. In the event of an unfavourable (inflationary) shock of supply, the control of future inflation requires a weak monetary restriction, since the rise of the interest rate, which reduces the prices of the imports, also has a similar effect on reducing the future request, which helps to stabilize inflation.

We show that the monetary policy and inflation are interdependent in two theoretical ways.

An increase in the interest rate attracts the investors. The purchases in currencies tend to increase on the international markets. We attend an appreciation of the currency, which has an impact on the inflation in two ways: by reducing the price of the foreign goods in domestic currencies and by increasing the price of the domestic goods on the foreign markets, which involves a fall in the demand of export.

While the request for export decreases, the inflationary pressure on the domestic markets of goods is less strong.

The variations of the interest rates have substantial effects on the consumer expenditure (purchases of equipment) and on the inflation rate.

Two methods measure the impact of the monetary policy on the economy:

the first technique measures the effect of a random short-term change of interest rate, controlled by the monetary authorities;

the second determines the impact of the restrictive policy rather on the companies' purchases of goods or equipment than on the consumer expenditure. Van Els et al. (2001) note that a reduction of the expenditure of capital is harmful to the economy.

The latter remarks allow us to apply our theoretical developments to the particular cases of Lithuania and Poland. We analyse the tax effects of the accession in the new Member States of the East and try to determine the central parity of the zloty and the Litas within the framework of the ERM II.

II Application of the policy mix to the new members of the EU: Lithuanian and Polish case

The intensification of competition at the European level privileges the fiscal policy, which acts on the good supply, rather than the policy of public expenditure. The latter has only transitory effects on employment. In addition, the flexibility of wages is likely to be lower than that of the prices of goods. We will analyse it thereafter by showing the effects on the growth.

3. Tax effects of the accession in the new member states

A frequent argument is that the accession starts with an additional substantial public expenditure in the new Member States and consequently involves more significant budgetary deficits. The national co-financing of the structural funds of the EU and the funds of cohesion raise a particular difficulty.

3.1 Increase in the budgetary deficits

The accession involves higher public expenditures. Additional expenditures are financed by the increase in the deficits, and the only alternatives are summarized with an increase in taxation or reduction of expenditure.

P. Backe (2002) has concluded that in a short term the EU will add tax constraints to the new Member States. In a medium term, the total effects can be expected to be neutral or slightly positive, while some uncertainties prevail in the amplitude of several individual effects, in particular the future needs for public investments.

M. Antczak (2003) estimates that the tax deficits will exceed 3% of the GDP in the first years of the accession.

The system of the own resources is fully applied to the new Member States. They profit through the budgetary compensations from transitional arrangements on their financial obligations towards the budget of the EU.

The goal of these compensations is to eliminate a possible deterioration from their budgetary position.

This deterioration can find two origins:

- it results from the fact that a member must pay contributions to the budget immediately;

- refunding from the budget of the EU concerning direct payments to farmers (in the context of the Common Agricultural Policy) is done only the following year.

3.2 *The policy of tax incentive*

It can be implemented in the new Member States. Indeed, a reduction of the social contributions and tax employers' weighing on the wages stimulates the application for a job. The fall of the imposition can involve a transfer of capital of the national non-commercial sector or abroad towards the national commercial sector. It stimulates the formation of the capital by reducing the tax pressure weighing on the savers and the investors.

With the rise of the capital and work volume in the commercial sector, the reduction of the tax rate increases the total product and the revenues from taxes.

The tax policy or its harmonization within the EU does not exist. The criterion of fiscal integration is not observed. A country undergoing an asymmetrical shock of request could control it by decreasing its contribution to the budget. This requires a mechanism of financial transfers between prosperous areas and areas undergoing this type of shock [18]. It affects the internal supply of the factors; we develop what occurs if we have three countries A, B and C.

The productivity of area A is twice higher than that of area B, and they trade both the same product. The wage convergence of area B compared to area A supposes that the good produced in area A costs two monetary units, whereas in the area B it costs 4 of them.

The adjustment by the exchange rate does not exist any more in the Monetary Union; the only adjustment is done by a reduction of wages in area B.

In terms of trade, the good of the country B is not competitive any more, it will be acquired in a third country, the country C, apart from the Monetary Union. This purchase involves an exit of currencies, which tends to depreciate the value of the currency vis-a-vis the other currencies. The solution would be to increase the interest rates, penalizing employment. The consequence of this shock involves a reduction of the intra-regional trade and a rise in the interest rate. The EMU cannot guarantee a disappearance, even an attenuation of the asymmetrical shocks, and the regional disparities remain.

The accession of the new members will reduce their tax constraints. The transition of the year 2004 is particularly difficult. These economies will have to adapt in order to reabsorb the current and future payments. Modifications of budgets will be necessary.

The accession is seen as an advisability of increasing the effectiveness of public expenditure. While concentrating on the improvement of the conditions of private investment, the best management of the expenditure has a broad positive economic impact. The accession itself is not a convincing justification for more significant budget deficits.

3.3 *The Lithuanian example*

After the Russian crisis, Lithuania made efforts to restore its macroeconomic stability. It reduced the tax deficit of the government from 8.5% of the GDP in 1999 to 2.8% in 2000.

The efforts of the government to make a success of the tax consolidation are significant. The tax adjustment will have to stimulate the credibility of the currency board and will lead to reductions of the costs of loans for the public and private sectors. The generated saving will contribute to the national saving releasing

from the resources for the investment and the reinforcement of the external position.

The acceleration of the economic revival and the concomitant reinforcement of the request for the private sector should facilitate the reforms to reduce the deficit. The objective is to carry out a balanced budget, the economy will develop with its potential level of growth and will ensure a sustainable external medium-term balance.

The government decides to change the tax system with the aim of relieving the fiscal burden to support employment, growth and investment, and to implement the municipal taxes to reinforce municipal finances. The first phase of the tax reform related mainly to the income tax of companies and employees and later on the consumption taxes are considered. Depending on the capacity of the municipalities to take taxes, a tax cut on the income of the employees will be possible. Municipal finances will be thus reinforced.

The government seeks solutions to reduce the total expenditure and to reach the target of deficit, mainly by the rationalization of expenditure on the level of the state budget. A target of budgetary deficit of approximately 1.3% of GDP would be in conformity with the continuous progress of the external adjustment.

4. The management of the exchange rate in Poland and Lithuania

The coordination of the monetary and budgetary policies supposes to take into account the fiscal policy as well as the management of the exchange rate within the framework of the European Exchange Rate Mechanism II. We have already presented the concept of equilibrium exchange rate and its role of the central parity within the ERM II. We now analyse the Polish and Lithuanian exchange rate,

while insisting on the exchange rate policy followed by Lithuania.

4.1 Linear estimate of the equilibrium real exchange rate applied to the Polish case

We give the equation of the relation:

$$\log REERFMI_t = C_1 NNTOT_t + C_2 NTARIF_t + C_3 NCREDITINT_t + C_4 \mu_t$$

The results of this relation appear in what follows:

$$\log REERFMI_t = -0.7 NNTOT_t + 0.378 NTARIF_t - 0.152 NCREDITINT_t + 4.431$$

We see that the coefficient of the term of recall is negative and significant, the representation with a correction of error is thus validated. We present a series of real exchange rate and equilibrium in the next table:

Table. Real Exchange Rate and Equilibrium Exchange Rate

| | ERER | REERFMI |
|------|---------|---------|
| 1981 | 5.088 | 4.41 |
| 1982 | 4.1842 | 4.63 |
| 1983 | 5.30406 | 4.81 |
| 1984 | 5.3655 | 4.79 |
| 1985 | 5.42862 | 4.64 |
| 1986 | 5.46828 | 4.40 |
| 1987 | 5.56498 | 4.08 |
| 1988 | 5.6889 | 3.99 |
| 1989 | 5.84482 | 4.11 |
| 1990 | 5.69314 | 3.94 |
| 1991 | 6.03908 | 4.38 |
| 1992 | 6.03582 | 4.45 |
| 1993 | 6.04412 | 4.52 |
| 1994 | 6.11872 | 4.53 |
| 1995 | 6.12646 | 4.61 |
| 1996 | 6.25132 | 4.69 |
| 1997 | 6.31202 | 4.71 |
| 1998 | | 4.77 |
| 1999 | | 4.72 |

This analysis allows some comments. The equilibrium real exchange rate is affected by the real variables. If the monetary disturbances influence the exchange rate on a short-term basis, the variations in the fundamental disturbances have long-term effects. The real exchange rate is defined as the price of foreign production in terms of domestic production. In a particular case where the prices are fixed, the real exchange rate (e) is equal to the nominal exchange rate. An increase in E is a devaluation (or depreciation). A reduction in E is a revaluation (or an appreciation) of the domestic currency compared to the foreign currency. When the variation of the nominal exchange rate is also real, we note, starting from the definition of the real exchange rate, that:

a real devaluation is a deterioration of the terms of trade of a country, thus a take-back by external factors. For the devaluation, it is necessary to export a greater volume of domestic production to obtain the same volume of the foreign production to import;

an appreciation is an improvement of the terms of trade. It is necessary to trade a less volume of national production to export to obtain the same volume of foreign production to import.

In theory, the influence of the terms of trade on the equilibrium real exchange rate cannot be accepted, if the returned effect tends to dominate over the substitution effect. We assume that the country knows an aggravation of its terms that involve a depreciation. A decreasing rate of capital inflows and a more liberalized economy involve a more depreciated equilibrium exchange rate.

The degree of the opening of a country has implications on its economy.

The liberalization of trade requires a depreciation of the real exchange rate. The growth of the productivity is the key element of the development. Its analysis is important. If the growth of the productivity is shown, it can have a negative effect on the equilibrium of the real exchange rate. The first objective of the country is the stability of its real exchange rate. Shocks of the fundamental rates may have only transitory effects on the equilibrium exchange rate. The main problem is the inflation caused by the expansion of the domestic credit. The Central Bank tries to fight it with raised interest rates, and this policy attracts significant capital inflows. The zloty is then on a trajectory of appreciation. The domestic currency is strong, the high real interest rates strike exports and cause significant current account deficits around 8 to 9% of the GDP. The recent real appreciation can appear excessive. The monetary authorities explicitly use the exchange rate as a means of inflation control. Its use as an intermediate objective requires the use of an effective instrument such as the "terms of trade" for the stabilization of prices. Difficulties can come from the coexistence of a fast effect of the monetary policy on inflation by means of the exchange rate and of a slow effect through the reaction of the request to the real interest rate and competitiveness. These two effects follow one another in time.

4.2 *The Lithuanian case*

The management of the currency board has been functioning in Lithuania since 1994: it led to the anchoring of the Litas to the US dollar and the Euro in February 2002. Within the framework of the economic policy and in the absence of other shocks, the economy seems to be able to face an appreciation of the currency.

This resilience allows Lithuania to preserve the management of the currency board during the participation in the Exchange Rate Mechanism II. With the REER appreciated at approximately 9.5% per year during 1994–2001, this appreciation was related to the flexibility due to the fast growth of the productivity, in particular of the sector of export, wages and prices. The financial system seems also well profited and resists the shocks. Thus, in the absence of other great external shocks, the strategy of the authorities would seem viable. Nevertheless, the management of the currency board should continue to be supported by a strict tax position and reforms of the market to increase the growth of productivity and the flexibility of the labour market and prices.

After the Russian crisis in 1998–1999, there were pressures. A combination of a severe recession, of an unsustainable tax situation, and the intensified substitution of currency brought the management of the currency board at the edge of collapse towards the end of 1999. This is reflected by a significant decline of the reserves in Litas, but the pressures on the currency pushed the government to realize corrective measures towards the end of 1999, which prevented a confidence crisis in the banking system. Developments in 1999 showed that the credibility of the management of the currency board needed to be supported by a suitable tax position, and the return to a sustainable balance was articulated on a fast correction of imbalances. The preserving government sworn in November 1999 was committed making a massive tax adjustment and structural reforms into 2000 to correct imbalances and to support the macroeconomic growth. The effect of credibility of the tax adjustment (the budget deficit decreased by 8.5% of GDP in 1999 to 2.8% in 2000), a significant break-

through of structural reforms, and a rise of capital inflows reduced the restrictive effects of the fall of the public sector. Consequently, the growth rebounded into 2000, whereas the balance of payment deficit decreased by 6% of the GDP. The adjustment and the reforms undertaken between 2000 and 2001 involved the main progress for the negotiations on the EU accession, and Lithuania became a firm candidate for the first wave of accession for 2004. The choice to maintain the management of the currency board seems to have been salutary. With an unstable political environment and pressures of expenditure, the desire to maintain the currency board encouraged the macroeconomic adjustment and helped the restoration of credibility.

On June 28, 2001 the Central Bank of Lithuania announced that anchoring in Euro would take place on February 2, 2002 and the currency in Euro would be in circulation before the anchoring was carried out. The advertisement was received by the markets. The operation of the anchoring succeeded and was implemented as programmed. The passage of the budget 2002 with a deficit of 1.5% of GDP continued the three-year period of tax adjustment.

The advance of the structural reforms and the acceleration of growth amplify the credibility of the economic policy. The authorities and the entrepreneurs are confident in the competing of the economy.

After at least two years of participation in the ERM II, Lithuania could be able to join the EMU. The last stage will require conformity with the criteria of Maastricht and the European pact of growth and stability. The currency board is appropriate for the economic and institutional situation of Lithuania. The authorities wish to maintain it. The credibility

of the Lithuanian Central Bank increases the anchoring in Euro, and it is the main device to discipline and maintain the sustainable situation.

The Lithuanian equilibrium of exchange rate was analysed. It went up sharply over the period 1994–2001. This appreciation reflected mainly a fast growth of the productivity of the tradable goods sector compared to that of the non-tradable goods. The evaluation of the equilibrium exchange rate is based on a theoretical framework which takes into account the assumption of Balassa–Samuelson and the determination of the equilibrium exchange rate according to the approach of the balance of payments.

Alberola et al. (1995) proposed a model where there are two principal causes determining the real exchange rates identified by the net credits of foreign capital and the relative sectoral prices among the countries. The analysis was led by using quarterly data of CPI-based REER, the clear position of foreign capital is standardized by gross domestic product in order to be adjusted with the size of the country, and the index of the relative sectoral prices is built as the ratio of the price index of the consumer with the price index of the production. The period of time being studied is 1994q1–2001q3. The results must be interpreted with prudence.

In the period, the estimated equilibrium exchange rate is appreciated sharply from the first quarter of 1994 to the third quarter of 2001. In the beginning of the period, until the last quarter of 1998, the trend of the equilibrium exchange rate to appreciate itself was rather smooth, with a slight return in this tendency of 1998, varying again at the beginning of the second quarter of 2000. This secular appreciation reflected the fundamental prin-

ciples of the Lithuanian economy. In fact, the determining causes of the equilibrium exchange rate suggest that this behaviour reflects mainly the model of the productivity in the sector of tradable goods to the non-tradable goods, as indicated by the differential of sectoral price. It is important, however, to note that the index is strongly affected by the behaviour of the administered prices which increased in the period 2000–2001, independently of the productivity through the sectors, and to a certain extent by movements of oil price.

The downward trend of the net foreign capital would also contribute to the appreciation of the equilibrium exchange rate. On the other hand, for many other countries the net foreign capital enters in relation between long duration with a negative sign. This behaviour could be allotted to the fact that, for the study period, the balance of payment deficit was financed by an increased request for capital in Lithuania. The REER floated around its equilibrium level, in conformity with the results of Hodrick–Prescott. After the first period of overestimation, the REER started to be depreciated in the middle of the year 1995, and for a period of two years and a half it maintained an underestimation position, because the inflation decreased sharply. The period of overestimation started in the last quarter of 1998, following the Russian crisis, and lasted approximately six quarters.

For this period, the Dollar, and consequently the Litas, were appreciated with respect to the Euro, after the introduction of the latter in January 1999. This behaviour started to be turned over after the second half of 2000, and towards the end of the year the REER reached its equilibrium level. In the following months, the REER continued to be depreci-

ated moderately, so that in the third quarter of 2001 it seemed to be underestimated by approximately 5%. Thus, it shows that the Lithuanian economy managed to preserve its competitiveness within the framework of the currency board and can face periods of crisis, such as 1998–1999, when the real appreciation of the exchange rate was particularly marked. The main elements supporting the competitiveness were the strong growth of productivity due to the structural reforms and the capacity of the economy to reorient exports. The econometric analysis suggests that the REER was slightly underestimated relative to its level of the estimated equilibrium. It should be noted that the estimated deviations were of short duration and not large. The self-correcting mechanisms of the currency board functioned without problems. The strong export and the growth of the GDP in 2000–2001 undoubtedly contributed to the correction of the deviations of alignment of the REER.

To conclude, a certain number of conditions must be met to ensure the growth. Initially, a strict tax policy is crucial for maintaining the macro-economic balance and amplifying the credibility. The objective of the government to carry out the budget balance above the medium term would provide a flexibility sufficient to face the cyclic pressures while anchoring the credibility of the currency board.

This objective also makes it possible to maintain the balance of payment deficit below 5 to 6% of the GDP. In conclusion, Lithuania has followed a fiscal policy that already helped to approach the criteria of Maastricht, and it will facilitate adhesion with the EMU. In the second place, the structural reform is significant to maintain the medium-term growth and competitiveness. Thirdly, the external environment will continue to have substantial effects

on Lithuania by increasing the commercial partnership and the evolution of the nominal effective exchange rate, which is exogenous within the framework of the currency board.

The growth of the productivity must be stimulated by structural reforms. Lithuania has adopted since 1994 a significant mass of reforms directed towards the market (liberalization of prices, liberalization of transactions of capital account, the beginning of privatisation, and the reforms of marketing policy), which contributed to the growth over the period 1995–1998. However, the other structural reforms started to trail slightly slowing down the growth potential of productivity. In 2000–2001, the acceleration of the structural reforms, the technological reorganization and private business management stimulated by the appreciation of the REER and the reduced access to markets CIS led to a significant increase in the growth of productivity. The nominal appreciation of the Litas made pressure on the exporters to reduce the costs.

Conclusions

The coordination of the monetary and budgetary policies in the new Member States requires to reconsider the theory of the policy mix. Integration within the EU implies for these countries the necessity to answer the criteria imposed by the European institutions. However, the main economies experience more and more difficulties in maintaining these rules; it would be desirable that the institutions soften them. The founding principles of the EMU find their sources in the monetarist theory. For this current of thought, the monetary policy does not have any influence on the real sphere; inflation is purely monetary. The entry in the EMU implies the abandonment of

monetary sovereignty. The implementation of the common monetary policy is justified within the framework of the Optimal Monetary Areas, the exchange rate is fixed and irrevocable, the states cannot have divergent inflation rates.

With losing the instrument of exchange rate, the adjustment of the economic policy of the Member States, in the event of asymmetrical shocks, can be done only by means of tax policy. The latter is indirectly forced by the respect of the criteria of restoration of public finances. The EMU suffers from permanent institutional conflicts between national monetary authorities, each one having clean objectives, the European Central Bank being independent. The Optimal Monetary Area makes it possible to be free from the problems of exchange rate variations. The adjustment of the economic policy by means of exchange rate disappears for the partici-

pants of the Monetary Union. However, the new members profit from the ERM II to facilitate the coordination of the monetary and budgetary policies. Poland and Lithuania pursued different exchange rate policies by making a success of their macroeconomic adjustment.

The mobility of the labour factor is low in Europe, the criterion of homogeneity of the preferences is missing. These disparities continue in Europe. Structural differences exist in terms of the labour factor. The new members can hope by their participation in the ERM II to find a flexibility sufficient for the management of their policy mix. Indeed, it proves that only a domestic and pragmatic management of the monetary and budgetary policies is effective. It is necessary to accompany the production level on its path of potential growth.

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FISKALINĖS IR VALIUTŲ KURSO POLITIKOS POVEIKIO EKONOMIKOS ANALIZĖ: LIETUVOS IR LENKIJOS PAVYZDŽIU

Philippe Grainville

Santrauka

Straipsnyje analizuojamas Baltijos šalių monetarinės ir biudžetinės politikos koordinavimas jų visiško integravimosi į ES politikos sistemą sąlygomis. Naujosios ES narės turi vykdyti tokią monetarinę politiką, kuri garantuotų kainų stabilumą ir kitus reikalavimus, keliamus Pinigų keitimo mechanizmo II, kuriame jos turi išbūti porą metų. Šių šalių vyriausybės biudžetinis savarankiškumas tampa santykinis, jei atsižvelgiama į įsipareigojimus pagal Stabilumo ir augimo paktą. Dalyvaudamos Europos monetarinėje sąjungoje šalys negali keisti savo valiutų kursų ir todėl negali taikyti valiutų kursų politikos priemo-

nių. Tokiu atveju joms telieka biudžetinės ir fiskalinės politikos instrumentai, kuriais gali koreguoti savo ekonomikas. Pastarosios naudojimą dar riboja konvergencijos kriterijai bei Stabilumo ir augimo paktas.

Straipsnio pirmojoje dalyje pateikiama teorinė biudžetinės ir monetarinės politikos koordinavimo analizė, o antrojoje apibūdinamas taikomojo pobūdžio tyrimas, kurio metu analizuojamas Pinigų keitimo mechanizmas II, siekiant išsiaiškinti, kokios monetarinės politikos priemonės gali būti palankios ekonomikos augimui.

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