MONETARY POLICY CONVERGENCE IN THE PRE- AND POST-INTEGRATION PERIOD.
CASE OF BALTIC STATES AND POLAND

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Abstract

Economic integration is perceived as a multi-phase process in which national economic policies of a group of countries or territories are systematically coordinated and substituted by common policies. We can observe that this world-wide tendency to create regional free-trade agreements, common markets and monetary unions is beneficial for their participants. It is widely recognized that benefits from coordination and giving up national policy independence exceed costs, both economic and social ones. It can be argued that the European Union and the European Monetary Union are the role models of economic integration.

In the course of integrating New Member States that joined the EU in 2004, and later, one can expect that both nominal and real convergence takes place. This is of high importance especially for those countries, which intend to join the EMU soon. There is a set of nominal criteria to be met, but their economic justification is not clear. They are not associated with the optimality criteria of the classical Optimal Currency Area theory. Despite they are intended to induce convergence, many economists criticize them as too strict in terms of their definitions. As a half of century of experience of the non-European monetary unions tells us (Młodkowski 2007), neither inflation nor fiscal deficit represents a reason for rejecting a prospect member. It is argued that compliance with any of the criteria is achievable at lower costs (social and political) after full monetary integration due to endogenity. What matters is the monetary policy stance convergence in the pre-integration period among monetary union member states. Only then substituting domestic monetary policy with a common one will not generate any shocks for the underlying economies. Therefore, it would be reasonable to reform the current set of nominal convergence criteria and introduce a new one, covering monetary policy stance convergence.

In order to implement this idea a convenient, simple and easy to understand method is required for capturing monetary situation. The literature on measuring restrictiveness of monetary policy is vast and still growing. One of the newest approaches that could be quite convenient for the proposed reform is based on an alternative interpretation of the money velocity short-term shocks. According to Reynard (2007) these are fully a reflection of monetary policy. The paper utilizes the Monetary Policy Stance Indicator created and developed by Młodkowski (2007, 2008a, 2008b, 2009) to present tendencies in monetary policy restrictiveness in four countries: Estonia, Latvia, Lithuania and Poland over the period from 1998 to 2008. Hypothesis posed deals with expected tendencies in domestic policies in countries that were advancing in economic integration and became full members of the EU in 2004. Similarities and differences in monetary policy stance should be attributable to some global events and regional developments. Data source for the empirical study is the International Financial Statistics by the International Monetary Fund (January 2009). Statistical methods cover simple correlation and co integration analysis of time series representing monetary policy stance in a form of the MPSI.

Keywords:

Monetary integration, MPSI, convergence, monetary policy.

Introduction

Economic integration covers both the private sector and public institutions shaping economic policies. There is a direct influence of strengthening international cooperation on effectiveness of achieving domestic policy goals. Moving from customs unions to common markets and full monetary unions results in sequential giving up autonomy in trade policy, sectoral policies and finally monetary policy. The motivation is based on expectations that micro- and macro-level benefits will overweight any potentially associated costs. The most important costs are recognized as an inability to introduce country-specific measures, when needed. This is already at the stage of full economic union with three freedoms of the common market, when domestic monetary policy starts to loose its effectiveness. This is a consequence of an access to a broad selection of financial instruments by general

public. In such a setting, controlling nominal variables requires additional instruments and some of the standard tools are less effective. In particular, diversification and low-cost substitution of financial assets worldwide results in a drop of efficiency with most of monetary policy channels. Loss of effectiveness is not a problem in the EU economy, as long as economic activity in every country develops according to similar paths. Then the real interest rate differentials should decrease for assets denominated in different currencies. As a consequence we observe a very similar monetary policy stance among countries. Attempts to conduct significantly different monetary policy would be inducing monetary shocks leading to capital flows. Therefore, as long as business cycles are highly positively correlated in a group of integrated countries, monetary policy should also be similar in its stance. The scientific problem undertaken in this paper deals with similarity of monetary policy stance in a group of integrated countries that still maintain their national currencies (Estonia, Latvia, Lithuania, Poland). Novelty of the proposed research results from the fact that this was not studied before. There are no studies of monetary policy stance covering more than one country at once. In addition, concerning the implemented nominal convergence criteria – the convergence of monetary policy stance is not included, despite it seems a natural prerequisite for smooth substituting a domestic monetary policy with a common one. The object of the study is the monetary policy stance and its developments in four countries that joined the EU in May 2004, and which are heading toward the EMU accession. The analyzed period covers years 1998-2008. Research methods cover the Monetary Policy Stance Indicator used for capturing restrictiveness in a quantitative form and simple correlation and cointegration analysis.

The paper is composed as follows. Part II discusses shortly methods for measuring monetary policy and introduces briefly methodology of capturing restrictiveness of monetary policy for international comparative studies. Part III is an empirical study of monetary policy stance convergence of four countries from 1998 to 2008. The last part concludes.

A new method to capture monetary policy stance

There is a variety of variables that were used as proxies of monetary policy stance. There were however so far no methods that were developed for international comparative studies in this area. This was because most of methods offered up to date were very case-specific and designed for a particular country.[1] According to Bernanke and Mihov (1998), the first methods of capturing

monetary policy stance were based on rates of change of money aggregates. This was methodologically incorrect approach since the actual restrictiveness developments depend on a final result of interaction between money demand and money supply. When measuring monetary policy stance, using only one of these two categories, one gets an improper image. Another approach to measuring monetary policy was introduced by Friedman and Schwartz (1964) and developed by Romer and Romer (1989) and Boschen and Mills (1991). This method is based on qualitative information derived from official documents of a decision-making body (a central bank or an internal committee). The main disadvantage here is subjectivity. Another problem is associated with its qualitative nature. The method allows only for recognizing timing of changes.[2]

Most methods used in assessing restrictiveness offer quantitative information. These are:

- synthetic indexes combining qualitative and/or quantitative information (MCI),
- residuals of regression equations interpreted as orthogonal monetary shocks (Christiano, Eichenbaum 1992),
- difference between interest rates (actual and obtained from the Taylor rule)
- yield curve,
- rates of non-borrowed reserves (Bernanke and Mihov 1998).

All these methods were used for one-country studies to answer questions concerning monetary policy influence on an economy. None of the known studies focused on comparative analysis of monetary policy stance developments in a group of countries. For such a quest to succeed one requires a method to measure monetary policy in a way that is independent from country-specific characteristics.

There is a new way to approach monetary policy assessment, that allows for international comparative studies. Theory behind this methodology is derived form the Fisher's equation and brings together developments in money demand and supply. This direction of research was suggested for many years by many authors (Christiano, Motto, Rostagno 2007, Leeper and Roush 2003, Mulligan and Sala – I – Martin 1997, IMF 2008).

Reynard (2007) claims that short-term velocity shocks are an immanent element of the monetary transmission. Therefore, there is an alternative interpretation for those short-term developments. Increases in velocity of circulation means that the transaction money supply shrinks in relation to transaction demand for money. Less money should be interpreted as a move toward a more restrictive policy stance. Stable money velocity in

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[1] This is because the way of defining monetary policy, operational instruments used as well as characteristics of financial markets were the main inputs and factors shaping the final results.

[2] Shapiro (1994) offers another disadvantage in the form of inability to divide all considered factors into categories of dependent and independent from monetary policy.

the short run means a neutral policy. A drop in velocity appears with monetary expansion. This interpretation is based on a stylized fact about behavior of the real sector. Transactions in the national economy are relatively stable and any changes reassemble the real GDP movements. Even a sharp change in the number of transactions (temporary supply shock) has negligible effects on prices. Therefore, the real money supply does not adjust to buffer the initial shock in 100%. In the monetary economics this feature is known as the short-term money non-neutrality. In such a setting demand for nominal cash balances is rather constant and develops with the real GDP path. Therefore, the observed short-term shocks to velocity should be attributed to monetary policy. This is because prices are not flexible enough to fully adjust and remove entire influence of the initial real shock of the nominal GDP.

For the purpose of international comparative studies money velocity itself (V=GDP/M0) is not the appropriate variable because it depicts the underlying society. Information about monetary policy is provided by changes in velocity of circulation defined as $\delta V = \delta GDP / \delta M0$. Monetary Policy Stance Index (MPSI) is nothing else but the first difference time series of money velocity. The advantages of this approach are: simplicity, intuitive interpretation, lack of the need to model non-observable variables. In this paper the MPSI will be used for analyzing monetary developments in four integrated economies that are heading toward full monetary integration.

Pre- and Post-Integration Convergence of Monetary Policy Stance in ELLP countries

The group of Baltic States (Estonia, Latvia and Lithuania – ELL) started a period of a unprecedented economic growth from the moment of the EU accession in 2004. According to the World Economic Outlook (IMF 2008), over the four-year period (2004-2007) they experienced the following total growth rates: Estonia 37,8%, Latvia 48,8% and Lithuania 36%. Poland in the same time recorded much lower growth, by 23,5%. When analyzing other new member states (Romania and Bulgaria) one can recognize also a dynamic growth that may be attributed to the EU accession. Therefore, it should not be questioned that, in the mentioned cases, economic integration was the main driving force of the observed GDP growth. Removal of trade barriers, liberalizing all BOP accounts and allowing for the free flow of labor resulted in increasing the positive correlation of business cycle phases among these countries. This is nothing else but the gist of the nominal convergence criteria – that are aimed at bringing all EMU countries in a similar cycle phase prior to accession. Another possible interpretation is that the optimality criteria for a currency union are endogenous and strict adherence to meeting all nominal criteria is not reasonable because they will be

satisfied much easier (at lower social cost) and almost automatically after full monetary integration.

However, for this process to be smooth – one should remember that for substituting national monetary policy with a common one – it is necessary for all prospective members to be in the same monetary policy stance on the eve of monetary integration. Otherwise, the fact of accession will result in a monetary shock associated with imposing a different stance. It could be reasonable to introduce a new convergence criterion based on similarity in monetary policy stance of all prospective EMU members. Using the MPSI one can answer the question about developments of this feature in Estonia, Latvia, Lithuania and Poland.

High positive correlation (close to unity) indicates that monetary policy stance was identical in a pair of countries. Restrictiveness was changing in the same time and in the same direction. We can observe such behavior quite often for Estonia and Lithuania and Estonia and Latvia. There are however periods of temporary divergence that are possible due to the fact of still independent monetary authorities in each of the countries analyzed. Poland seems to be a quite different case. Monetary policy of the National Bank of Poland differed in biggest extent over the studied period. In the long run we can observe however a slow but systematic increase in similarity (LI-PO).
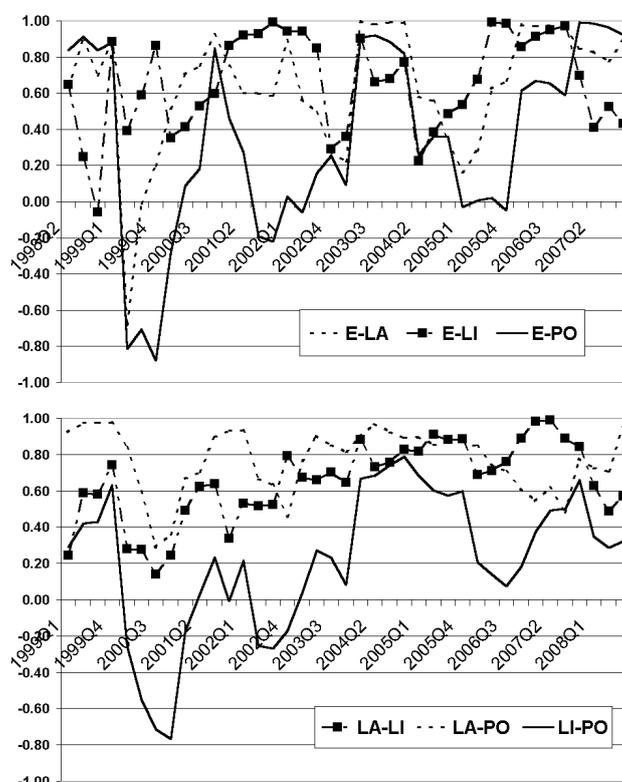
Source: Author.

Fig. 1. Correlation coefficients for MPSI in ELLP countries for a 4-quarter moving window over 1998Q1-2008Q1 (E-Estonia, LA – Latvia, LI – Lithuania, PO - Poland)

Remarkable is a temporary convergence in monetary policy stance in 2004 of all ELLP when the counties joined the European Union. After this period some divergence appeared, but monetary policy in the Baltic States became almost identical again in 2006. Since then, high positive correlation prevailed, except for Estonia and Lithuania for 2007Q2-2008Q3 when the global financial crisis started. All other countries (Estonia, Latvia, Poland) increased similarity of their monetary policy in the most recent period. Lithuania's divergence could be attributed to significant increase of the inflation rate in the most recent period. As a consequence, a different stance was observed due to specific countermeasures to address this problem.

Augmented Dickey-Fuller statistics indicate stationary behavior of the MPSI for all four countries (Table 1).

Table 1. ADF test for MPSI in ELLP countries (critical values: * at 5%=-1.949, ** at 1%=-2.62).

	t-adf
ES	-6.5593**
LA	-7.4551**
LI	-5.9891**
PO	-8.6299**

Source: Author.

Beta eigenvectors in two simple cointegration models (with a two-quarter lag) for MPSI in ELLP countries estimated for two periods: A: 1998Q1-2004Q1 and B: 2004Q2-2008Q3 indicate that there was a change in the behavior of monetary policy stance.

β_A = [ES   LA   LI   PO] = [1   3.0758   −11.936   8.2251]

β_B = [ES   LA   LI   PO] = [1   −0.27686   −0.50114   −0.3394]

In addition the whole system seems to return to equilibrium much faster in the latter period. The error correction mechanism is characterized with much higher absolute values of alpha coefficients for the B period.

α_A = [ES   LA   LI   PO] = [0.033056   −0.056812   0.10763   −0.12167]

α_B = [ES   LA   LI   PO] = [−0.33126   0.12562   2.5080   −1.6382]

The presented results of a moving correlation analysis and a simple VECM model for ELLP countries allow to conclude on a transition of the monetary policy in the region.

Conclusions

After a long period of exclusion from the global economy, Estonia, Latvia, Lithuania and Poland initiated economic transformation in 1990s. They were successful and managed to move to a system based on private ownership of production factors. The enormous effort of societies in ELLP countries was supported by global trends in liberalization of trade and investment and regional economic integration within Europe. The phase of transformation and economic integration was finalized with accession to the European Union in 2004. From that moment all these countries benefited from three freedoms of the common market. One could expect that such a framework would facilitate further real and nominal convergence. This is a matter of high importance for all prospect EMU members. According to the results, obtained in the presented research, the four countries were conducting a distinct monetary policy prior to the EU accession (2nd quarter 2004). The similarity in monetary policy stance was expected to appear systematically after full economic integration. It is fully justified to claim that such a similarity in monetary policy stance, resulting from real and nominal convergence, was increasing after the EU accession. Convergence in monetary policy in the analyzed period (until 3rd quarter 2008) was not only in the form of strong cointegration but also in an ability to overcome any disturbances much faster, than in the former period. All these observations based on VECM models indicate that Estonia, Latvia, Lithuania and Poland were subject to significant real and nominal convergence that should allow them to become successful members of the EMU in the future.

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