

## DEVELOPMENT OF CENTRAL BANKING IN THE EUROPEAN SYSTEM OF CENTRAL BANKS: CASE OF LATVIJAS BANKA

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### Abstract

This paper discusses the development of central banking in the circumstances of the European Common Market, globalised banking industry and financial market complexity. Central banks make up an essential part of the financial sector. The establishment of the European Central Bank (ECB), the formation of the European System of Central Banks (ESCB) in 1998 and the enlargement of the European Union (EU) on 1 May 2004 as well as on 1 January 2007 was a turning point for the EU national central banks (NCBs). The process of the EU enlargement was accompanied by the formation of some groups of the NCBs: the NCBs of the old EU countries (EU15) and the NCBs of the new EU Member States (EU12). The analysis of the performance indicators of a number of the NCBs points to substantial differences between the given groups of the NCBs and there are good opportunities for promoting the integrity of the ESCB. Following the centralisation of a part of the decision-making process, the effectiveness and efficiency of the NCBs were questioned.

Specific development circumstances in each country have determined the mode of operation and the place of the central bank in the financial environment. At the same time in the context of financial market globalisation and turbulences, the central banks are subject to financial risks. The paper pursues the aim to propose solutions for further improvements in the ESCB's operation and policy. In the pursuit of the objectives set, the authors have made use of such methods as the statistical analysis of indicators, and the graphic and monographic approach. The authors build their research on the analysis of operational results of the NCBs and views of a number of researchers on various aspects of modern central banking. Some differences have been detected for several indicators of central banks of the EU15 and EU12 countries; they prove that there is still room for improving the integration, effectiveness and efficiency of the ESCB. The findings of the research suggest that there exists a closer relationship between the NCB performance indicators in the EU12 and EU15 countries and that the integration process is gaining momentum. The indicators characterising operational efficiency of Latvijas Banka become more aligned with those of the other NCBs, however the differences still remain. The innovative aspect of this paper lies in finding trends for the performance indicators and policy developments of the EU12 countries' NCBs. The development of an NCB rating system and the analysis of rating position of the NCBs of the Baltic States in the period between 1999 and 2007 are among the novelties of the research.

### Keywords:

European System of Central Banks, central banking, independence, efficiency, integration.

### Introduction

Central banks operate in the circumstances of globalised banking industry and financial market complexity, and they make up an essential part of the financial sector. The establishment of the European Central Bank (ECB), the formation of the European System of Central Banks (ESCB), including the Eurosystem, in 1998 and the enlargements of the European Union (EU) on 1 May 2004 and 1 January 2007 were the turning points for the EU national central banks (NCBs). The process of the EU enlargement was accompanied by the formation of some groups of NCBs: the NCBs of the old EU countries

(EU15), the NCBs of the new EU Member States (EU12), including 10 EU countries which joined the EU in 2004 (EU10), and two EU countries (BG, RO), which acceded to the EU in 2007. Similar to central banks in other EU10 member states, Latvijas Banka, Lietuvos bankas and Eesti Pank have actively participated in the ECBS already for five years, while cooperation with NCBs in EU15 countries commenced prior to the EU enlargement; hence it is important to investigate how the entry into the ESCB affects the operation and performance of NCBs in EU12. The authors build their research on the analysis of operational results of the NCBs and views of

a number of researchers on various aspects of modern central banking. The innovative aspect of this paper lies in finding trends for the performance indicators and policy developments of the EU12 countries' NCBs. The development of an NCB rating system and the analysis of the rating positions of NCBs of the Baltic States in the period between 1999 and 2007 are among the novelties of the research.

The paper pursues the aim to propose solutions for further improvements in the ESCB's operation and policy. In the pursuit of the objectives set, we have made use of such methods as statistical analysis of indicators, and the graphic and monographic approach. The authors of this paper have conducted comparative analysis of a number of authors' works dedicated to various aspects of the central bank operation. The study has made use of NCB financial reports for 1999–2007, Eurostat data on EU population and GDP at market prices as well as average exchange rates set by the ECB. ISO 3166-1-alpha-2 code elements have been used for EU country names used in this paper.

### **NCB History, Cooperation and Activities**

The origins of central banks date back to the second half of the 17th century. The gap between the foundation of the oldest NCB (Sveriges Riksbank) and the youngest one (Banque centrale du Luxembourg) is 330 years. Upon joining the euro area, Luxembourg had to remodel its monetary authority (Luxembourg Monetary Institute), and the central bank of Luxembourg was established in 1998. Although Българска народна банка and Banca Națională a României are ranked as the youngest members of the ESCB, they are the oldest NCBs in EU12 countries, founded in 1879 and 1880 respectively. Five NCBs of EU10 countries (EE, HU, LV, LT, PL) were established in the first half of the 20th century, while the other five (CH, CY, MT, SI, SK) came into being in the second half of the 20th century. NCBs in the Baltic States were founded at the beginning of the 20th century, subsequently had to terminate their operation in 1940, and resumed it again in 1990.

The formation of the ESCB can be viewed as an epoch-making achievement, both in institutional and economic policy terms, which was driven by NCB cooperation prior to the formation of the ESCB. This cooperation has gone through ascents and declines, but the broad trend nonetheless has been upward (Eichengreen, 2006). There is a long and complex history of attempts at monetary cooperation in Europe, following the European Payments Union, and the ultimate form of central bank cooperation was achieved in 1998 when the ECB was created (Cooper, 2006).

The closest is cooperation among the euro area central banks, as the monetary policy making process of these

banks is centralised and vested in the ECB Governing Council. Latvijas Banka has been cooperating with NCBs in EU countries since the early 1990s and this cooperation has been of paramount significance at the time when a contemporary central bank was to be formed in Latvia. Cooperation was the closest with Deutsche Bundesbank and NCBs in the Nordic countries. When the present EU10 countries entered the EU candidate countries' phase, the ECB was among their NCB's cooperation partners in a number of important areas (payment systems, statistics, etc.). The expertise of the authors supports the assumption that along with tackling monetary policy issues contemporary NCBs today are involved in the activities that are related to smooth operation of payment systems, financial stability, and collection and compilation of statistical information more often and actively than ever.

The efficiency of NCBs, however, was subject to criticism, as the euro area central bank functions in the realm of developing monetary policy and its implementation, particularly after the establishment of the ECB and adoption of the euro, shrank both in number and significance. Hence the NCBs of the euro area are to adjust to the new environment and proceed with effective implementation of the tasks prescribed by the ESCB and respective national legislation (Stark, 1999). All other EU12 non-euro area NCBs in their operation shall aim at minimising potential risks and promoting successful integration in the Eurosystem.

Within the ESCB, there is some contradiction between the centralised decision-making and decentralised decision implementation processes. The ESCB is characterised by the fact that the most important decisions are taken in a centralised manner by the ECB Governing Council and the ECB General Council, while their implementation depends on decentralised activities of the NCBs. The NCBs are subscribers to and holders of the capital of the ECB. The share of NCBs in the subscribed capital of the ECB or the key for capital subscription is determined on the basis of the respective country's average proportion in the EU population and GDP for the period of the last five years. The revision of the ECB capital is conducted every five years: the first on 1 January 2004 (see Pilsuma, Svarinskis, 2006b) and the latest on 1 January 2009 (see Table 1). The share of NCBs of the EU12 in the ECB capital accounts for 13.17% (ranging from 0.0632% to 4.8954%), which is less than the share of central banks of the three largest euro area countries. Narodowy Bank Polski accounts for 37.2% of the EU12 NCBs' share in the ECB capital, whereas the share of the Baltic States' NCBs reaches 0.9%. The key for capital subscription affects the distribution of profit and monetary receipts but does not influence the decision-making process directly related to the execution of the ESCB activities.

As a result of the second regular adjustment of the ECB capital, the ECB capital share of the EU15 countries' NCBs decreased (−0.1405 percentage points) and that of the EU12 countries increased (0.1405 percentage points). The increase or decrease in the share of subscribed ECB capital share is a reflection of changes in the significance of the economy or population in respective EU countries during the last five years. As of 1 January 2009, the share of 7 EU15 NCBs (AT, BE, DE, DK, FR, IT, SE) in the ECB's capital decreased, whereas that of 8 EU15 NCBs (EL, ES, FI, GB, IE, LU, NL, PT) increased. Banco de España recorded the largest increase of its share in the ECB's capital (0.75 percentage point), while the most substantial decrease in the capital share was experienced by Deutsche Bundesbank (1.58 percentage points). As to EU12, the share of 10 NCBs in the ECB capital increased, while that of two of them (BG, RO) decreased. As to the NCBs of the Baltic States, Eesti Pank, followed by Lietuvos bankas and Latvijas Banka, recorded the largest increase of its share in the ECB capital.

**Table 1. ECB capital structure in 2004–2009**

NCB countries	ECB capital subscription key (%)			Changes (in percentage points) (4–3)
	01.05. 2004	01.01. 2007	01.01. 2009	
1	2	3	4	5
EU15	89.853	86.969	86.828	−0.141
of which:				
DE				
FR	21.136	20.521	18.937	−1.584
GB	14.871	14.387	14.221	0.583
IT	14.382	13.934	14.517	−0.166
LU	13.052	12.530	12.497	−0.033
	0.157	0.158	0.175	0.017
EU12	10.147	13.031	13.172	0.141
of which:				
PL				
LT	5.138	4.875	4.895	0.020
LV	0.443	0.418	0.426	0.008
EE	0.298	0.281	0.284	0.003
MT	0.178	0.170	0.179	0.009
	0.065	0.062	0.063	0.001
Total	100.0	100.0	100.0	–

The governors of each euro area NCB have one vote on the ECB Governing Council but the situation is going to change when the number of the euro area countries exceeds 15; then a new ECB decision-making procedure, which allows to raise the number of the EU countries to 27, will take effect and stipulate that, though the governors of the euro area NCBs may participate in the discussion of the monetary policy issues, the number of the voting governors of the euro area central banks on the ECB Governing Council shall not exceed 15

(Scheller, 2006). From 1 January 2009, NCB governors of four EU12 countries (CY, MT, SI, SK) are sitting on the ECB General Council as these countries have entered the euro area and participate in the euro area decision-making process. Although the number of NCBs represented on the ECB General Council exceeds 15, information at the disposal of the authors shows that the new order of rotation in the decision-making process has not been introduced as yet, hence the proportion of votes in decision-making is 6 ECB Executive Board's votes against 16 NCB Governors' votes.

The size of the ECB Governing Council is still a problem even after the reform of the ECBS and ECB Statutes in 2003; and the decision-making costs will be notably higher than in the majority of other central banks (Berger, 2006). The studies of the central bank governance in 113 world countries have led to the conclusion that there are various ways of forming an adequate structure. They found that the majority of boards at the end of 2003 comprised 7–9 members (Lybek, Morris, 2004). The issue of how strong the regional or national influence should be in the decision-making process is put to debate. The leaders of euro area NCBs shall support the interests of the EU (or the centre) in voting for monetary policy and other issues related to the objectives of the Eurosystem, the authors believe that the detachment from national interests could be a problem for the leaders of NCBs. The ECB should direct its monetary policy towards the needs of its larger members, with a particular focus on Germany, because the latter has always been the locomotive of European economy and when Germany failed to do so, all Europe suffered (Why the ECB..., 2006).

Under the impact of globalisation processes, financial markets and financial instruments evolve buoyantly, presenting new challenges to NCBs in terms of functional perfection.

### Characteristics of Modern Central Bank

The development and functioning of financial markets have been notably affected by the introduction of the euro and electronic trading platforms, changes in the composition and activities of the market participants, and the supply of various assets, which, in turn, present problems to NCB policies – from strategic to operational ones (Barth III et al., 2003). The environment in which central banks function is subject to changes, and so are central bank functions not only in the EU but all over the world (Padoa-Schioppa, 2006). The need to re-assess the functioning of the NCB and its place in managing the economy builds on several factors: deregulation of financial markets, globalisation of the banking industry, sophistication of the financial market, etc. (Hawtrey, 1997).

Of such factors, there are several that determine the need to re-assess the performance of NCBs and their place in the economic governance (see Table 2). The NCB performance has been affected by both globalisation processes and the appearance of new financial instruments and technologies in the financial market. According to the authors, as a result of geopolitical changes (this factor should be added to international aspects in Table 2) and innovations the financial complexity has increased and financial market participants are not always able to manage the new instruments and the related risks, which is well-confirmed by the 1998 financial crises in Asia and Russia, events in the US on 11 September 2001, and the turmoil of the global financial system caused by the US real estate market in 2007 in particular. It should be noted that the economic theory provides only limited guidelines how to manage monetary policy in the process of so complex structural corrections and institutional changes; similarly, historical knowledge is of little help to clarify the situation which seems to have no precedent (Lamfalussy, 1985). NCBs cannot draw lessons from historical experience and a prudent NCB representative should be progressive and seeking for such development trends that may, in certain circumstances, turn into essential problems (Ferguson, 2006).

**Table 2. Factors affecting NCB activities**

Factor description	Lamfalussy's factors (Lamfalussy, 2001)	Hawtrey's factors (Hawtrey, 1997)
Macroeconomic aspects	Disinflation	–
International aspects	Internationalisation	Globalization of banking industry
Instrumental and technological aspects	Innovation	Financial market complexity
Institutional aspects	Deregulation	Deregulation in financial markets

Institutional evolution takes place along with the development of the economy and undoubtedly, NCBs must adjust to the new trends. In order to facilitate functioning of the financial markets in contemporary environment, central banks should boost market liquidity, improve strategic and tactical aspects of monetary policy setting (participation in transmission mechanism, drivers of information inherent in financial asset prices, communication of the central bank with the market) and market operations (including domestic liquidity management operations, foreign reserve management and interventions in the exchange market) (Barth III et al., 2003). At the same time, central banks should be realistic and pragmatic in order to correctly assess the changing financial and economic conditions, to make their political decisions on the basis of such assessments

and to present the former in a transparent way to the public (Trichet, 2005).

The operation of a modern NCB is characterised by independence, transparency, accountability and credibility, with two more descriptive adjectives efficient (meaning economic and productive) and effective (meaning producing an effect and being powerful) often added. The studies of the meanings of the two terms lead to the conclusion that the first term is more associated with operational income and costs, i.e. the financial aspect, while the second one reflects the operational usefulness. So the analysis focuses on how knowingly (productively) central banks carry out their tasks. Effectiveness demands doing the right things, while efficiency demands doing things right; he also adds a new third dimension of achievement, which he calls exploration that demands influencing things in a new way (Menzela, 2002). Using exploration, central banks can greatly help the society make transition from power to knowledge and from politics to economics.

### **NCB Independence, Transparency, Effectiveness and Efficiency**

The Treaty of Maastricht stipulates that legislation of the EU Member States should ensure independence of their NCBs. However, the authors of this study think that NCBs are losing their independence to some extent due to the need to respect the ECB decisions and instructions in the conditions of major NCB influence on the decision-making process. This influence depends on the size of the economy, in which the respective NCB operates, population of the country, the share of these two indicators in overall EU indicators, and the potential of NCB's labour resources.

The European Monetary Institute (EMI) established a list of characteristic features of NCB independence in 1997, and at that time formed the basis for the assessment of national legislation of the EU Member States (EMI Convergence Report, 1998). The concept of NCB independence comprises four aspects of independence: functional, institutional, personal and financial. The aspect of NCB financial independence has been refined due to NCB financial independence being most vulnerable to outside influence (ECB Convergence Report December 2006). The authors of this paper share this view because in practice there have been attempts to alter NCB financial conditions via political pressure. Such was the case with Latvijas Banka when, upon making amendments to the Law "On Latvijas Banka" not related to the aspects of financial operation of the central bank, the terms and conditions of profit distribution were simultaneously changed.

As the ESCB and ECB statutes cannot be amended by legislation but only by introducing amendments to the

Treaty of Maastricht, which, due to the need for leaders of all countries to agree on respective amendments, is a complex procedure, the ECB ranks as the most independent central bank of the world (Mishkin, 2003). The Treaty of Lisbon or the so-called Reform Treaty amending the Treaty of Maastricht also consolidates independence of the ECB. However, a political discussion about the ECB independence started in the summer of 2007. French official representatives, objecting to the high exchange rate of the euro, proposed that the monetary policy of the ECB should be coordinated with the governments of the euro area countries. The French stance is not supported by German authorities and ECB. Consequently, the discussion between two major EU countries on policy interest rates and exchange rate policy has been renewed.

When assessing national legislation of 10 EU Member States (BG, CZ, EE, HU, LV, LT, PL, RO, SE, SK), the ECB refers to the provisions of national legislation in eight EU countries (excluding LT and SK), which the ECB considered to be problematic either from the perspective of an NCB's independence within the ESCB or from the perspective of its subsequent integration into the Eurosystem (ECB Convergence Report May 2008). As to Latvia, the functional, institutional and personal independence of Latvijas Banka should be enhanced via amending the law "On Latvijas Banka".

In the opinion of the authors of this paper, NCB transparency is a reaction to the growing independence of NCBs; transparency shall be used to ensure accountability or for reporting NCB operational functionality to authorities and disseminating it to the public at large, thus providing for democratic legitimacy of an independent NCB. The authors maintain that transparency is desirable from the economic point of view as well, for it enables a higher degree of understanding in economic agents, the financial sector participants in particular, about the NCB decision-making process and operational functions, such knowledge, in turn, reducing misunderstandings in economic decisions-making, planning and forecasting economic activities, and the outcomes thereof.

NCB transparency is difficult to appraise objectively and different types of transparency are difficult to compare, hence the focus should be on assessing information clarity rather than its volume (Eijffinger et al., 2008). The degrees of NCB transparency differ; nevertheless, banks with a formerly lower transparency level are progressively affected by an upward tendency. This tendency is unambiguous: the period of NCB non-disclosure is over (Blinder et al., 2001). Although the role of transparency is acknowledged, there is no unanimity, either among academia or central banks, as to the degree of transparency and optimum communication strategy due to several factors, e.g. the size of the economy, its structure and complexity, political environment and

characteristics of the NCB as an entity, goals and strategy of monetary policy, uncertainty facing policymakers, and differing appraisals of volume and type (Papademos, 2008).

The studies of the annual financial statements of NCBs for 1998–2006 led to a conclusion that despite some alignment in form and content, the financial reports differ overall and across the euro area countries, notwithstanding the consolidated balance sheet of the Eurosystem prepared by the ECB. There are differences in reporting NCB operational expenses (e.g. differing disclosure and classification of expense) and the number of employees (e.g. the average number of employees, their number at the end of the year, full-time equivalent, etc.). However, the key items on NCB financial statements are similar, and the respective data can be used for comparison of development trends characteristic for NCB performance indicators.

On the basis of practical realisation of central bank transparency (Geraats, 2002), the authors of this paper have assessed transparency of the ECB and Latvijas Banka using a 3-point system, in which 2 points indicate full transparency, 1 point refers to transparency with room for improvement, while 0 means absence of transparency. Overall, the ECB transparency assessment at the end of 2007 was 7 points above that of Latvijas Banka, and 9 points behind the maximum score. Compared with the assessment in 2005, Latvijas Banka has increased its operational transparency, more explicitly formulating the procedure for using monetary instruments, which became effective in March 2007 and is aligned with monetary policy instrument procedures of the Eurosystem. In order to achieve the transparency level of the ECB, the author believes that Latvijas Banka should focus on improving its economic and political transparency. Likewise, the autonomy of the central bank's decision-making bodies and their members shall be improved by introducing amendments to the law "On Latvijas Banka" in compliance with the guidelines of the ECB Convergence Report May 2008.

Under normal market circumstances, central banks should gain profit; their inability to deal with the problems of incurred loss or future negative net value would obstruct the monetary policy management and undermine independence and credibility of the central bank (Dalton, Dziobek, 2005). Taking into account its commitments and assumed risks, the central bank must be financially strong and able to make regular profit (Stella, 2002, 2008). Duly accounting for impressive profit and loss shocks to which central banks are subject, they may need ample capital and reserves at their disposal. Dealing with central bank efficiency, several indicators characterising the central bank expense, number of employees, staff costs, return on assets and net worth may be useful (Pilsuma, Svarinskis, 2006a, 2007).

## NCB Rating

Establishing a system of NCB rating would allow listing of NCBs on a comparative basis of operating indicators. For this purpose, a method enabling the comparison of performance of several heterogeneous indicators has been used. This method has been successfully applied in the estimation of the Scottish Index of Multiple Deprivation.

First, NCB indicators ( $x_j$  where  $j=1, 2, 3, \dots, k$ ) characterising banks' efficiency and effectiveness are selected. Value  $x_j$  of NCB indicator  $i$  is denoted as  $x_{ji}$  where  $i=1, 2, 3, \dots, N$ . Assuming that the worst NCB performance corresponds to the largest value of variable  $x_j$ ,  $x_{ji}$  series is arranged in ascending order with fractional rank set for each NCB:

$$R_{x_{j,i}} = \frac{\text{rank}(x_{ji})}{N} \quad [1].$$

In the event that a better performance corresponds to the largest value of  $x_j$ ,  $x_{ji}$  series is arranged in descending order, and as previously each NCB is assigned a fractional rank. Thus, for NCB  $\bar{i}$  with the best performance relative to indicator  $x_j$  the value of

fractional rank is  $R_{x_{j,\bar{i}}} = \frac{1}{N}$ . On the other hand, for NCB  $\bar{i}$  with the worst performance relative to indicator  $x_j$  the value of fractional rank is  $R_{x_{j,\bar{i}}} = \frac{N}{N} = 1$ .

To compare NCB performance on the basis of several indicators, weighted total of individual indicators is derived:

$$\tilde{R}_i = \sum_{j=1}^k W_j \cdot R_{x_{j,i}} \quad [2],$$

where  $W_j$  ( $W_j > 0, \sum_j W_j = 1$ ) are adequately selected weights of NCB individual performance indicators.

The selection is done so that the weights applied to a more significant indicator are larger than those applied to a less significant indicator. However, an NCB aggregate performance indicator in terms of weighted total has the following feature: NCB performance results that are very poor relative to one indicator are offset by the same results being better relative to another indicator. To minimise such an effect, exponential transformation of fractional ranks is performed:

$$X_{ji} = -23 \cdot \ln \{1 - R_{x_{j,i}} \cdot [1 - \exp(-100/23)]\} / 100 \quad [3].$$

Then the NCB aggregate performance indicator is obtained as weighted total of transformed individual indicators:

$$R_i = \sum_{j=1}^k W_j \cdot X_{ji} \quad [4].$$

The choice of a constant equal to 23 in the exponential transformation can be reviewed. It should be noted that other researchers using exponential transformation in similar situations also opt for constant 23 (Okrasa et al., 2006).

In order to compare NCB performance indicators for 2007, the authors of the paper have used the rating methodology proposed by V. Pilsuma (Pilsuma, 2008b). For the purpose of assessing efficiency of the NCB performance 5 indicators are used: foreign reserves ( $x_1$ ), loans to credit institutions ( $x_2$ ), capital and reserves ( $x_3$ ), net interest and similar income ( $x_4$ ) and operating expense ( $x_5$ ). Indicators  $x_1, x_2$  and  $x_3$  are obtained from NCB balance sheets, while indicators  $x_4$  and  $x_5$  come from NCB profit and loss statements. Indicator  $x_1$  represents NCB gold and foreign currency assets in foreign currencies (claims to non-residents). Indicator  $x_2$  predominantly is loans to credit institutions issued in compliance with the monetary policy pursuit. Indicator  $x_3$  includes NCB capital, valuation account, provisions, reserve for general bank risks, accrued losses, retained earnings and other reserves. Indicator  $x_4$  includes net interest income, net results of financial operations, write-offs and changes in provisions, net income from commissions, participating income and net result of total monetary income pool (euro area NCBs). Indicator  $x_5$  includes labour remuneration and other staff payments, administrative expenses, depreciation of fixed assets and amortisation of intangible assets, banknote productions costs, expenses of previous periods, other accruals and payments. In order to minimise the effects of the country size (that cardinally differs across the EU) on NCB performance indicators, the latter are related to the population of each respective EU country.

The weights  $W_j$  of individual NCB's performance indicators in equation [2] shall be selected so that the weights applied to a more significant indicator are larger than those applied to a less significant indicator. First, when determining the overall rank it is assumed that all five NCB performance indicators are equally significant. Consequently, the following weights are used to obtain the weighted total:  $W_{x_1} = W_{x_2} = W_{x_3} = W_{x_4} = W_{x_5} = 0.2$  (rating RRR0). In addition, other weight versions are used to accentuate NCB relationship with the economic sectors, performance efficiency and financial stability, and protection against potential risks respectively:

- 1)  $W_{x_1} = 0.1, W_{x_2} = 0.1, W_{x_3} = 0.3, W_{x_4} = 0.25, W_{x_5} = 0.25$  (rating RRR1);
- 2)  $W_{x_1} = 0.1, W_{x_2} = 0.1, W_{x_3} = 0.3, W_{x_4} = 0.2,$

$W_{x_5} = 0.3$  (rating RRR2);

3)  $W_{x_1} = 0.3$ ,  $W_{x_2} = 0.1$ ,  $W_{x_3} = 0.1$ ,  $W_{x_4} = 0.3$ ,

$W_{x_5} = 0.2$  (rating RRR3);

4)  $W_{x_1} = 0.1$ ,  $W_{x_2} = 0.1$ ,  $W_{x_3} = 0.2$ ,  $W_{x_4} = 0.3$ ,

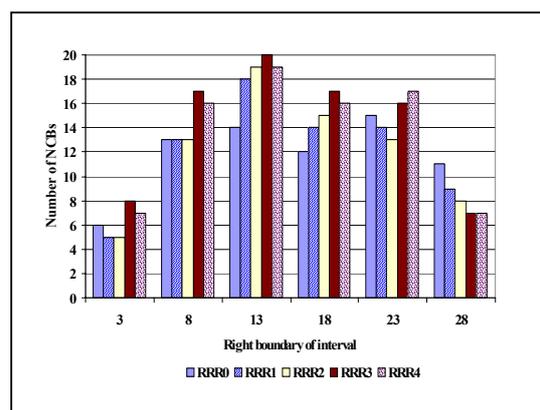
$W_{x_5} = 0.3$  (rating RRR4).

In contrast to other ratings, RRR3 have larger weight for foreign reserves, as interest and similar income from foreign reserve management constitute a substantial part of the NCB income. Other ratings have equal weights applied to foreign reserves and loans to MFI, thus reflecting similar NCB relationship with the domestic economy and external sector. In ratings RRR1 and RRR4, the weights of similar NCB income  $x_4$  and expense  $x_5$  are also similar (0.25 and 0.3 respectively), while in rating RRR1 in comparison with RRR4 provisions against potential risks or capital and reserves are more significant.

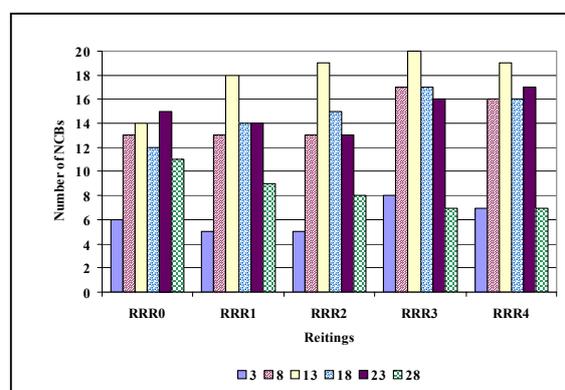
Weight changes determine the number of times a respective NCB takes this or that position in 1999–2007 ratings. The largest range has been observed for rating positions 9 to 13, with 14 NCBs in this range in rating RRR0 and 20 in rating RRR3 (see Chart 2). Nevertheless, a weight change does not affect the rated position of an NCB substantially. In 1999–2007, several NCBs occupied the same position in the same rating interval several times, with the number of times differing only once or twice. For instance, three EU15 NCBs (FI, IE, and SE) took the first three positions in all ratings four, four and five times respectively. Likewise, Danmarks Nationalbank took one of the first three positions nine times in ratings RRR0, RRR1 and RRR2 and eight times in ratings RRR3 and RRR4, whereas Banca Națională a României was positioned below the 23rd rank seven times in ratings RRR0 and RRR3 and six times in ratings RRR1, RRR2 and RRR4. Danmarks Nationalbank took the first position in all ratings in 2002–2005 and 2007, with its place between the second and third positions in 1999–2001 and 2006, except for 1999 when it was ranked fourth and sixth in RRR3 and RRR4 ratings respectively. Of NCBs of the Baltic States, Eesti Pank's rating has been the highest (eighth position in 2004 in rating RRR3). Latvijas Banka and Lietuvos bankas were in the 10th and 11th positions in the rating RRR3 in 2004 and 2007 respectively.

The analysis of the rating positions implies that compared with other ratings, the RRR2 distribution is closer to normal distribution (asymmetry coefficient  $A \approx -0.2343$ , excess coefficient  $E \approx -0.4271$ ; see Chart 3). Taking into account the above stated and the fact that RRR2 focuses more on NCB performance efficiency and hedging against potential risks, a detailed

description of the dynamics of this rating is given for 1999–2007.



**Chart 2. NCB distribution of position intervals in ratings RRR0, RRR1, RRR2, RRR3 and RRR4 in 1999–2007**



**Chart 3. NCB position distribution in ratings RRR0, RRR1, RRR2, RRR3 and RRR4 in 1999–2007**

In 2007 against 1999, the NCBs of eight EU15 countries and six EU12 countries improved their positions in rating RRR2; the rank of five EU15 and six EU12 NCBs was lowered, but that of two EU15 NCBs (FI and GB) remained unchanged (see Chart 4). As to RRR2, the largest improvement (up by 12 positions) was recorded by Българска народна банка and Banca d'Italia, while the positions of Národná banka Slovenska and Česká národní banka worsened most (by 17 and 15 ranks respectively). In 2005, Banka Slovenije ranked best among EU12 NCBs in RRR2 (5th position); Българска народна банка ranked 8th in 2007 and 10th in 2005; Banka Slovenije took the 15th position in 2007 and 17th in 2006; Central Bank of Cyprus was in a lower rating position in RRR2 in 2007 (the 21st position) than in 2006 and 2005 (the 10th and 16th respectively). The authors of the paper think that these NCBs incurred some problems in connection with the preparatory process for the integration of Slovenia and Cyprus into the euro area. In 1999–2007, Danmarks Nationalbank and Sveriges Riksbank took the first position in rating RRR2 five and

four times respectively. Česká národní banka and Banca Națională a României were ranked in the 27th position 7 and 2 times respectively. Of EU15 NCBs, the score was the lowest for Banque centrale du Luxembourg (the 25th position four times and 26th position five times). In 2007, Lietuvos bankas ranked the highest of all Baltic States' NCBs (13th position); it was followed by Eesti Pank (14th position) and Latvijas Banka (17th position). Lietuvos bankas stood lower in 1999 (24th position), fluctuated between the 23rd and 21st positions in 2000–2003, whereas in 2004 swiftly improved its standing moving up to the 14th place (retaining it also in 2006 but falling to the 19th position in 2005). The ranking of Eesti Pank in RRR2 ranged from the 12th position in 2006 to the 22nd in 1999 (on 6 occasions higher than the 15th position). The position of Latvijas Banka in RRR2 has been from the 17th in 2002 and 2007 to the 21st in 1999 (on 6 occasions higher than the 20th position).

The comparison of RRR2 results for 2003 (a year prior to EU10 joining the ESCB) and 2007, positions of two EU10 (LT and LV) NCBs improved, of three EU10 (CZ, SI, and SK) NCBs remained unchanged, and five EU10 (CY, EE, HU, MT, and PL) NCBs worsened (see Chart 4).

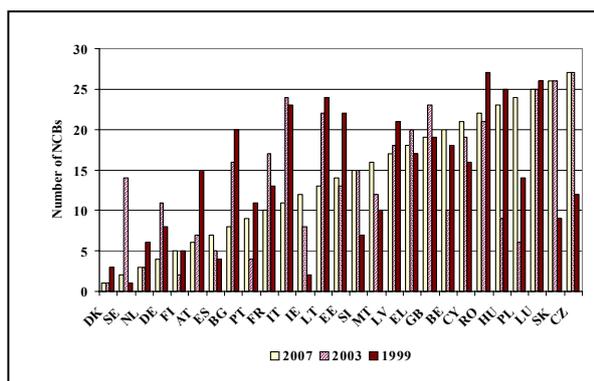


Chart 4. NCB positions in rating RRR2 in 2007, 2003 and 1999

The weaknesses of this methodology have to be acknowledged, as the rating does not capture the extent of the differences in NCBs in neighbouring ranks. The comparison of the results of some NCBs can be well presented in a graphical form. In this case, a comparison of NCBs of the Baltic States and Danmarks Nationalbank has been made. The comparison of the indicators of these NCBs and total indicators of the EU NCBs in 1999–2005 shows both differences and common features; overall, however, a progressive aligning of indicators can be observed (Pilsuma, 2008a). This tendency continued also in 1999–2007 (see Charts 5 and 6).

In 2005, per capita income (PCI) was almost similar for all NCBs in the Baltic States, yet it fell substantially behind the respective indicators of Danmarks Nationalbank

and the ESCB. In 1999–2005, certain alignment of PCI of the Baltic States and ESCB was observed. In 2007 against 2005, PCI of the Baltic States' NCBs, Danmarks Nationalbank and ESCB increased, with PCI of Latvijas Banka, which was the highest among the NCBs of the Baltic States, exceeding that of the ESCB as much as by 6.0%, yet being 2.9 times less than PCI of Danmarks Nationalbank. In 2007 against 2003, the largest increase in PCI was recorded for Latvijas Banka (2.3 times), while the respective increases for Lietuvos bankas and Eesti Pank were 2.1 and 1.9 times.

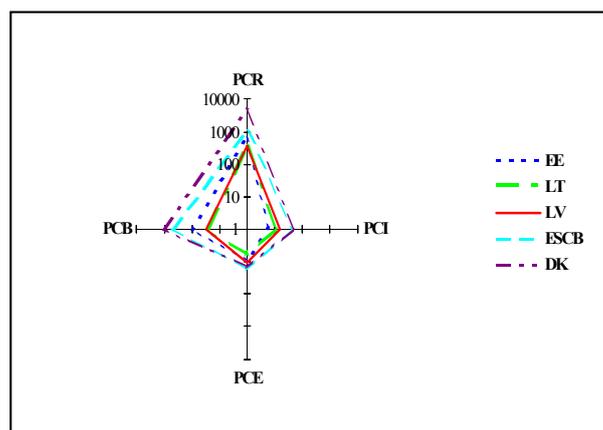


Chart 5. Performance indicators of NCBs of the Baltic States and Denmark and the ESCB in 1999 (logarithmic scale)

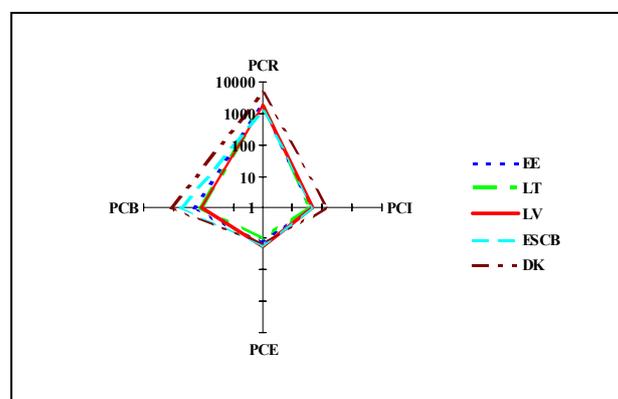


Chart 6. Performance indicators of NCBs of the Baltic States and Denmark and the ESCB in 2007 (logarithmic scale)

Per capita expenditure (PCE) of the Baltic States' NCBs approached the indicators of Danmarks Nationalbank and the ESCB and increased in 1999–2005. In the given period, the largest increase in PCE was recorded for Lietuvos bankas (23.3%) while PCEs of Latvijas Banka and Eesti Pank rose by 13.9% and 2.3% respectively. In 2007 against 2005, the largest rise was recorded for Eesti Pank (51.7%), while PCEs of Latvijas Banka and Lietuvos bankas increased by 38.2% and 31.1% respectively. PCE of the ESCB rose

by a mere 4.2% in this period, while that of Danmarks Nationalbank decreased by 7.0%. In 2007, PCE of Latvijas Banka exceeded those of Eesti Pank, Lietuvos bankas and Danmarks Nationalbank by 26.0%, 75.3% and 15.6% respectively but was somewhat (by 4.0%) smaller than the ESCB's PCE. In 2007 against 2003, the largest increase in PCE was recorded for Eesti Pank (60.7%), whereas increases in PCEs of Lietuvos bankas and Latvijas Banka were 40.6% and 27.8% respectively. As labour costs and other payments to the staff figure as essential NCB's expenditure items and per capita expenditure of NCBs of EU12 countries falls behind the respective indicators of the ECB and EU15 NCBs, the NCB expenditure in the Baltic States is expected to grow, thus pushing up PCE and adversely affecting the rating positions of the Baltic States' NCBs. However, PCE of Latvijas Banka is likely to decrease in 2009 as a result of austerity measures implemented in Latvia in 2009 due to the global financial market turmoil caused by the US sub-prime mortgage market crisis, which made Latvijas Banka reduce wages and revise the related expenditure plans for 2009 down by 15% compared to the respective expenditure in 2008 in line with the processes at other public institutions where such cuts were stipulated by law.

Despite a recorded substantial lag in the NCB per capita capital and reserves (PCB) in the Baltic States from the Danmarks Nationalbank and ESCB levels, the difference substantially narrowed in 1999–2007. In 2007, PCC of Eesti Pank was two times higher than PCB of Latvijas Banka and Lietuvos bankas and 2.5 and 5.9 times smaller than those of the ESCB and Danmarks Nationalbank respectively. In 2007 against 2003, the increase in PCB of Lietuvos bankas (1.9 times) was the largest, while PCB of Latvijas Banka and Eesti Pank increased 1.7 and 1.2 times respectively. Due to NCB foreign reserves in the Baltic States having grown several times, attention should be paid to the building of adequate buffers to secure the central banks against the effects of potential financial risks. The NCB practice in the EU countries suggests that the financial and similar risks cause substantial additional costs, which, in turn, have already made several EU NCBs incur losses (Pilsūma, 2004).

Per capita foreign reserves (PCR) of the Baltic States' NCBs approached the level of Danmarks Nationalbank in 1999–2007, yet this indicator was still several times smaller (e.g. PCR of Latvijas Banka was 2.3 times smaller in 2007). In 2005, only PCRs of Eesti Pank and Lietuvos bankas were higher (by 31.9% and 2.2% respectively) than the ESCB PCR; in 2007, PCR of Latvijas Banka joined the club and the increases of all three central banks were 1.5, 1.4 and 1.7 times respectively. In 2007 against 2003, the largest increase was recorded for Latvijas Banka's PCR (3.2 times), with increases for Eesti Pank

and Lietuvos bankas 2.0 and 1.9 times respectively.

Per capita credit to MFI (PCC) is an exception, as this indicator was equal to 0 for a number of NCBs in EU12 countries (BG, CY, EE, HU, LT, MT, and RO in 2007) due different exchange rate and monetary policies in non-euro area EU countries. The role of NCBs in the formation of MFIs' credit resources in the Baltic States is expected to grow after these states join the euro area, if their respective MFIs discontinue the routine practice of borrowing from their parent banks. At the same time, it should be noted that PCC of Danmarks Nationalbank having increased 2.9 times against 1999 was 2.6 times larger than that of euro area NCBs in 2007.

The analysis of changes in other NCB performance indicators in 2003–2007 leads to a conclusion that the performance indicators of NCBs in the Baltic States predominantly tend to approach the Danmarks Nationalbank's indicators, albeit notable differences still exist (see Table 3).

**Table 3. Performance indicators of the Baltic States' NCBs as proportion of Danmarks Nationalbank's performance indicators in 2003 and 2007 (%)**

Indicators	Years	Country of NCB		
		EE	LT	LV
Operating expense to GDP	2003	298.2	328.2	703.9
	2007	329.1	328.5	548.6
Yield on net assets	2003	77.8	361.1	2511.1
	2007	77.8	383.3	2116.7
Number of staff per 100 thousand inhabitants	2003	179.5	242.8	308.5
	2007	189.4	268.1	299.7
Per capita wage and salary expenditure	2003	24.7	18.7	30.0
	2007	34.1	20.7	39.0
Share of wage and salary expenditure in total operational expense	2003	80.6	101.3	106.8
	2007	70.4	84.5	100.9

The number of NCB staff per 100 thousand inhabitants of the respective country increased only in Lietuvos bankas (by 0.7%); the indicator for Latvijas Banka and Eesti Pank decreased by 15.7% and 3.8% respectively. However, as NCB per capita wage and salary expenditure in the Baltic States is substantially lower than in the NCBs of EU15 countries, the indicator increased more dynamically for NCBs of the Baltic States (Eesti Pank by 47.9%, Latvijas Banka by 39.1%, and Lietuvos bankas by 18.6%) than the respective indicator for Danmarks Nationalbank which went up 7.1%. However, the share

of this expenditure in the total operational expense of the NCBs in the Baltic States dropped in 2007 to 38.3% for Eesti Pank, 55.0% for Latvijas Banka, and 46% for Lietuvos bankas (for Danmarks Nationalbank this indicator increased by 1.0 percentage point and was 54.5% in 2007). The proportion of NCB operational expense in the Baltic States to each country's GDP dropped, most sharply for Latvijas Banka (1.6 times). Despite the yield on Latvijas Banka net assets in 2007 being higher (3.81%) than at other mentioned NCBs, it recorded a decrease of 0.71 percentage point against 2003.

### Conclusions

The establishment of the ECB, the formation of the ESCB, including the Eurosystem, in 1998, and enlargements of the EU on 1 May 2004 and 1 January 2007 were the turning points for EU NCBs.

Along with tackling monetary policy issues, contemporary NCBs today are involved in the activities that are related to smooth operation of the payment systems, financial stability, and collection and compilation of statistical information more often and actively than ever.

Latvijas Banka has been cooperating with NCBs of the EU countries since the early 1990s, with this cooperation acquiring particular significance when a contemporary central bank was to be established. Non-euro area NCBs in EU12 countries shall organise their activities to minimise potential risks and to promote integration with the Eurosystem. Latvijas Banka is to proceed with strengthening its functional, institutional and personal independence and improving its transparency.

On 1 January 2009, the share of EU15 NCBs in the ECB capital decreased, while that of EU12 NCBs (except BG and RO) increased. The ECB General Council includes governors of 16 NCBs as of 1 January 2009, yet the new voting procedures have not been effected and should be further improved in view to a further EU enlargement process.

As NCB activities are affected by the global developments, there is a need to compare NCB performance indicators to conduct activities at the optimal level. To this end, NCB ratings and performance results of Latvijas Banka, other NCBs in the Baltic States and EU15 countries shall be used; as cardinal differences continue to exist, there is room for improving the ESCB operational policy to enhance the ESCB integration process.

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