

EFFICIENCY OF CENTRAL BANKING: MEASUREMENT, CASES AND POLICY DEVELOPMENTS

Vita Pilsuma

Latvijas Banka

Leonārs Svarinskis

Rēzeknes Augstskola

Abstract

This paper discusses the efficiency of the central banks in the field of the integration process of the European System of Central Banks. The authors have based their research on a number of opinions regarding the effectiveness of expenses of central banks and the analysis of efficiency indicators of the EU central banks and the European Central Bank. The innovative aspect of this paper lies in finding trends for the efficiency indicators and policy developments of the central banks of the EU countries. Some differences have been detected for several indicators of the central banks of the EU15 countries and the central banks of the other EU countries, which prove that there is still room for improving the accountability and transparency of the European System of Central Banks.

Keywords:

Central banking, efficiency indicators, integrity, European System of Central Banks.

Introduction

The foundation for the EU was laid 50 years ago when on 25 March 1957 the leaders of six European nations signed the Treaty of Rome establishing the European Economic Community. The Treaty pursued the goal to promote the growth of trade and economy and can be treated as a basis for nations to commence also cooperation in the fields of economy and monetary policy. Integration reached a new stage when the European Central Bank (ECB) and the European System Central Banks (ESCB) were founded at the end of the 1990s. Following centralisation of a part of the decision-making process, the effectiveness and efficiency of central banks of the EU countries (hereinafter, NCBs) were questioned. The innovative aspect of this paper lies in finding trends for the efficiency indicators and policy developments of the NCBs. The paper pursues the aim to propose solutions for further improvements in the ESCB's operation and policy.

The research builds on the analysis of EU25 NCBs and ECB operational indicators as well as views voiced by a number of authors regarding central bank expense efficiency. In the pursuit of the objectives set, we have made use of such methods as statistical analysis of indicators and graphic and monographic approach.

Promoting central bank operation

The foundation, objectives and tasks of the central banks are closely related to historical aspect. Specific development circumstances in each country have determined the mode of operation and the place of the central bank in the financial sector and economic growth management.

The Maastricht Treaty, which was signed at the beginning of the 1990s, and the ESCB, which commenced its activities at the end of the 1990s, outlined new operational aspects for the NCBs. Among other titles the Treaty comprises "Economic and Monetary Policy", with its Chapter "Monetary Policy" defining the aims and tasks of the common monetary policy and the institutional structure.

The organisation of the ECB is modelled on the basis of Deutsche Bundesbank, because after coping with the aftermath of World War II – the collapse of the financial system –, the latter ensured the creation of a solid national currency and succeeded in strengthening the independence of the central bank. However, at the end of the 20th and the beginning of the 21st century, the efficiency of central banking was subject to criticism, as along with the establishment of the ECB and introduction of the euro in particular, the scope of central bank duties in the field of defining and implementing the monetary policy decreased. C. Pauly, C. Reiermann, W. Reuter and T. Tuma admit that the number of employees at Deutsche Bundesbank is overexcessive, legacy and social

benefits too expensive, its outlook uncertain and contribution to world processes questionable; they came to the conclusion that Deutsche Bundesbank failed to get adjusted to the new situation and, like the state itself, was lacking enthusiasm for reform processes. J. Stark emphasised that central banks of the Eurosystem have to adjust themselves to the new situation and proceed with effective implementation of the tasks set out by the ESCB and legislation of respective countries.

Despite classification in the same financial corporations' sector along with commercial banks, the central banks differ from those offering commercial services in their basic tasks of issuing national currency, maintaining internal and external value of currency, managing country's foreign reserves or their part, and engaging in transactions with the IMF.

It should also be taken into account that despite the foundation of the ESCB with its tasks defined under the Treaty Establishing the European Community and the Statute of the ESCB and the ECB annexed to it, the EU national legislation sets out additional tasks and duties for central banks. The implementation of such additional tasks and duties requires extra resources, both human and financial, the amount of which can differ from country to country. Supervision of credit institutions performed by a part of the NCBs is the most resource-intensive function. We believe that the amount of resources also depends on how mature is the financial system of each respective country. For instance, the number of monetary financial institutions (MFIs) differs greatly across EU countries. The amount of MFI assets and the structure of liabilities are also different. The political and administrative regimes of a country as well as the system under which its central bank carries out the set tasks, e.g. the scope of outsourcing, also affect the number of central bank staff. Hence several quantitative indicators should be introduced to assess central bank operational efficiency.

Efficiency indicators

We suggest that a set of four quantitative indicators be used in the central bank efficiency studies (see Chart 1). The following equations present the coefficients of the central bank expense:

$$TER_{GDP} = \frac{E_{Total}}{GDP} \times 100 \quad (1)$$

where

E_{Total} is expense of the central bank, except interest and similar expense;

GDP is the gross domestic product, at market prices, of the respective central bank's country;

$$TER_p = \frac{E_{Total}}{P} \times 100 \quad (2)$$

where

P is the total population of the respective central bank's country;

$$TER_{MFIs} = \frac{E_{Total}}{N_{MFIs}} \times 100 \quad (3)$$

where

N_{MFIs} is the number of MFIs (except the central bank) of the respective central bank's country;

$$TER_{MFIa} = \frac{E_{Total}}{N_{MFIa}} \times 100 \quad (4)$$

where

N_{MFIa} is the MFI average asset balance of the respective central bank's country.

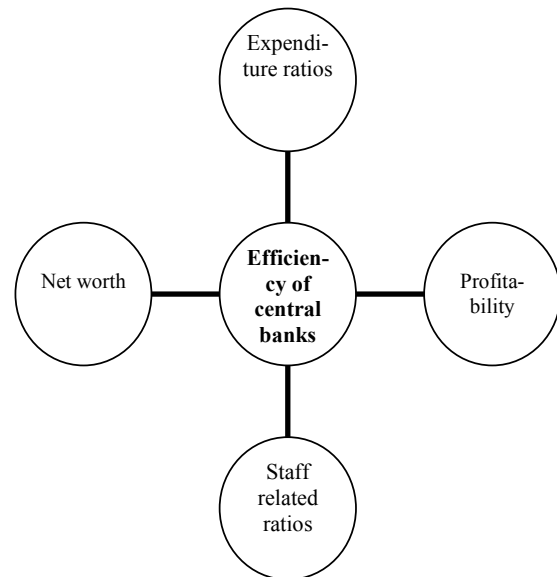


Chart 1. Quantitative central bank efficiency indicators

The largest part of central bank operational expense is made up of staff costs, other operating expense, expense related to depreciation of fixed assets and amortisation of intangible assets as well as expense of bank note production and provision-making. Staff costs, in turn, account for a substantial part of central bank operating costs (e.g. in 2005, staff costs accounted for 50.6% of the total ESCB expense). Consequently, it is important to assess the central bank staff costs and the number of personnel using the following coefficients:

$$PNR_p = \frac{N_{SCB}}{P} \times 100 \quad (5)$$

where

N_{SCB} is the average staff of the central bank;

$$PER_p = \frac{E_{SCB}}{P} \quad (6)$$

where

E_{SCB} is the staff costs of the central bank;

$$PNR_{MFI_s} = \frac{N_{SCB}}{N_{MFI_s}} \quad (7),$$

$$PER_{SCB} = \frac{E_{SCB}}{N_{SCB}} \quad (8).$$

Return on assets (ROA) is one of the indicators of commercial bank operating cost efficiency which can also be used in the estimation of central bank's operating quality. This indicator is useful, as it provides an overview of the return on central bank transactions, in particular in the euro area where common criteria are set for income reporting, a single monetary policy is conducted and the same monetary policy instruments are used.

$$ROA_{CB} = \frac{IRI_{Net}}{A_{Net}} \times 100 \quad (9)$$

where

IRI_{Net} is the net interest income of the central bank;

A_{Net} is net assets of the central bank.

Net worth of a central bank is the difference between its assets and liabilities, i.e. bank's equity. We support the view that a central bank can be operational in the circumstances when its equity, provisions and earnings are adequate for implementing tasks of the central bank. J. Dalton and C. Dziobek maintain that in normal circumstances central banks should be able to make profit, while their failure to address such problems as current losses or negative net worth will hinder the management of monetary policy and may undermine the independence and credibility of the bank. P. Stella thinks that a central bank should be financially strong in line with the tasks set and risks undertaken by it; it likewise should be able to earn profit on a regular basis. On the account of central banks being generally exposed to strong profit and loss shocks, they may need capital in large amounts. A. Ize has proposed to calculate capital as a simple function of international reserves held in excess over the issued currency, central bank's operating expense, interest rate premium on its debt, inflation target and the projected growth in currency, international reserves and operating expense. As foreign assets account for an important central bank asset share, the central banks are exposed to foreign exchange rate, interest rate and gold price risks and make provisions.

If public is well-informed about the goals and instruments of monetary policy and if central bank's commitments to this policy are credible, the efficiency of monetary policy may be enhanced. If the participants of the financial market, investors and other interested parties learn more about the monetary policy decisions and their implementation, market efficiency is boosted. A principle of the code of best

practice regarding transparency of monetary and financial policy stipulates that central banks be accountable for and confident of their integrity. The bank internal management procedures, that must be publicly available, shall ensure integrity of transactions, including the internal audit process. Good governance stipulates accountability of central banks, and its role is growing along with the strengthening of central bank independence. Though the principles of corporate management do not apply directly to the central bank operations, central banks abide by it more frequently. When assessing the efficiency of international standards and best practice codes, the International Monetary Fund and the World Bank concluded that they help detect vulnerability of national institutions and specify the priorities for their strengthening. Consequently, the abidance by these standards and the principles of best practice can serve as a qualitative indicator characterising operating efficiency and integrity of central banks.

Taking into account the single system of the NCBs and their operation within the framework of a single market, a hypothesis that central bank efficiency indicators are also similar can be proposed. On these grounds, several efficiency indicators will be further discussed.

Operating efficiency of the NCBs

The studies of the NCB operating indicators disclosed differing degrees of central bank openness regarding the preparation of their financial statements and annual reports. For instance, the reporting of central banks' operating expense (e.g. its classification and grouping) and the staff numbers (averages, employees at end of the year, inclusion of part-time workers) differed across banks. The expenditure structure of a central bank also depends on its outsourcing policy, i.e. the delegation of certain tasks to other entities outside the bank, saves resources for staff wages and salaries but increases expenditure due to outsourcing. Outsourcing of services enables banks to cut the number of employees but at the same time it gives rise to a dilemma related to safety, reliability and quality of central bank services.

When doing research on the central bank staff number *versus* total population at the end of 1990s, the Bank of England came to the conclusion that the relation between the number of central bank staff and total population of the respective country is clearly positive; a similar relation was also characteristic for 2005 (see Chart 2).

When comparison is made of the NCB PNR_p , the range of indicators (the lowest and the highest value) is very pronounced (see Chart 3). In 2005, the ESCB PNR_p was exceeded on 13 occasions, while the NCB indicators fell below the ESCB PNR_p in 8 cases (in 2002, 15 and 8 respectively). The Central Bank of

Malta posted the highest PNR_p , while that of the Bank of England was the lowest. Among the Baltic States, this indicator was the lowest for Eesti Pank, followed by Lietuvos bankas and Latvijas Banka. As to central bank PNR_p in the EU15 and EU10 countries, no notable differences were recorded.

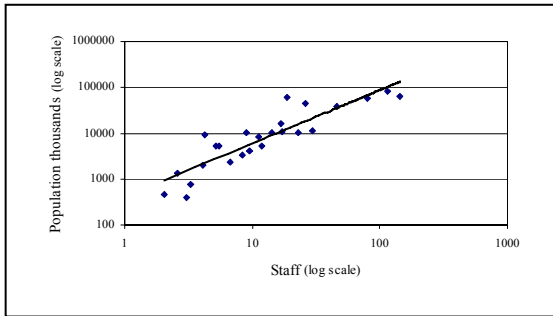


Chart 2. Comparison of EU NCB staff and total population in 2005

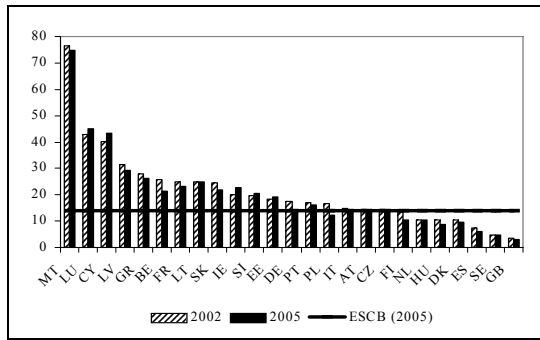


Chart 3. NCB PNR_p in 2002 and 2005 and ESCB PNR_p in 2005

The comparison of indicators for the number of central bank employees servicing one MFI or PNR_{MFIs} shows that the figure is the largest for Národná banka Slovenska and the smallest for Banque centrale du Luxembourg (see Chart 4).

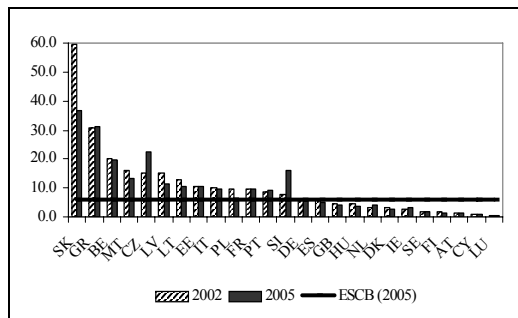


Chart 4. NCB PNR_{MFIs} in 2002 and 2005 and ESCB PNR_{MFIs} in 2005

No notable differences were detected for PNR_p of the EU15 and EU10 countries, whereas PER_p of the given EU country groups overall displayed pronounced distinctions (see Chart 5). In the majority of cases, this indicator was higher for EU15 NCBs and lower for EU10 NCBs, with an exception of two EU10 NCBs (the Bank of Malta and the Central Bank

of Cyprus) and three EU15 NCBs (Banco de España, Sveriges Riksbank and the Bank of England).

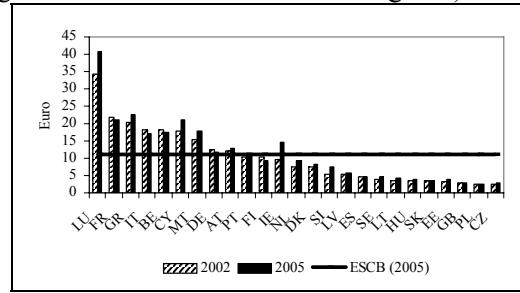


Chart 5. NCB PER_p in 2002 and 2005 and ESCB PER_p in 2005

When dealing with the staff costs of the NCBs and ECB, a pronounced margin between the EU15 and EU10 NCB PER_{SCB} can be observed (see Chart 6). Banca d'Italia and the ECB recorded the highest PER_{SCB} in 2002 and 2005, while those of Lietuvos bankas and Národná banka Slovenska were the lowest. In 2005 compared with 2002, PER_{SCB} of all EU NCBs went up. The difference between the highest and the lowest indicator was 109.5 thousand euro or 7.4 times in 2005. The difference between the highest and the lowest indicator of EU10 NCBs was 31.5 thousand euro or 2.8 times, whereas the respective difference for EU15 NCBs was 62.6 thousand euro or 2.0 times. We can expect a rise in the EU10 NCB expense in line with both increasing wages and salaries and growing costs related to retirement benefits to employees.

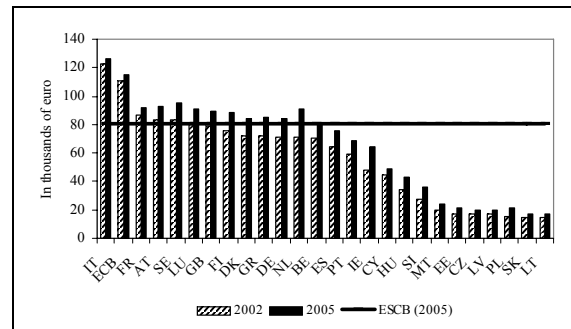


Chart 6. NCB PER_{SCB} in 2002 and 2005 and ESCB PER_{SCB} in 2005

The comparison of the NCB PER_{SCB} and their capital share in the ECB (depending on the shares of the respective country in the EU GDP and total population) resulted in a positive trend (see Chart 7).

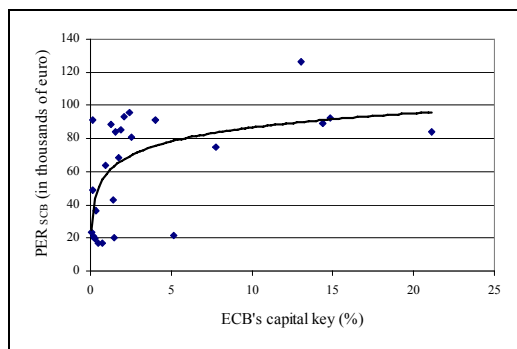


Chart 7. Comparison of EU25 NCB PER_{SCB} and capital shares in the ECB in 2005

The main income positions of the euro area central banks are net interest income, net result on financial transactions, write-downs and risk provisions as well as net result of pooling of euro area monetary income, with all of them displaying notable income fluctuations. In 2004 and 2005, all central banks of the euro area recorded a positive net interest income. As to net result of financial operations, write-downs and risk provisions were positive only in seven cases in 2004, while net result of pooling of euro area monetary income was negative; in 2005, however, there were only four cases of negative net result on financial transactions, write-downs and risk provisions, and three cases of negative net result of pooling of monetary income. In 2004, negative net result of pooling of monetary income ranged from 6.9% of net interest income for Oesterreichische Nationalbank to 19.2% for Banca d'Italia, whereas in 2005 these banks recorded positive net result of pooling of monetary income and accounted for 1.6% and 0.3% of net interest income respectively (representing maximum and minimum indicators of positive net result). In 2004, ROA_{CB} of the euro area NCBs was 1.77% but in 2005 it rose to 3.05%.

With foreign reserves accounting for the major part of euro area NCB assets, central banks are exposed to market risks. As a result of revaluation on assets, several central banks have incurred losses, which, in turn, have reduced net worth of central banks. Česká národní banka has gone through the longest period of losses. Its net worth was positive at the end of 1996, but at the end of 2004 it turned negative, accounting for 614.6% of positive net worth at the end of 1996. In 2005, the bank earned a profit, which accounted for 15.9% of accumulated losses. The ECB also finished years 1999, 2003 and 2004 with a loss (6.1%, 3.6% and 22.9% of ECB net worth at the end of the respective previous year). The ECB loss was financed by accumulated provisions, and there was no need for euro area central banks to share it. In 2005 and 2006, the provisions accumulated to hedge foreign exchange, interest rate and gold price risks (992.0 million euro and 1379.4 million euro or 78.1% and 70.0% of ECB net interest income in the

respective year) brought the ECB net profit down to zero. Due to it, transfers to the general reserve fund were not made and appropriation of profit to NCBs of the euro area did not take place in 2005 and 2006.

Transparency and accountability of NCBs

The analysis of the NCB financial statements and annual reports shows that they become more and more inclusive, enabling both the participants of the financial market and community at large to gain a detailed insight into the policy of the central bank and its implementation, bank's exposure to risks and its corporate management.

Despite the fact that NCBs and the ECB form a single system, the content and form of financial statements differ (different items, their classification and meaning; different rounding of indices). The Bank of England differs from other banks even in the timing of financial statements (balance sheet date – 28 February). Several EU10 NCBs also prepare cash flow statements and statements of recognised gains and losses. The content of such euro area NCB documents is more uniform than that of other EU NCBs. Changes are likely to occur in connection with the central banks of Bulgaria and Romania joining the ESCB on 1 January 2007. As a result, the comparative analysis of data is likely to become more complicated.

The recognition of gains and losses in the respective statement and profit reporting in the balance sheet are also different.

The NCBs make a comparatively restricted use of the possibility to calculate the cost of their basic functions; such an estimate would greatly contribute to a more complete evaluation and comparison of the NCB operational efficiency.

Conclusions

The analysis of the central bank operational efficiency should build on a number of quantitative indicators and qualitative surveys as well as assessment of their compliance with the standards and best practice principles.

The ESCB should strive for a uniform financial statement submission procedure and cost price calculation of central bank basic functions; this would lead to a greater transparency and a more accurate comparison of central bank efficiency resulting in a more enhanced accountability of central banks.

The study of central bank efficiency indicators should continue, with the focus not only on the central banks in the EU25 countries but also in Bulgaria and Romania; the studies should also include the comparison of the NCB efficiency indicators with the respective indicators of the EU candidate countries.

Differences observed today in efficiency indicators of the EU15 and EU10 countries indicate

that there are opportunities for integrity and improvement of operational efficiency within the ESCB.

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¹ The views expressed in this paper are those of the author and not necessarily represent those of the Latvijas Banka or Latvijas Banka policy.

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