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In search of accounting principles for the central bank

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Streszczenie

W opracowaniu przedstawiono najważniejsze zasady rachunkowości stosowane przez banki centralne. Uwypuklono, że od 2004 r. zasady rachunkowości NBP są zgodne ze standardami rachunkowości Eurosystemu. Ewentualna zmiana tych zasad jest uzależniona od perspektywy przyjęcia euro przez Polskę. Jeżeli przyjęcie euro będzie w niedalekiej przyszłości, NBP będzie musiał dalej stosować dotychczasowe zasady. Na tym tle zaprezentowano zmiany bilansu NBP w dniu hipotetycznego przyjęcia euro przez Polskę. Jeżeli przyjęcie wspólnej waluty stanie się odległą perspektywą, NBP mógłby rozważyć zmianę stosowanych zasad rachunkowości. Z uwagi na rosnące ryzyko, na jakie napotykają banki centralne w ostatnich dwóch dekadach XXI wieku, wybór ten powinien być skorelowany z potrzebą budowania silnej pozycji kapitałowej banku oraz ograniczaniem zmienności jego wyniku finansowego. Stąd w opracowaniu zaproponowano kierunki modyfikacji dotychczasowych zasad rachunkowości NBP, które zapewniłyby realizację przyjętych założeń. Wskazano przy tym, że w przypadku NBP stosowanie MSSF byłoby nieuzasadnione.

Słowa kluczowe: bank centralny, rachunkowość banku centralnego, zasady rachunkowości banków centralnych

JEL: E58, G21

Abstract

In search of accounting principles for the central bank

The paper presents the selected accounting principles applied by central banks. It has been emphasised that since 2004 the NBP accounting principles are in line with the Eurosystem accounting principles. The paper shows that the possible change of these principles depends on the perspective of adopting the euro by Poland. If the adoption of the euro takes place in the near future, NBP will have to continue applying the current accounting rules. In this context the paper presents how the NBP balance sheet would change on the date of the hypothetical adoption of the euro by Poland. On the other hand, if the adoption of the single currency becomes a distant prospect, NBP could consider changing the applied accounting principles. Due to the growing risks faced by central banks in the first two decades of the 21st century, this choice should be correlated with the need to build a bank's strong equity position and to reduce the volatility of its financial result. Hence, the paper proposes directions for modification of the existing NBP accounting principles, which would ensure the implementation of the adopted assumptions. The authors indicate that in the case of NBP the application of IFRS would be unjustified.

Keywords: central bank, central bank accounting, accounting principles of central banks

JEL: E58, G21

Introduction

Since 1 January 2004, Narodowy Bank Polski (NBP) has applied the Eurosystem accounting standards.[1] This requirement stems from the Act on Narodowy Bank Polski (Act on NBP), which indicates that: "The accounting rules of NBP should conform to the standards applied in the European System of Central Banks".[2] Since that date, the accounting principles determined by the Monetary Policy Council (MPC), have become consistent with the Guideline of the European Central Bank (ECB) on the legal framework for accounting and financial reporting in the European System of Central Banks (ESCB) (the so-called "ECB accounting guideline"; "Eurosystem accounting standards").[3]

Grounding of NBP accounting on the foundations of the Eurosystem standards and their application over almost two decades of the 21st century justifies a critical analysis of these principles. Therefore, the study attempts to seek an answer to the question of whether the NBP accounting principles in force since 2004 should continue to be applied, or perhaps other solutions should be sought. The aim of the study is therefore to compare the accounting principles currently in force in NBP with alternative principles, i.e. International Financial Reporting Standards (IFRS)[4] and the authors' proposal of accounting principles for the central bank. The impact of accounting principles on the volatility of the financial result (and, consequently,

[1] NBP was the first central bank among central banks of the so-called "new European Union Member States" to unify its accounting principles with Eurosystem accounting standards. NBP introduced these rules from January 2004, when Poland was not yet a member of the European Union (it became a Member State on 1 May 2004). In the same year, accounting principles compliant with the ECB guideline were also introduced by the Swedish National Bank (Sveriges Riksbank), but Sweden had joined the EU in 1995.

[2] Act on Narodowy Bank Polski, Journal Of Laws of 2022, item 492, consolidated text, article 67.

[3] The first text of the ECB Guideline of 1 December 1998 on the legal framework for accounting in the ESCB (ECB/1998/N22), has not been published. However, subsequent texts containing the amendments to the primary legislation were published, i.e.: ECB Guideline (EU) 2016/2249 of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (ESCB) (ECB/2016/34), as amended by the ECB Guideline (EU) 2019/2217 of 28 November 2019 amending Guideline (EU) 2016/2249 on the legal framework for accounting and financial reporting in the ESCB (ECB/2019/34), (OJ L 332, 23.12.2019).

[4] A similar comparison of the Eurosystem accounting principles with the IFRS was performed using the example of the ECB (see C. Schwarz, P. Karakitsos, N. Merriman, and W. Studener, "Why accounting matters? A central bank perspective", *ECB Occasional Paper Series*, No 153, May 2014.

contribution to the state budget[5]) and on the amount of the central bank's equity was used as a criterion for this comparison.

In order to achieve the stated objective, the paper is divided into three parts. The first part introduces the issue of central bank accounting principles. It responds to the question of what basic concepts of accounting principles are used by central banks. Since potential changes in NBP's accounting principles depend on the adoption of the euro (i.e. the imminent prospect of euro adoption does not provide an opportunity to change the NBP accounting principles, while a distant perspective creates such an opportunity), the second part indicates the areas where potential changes to the bank's accounting principles could occur if the bank had to continue to apply the Eurosystem accounting principles. This section also discusses the NBP balance sheet as it could look at the date of the hypothetical adoption of the euro by Poland. On the other hand, the third part presents the "new" accounting principles of the bank, more specifically, a proposal of modification of the existing principles. The assumption was made that they should feature low volatility of the financial result and ensure building up a higher level of the bank's equity. Accordingly, three scenarios have been considered in this part, namely: continuation of the existing accounting policies conforming to the ECB accounting guideline, application of International Financial Reporting Standards (IFRS) and adoption of modified accounting principles. The paper is finalised with a summary that provides the conclusions of the analysis.

[5] See: A. Chaboud, M. Leahy, "Foreign Central Bank Remittance Practices", Federal Reserve Division of International Finance, March 8, 2013 (authorized for public release by the FOMC Secretariat on 01/11/2019).

1. Accounting principles of central banks

In the broadest sense, accounting principles represent the expectations of stakeholders, captured in legal standards commonly referred to as the "balance sheet law", concerning the way of creating and presenting financial information about the economic and financial position of an entity. They typically include:

a) national accounting standards (the so-called "local GAAP"[6]*)*,

b) international standards: IFRS,[7] US GAAP,[8] IPSAS[9] or EPSAS.[10]

Their choice is primarily a matter of determining the main stakeholders of the reports produced by the accounting and the regime of accounting principles under which they want the financial information to be presented.

In studies dealing with central bank accounting, which emphasise the special legal status and unique character of these institutions, the choice of principles is

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[6] GAAP is the term accepted in the literature to describe other generally accepted accounting standards in a particular country.

[7] IFRS - International Financial Reporting Standards are accounting standards approved by the International Accounting Standards Board.

[8] US GAAP means US Generally Accepted Accounting Principles created by the Financial Accounting Standards Board (FASB). They were created in the United States and constitute an integrated system of accounting principles recognised by other countries.

[9] IPSAS means International Public Sector Accounting Standards for public sector entities responsible, among others, for the provision of services that serve the general public, whose main activity is not aimed at profit making and whose operations are financed directly or indirectly, mainly through taxes and social contributions or fees (e.g. UN, European Commission, NATO, OECD). Their aim is to create opportunities to improve the quality and ensure the reliability of public financial information as well as the management of public assets. These standards are set by an independent board called the IPSAS Board (International Public Sector Accounting Standards Board), operating under the auspices of The International Federation of Accounting - IFAC), *Handbook of International Public Sector Accounting Pronouncements*, 2021 Edition, Volume I, II, III, available at: https://www.ipsasb.org/publications/2021-handbook-international-public-sector-accounting-pronouncements, (accessed: 20 September 2021) and in information from the 16.06.2021 working meeting organised by the World Bank, World Bank, "First Time IPSAS Adoption: Lessons Learned", available at: https://cfrr.worldbank.org/news/pulsar-smart-interactive-talk-first-time-ipsas-adoption-lessons-learned?deliveryName=DM117008 (accessed: 28 September 2021).

[10] EPSAS means the European Public Sector Accounting Standards – an initiative carried out under the auspices of Eurostat to create harmonised public sector standards in EU member states, with the aim of increasing transparency and comparability of public sector accounting and financial reporting among EU member states. According to the assumptions, the EPSAS should be based on the IPSAS, taking into account the specific functioning of the European market and the requirements of public statistics, including primarily in the scope of budget deficits. For more information see: https://ec.europa.eu/eurostat/web/epsas (accessed: 20 September 2021) and A. Szewieczek, "Towards standardisation of accounting in public sector entities – the European perspective", Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach, No 252, Katowice 2015.

generally narrowed down to:[11] IFRS, IFRS-based solutions, local generally accepted accounting standards (local GAAP), own accounting principles and the ECB accounting guideline. This is confirmed by the analysis of the annual financial statements and reports of selected central banks for 2019-2020, the results of which are presented in Table 1.

Table 1. Accounting principles of selected central banks in 2019-2020

Accounting principles	Central bank	Source	Comments
IFRS / IFRS -based	England	*Annual Report and Accounts 1 March 2020-28 February* 2021, Bank of England, London 2021, p. 95.	The Bank emphasised that by applying the IFRS it may adopt deviations in the scope of disclosure of certain information. It pointed out that as a "lender of last resort" for institutions in difficult situation, although it recognises the effects of these operations in its financial statements, it cannot disclose specific circumstances. In the bank's opinion, the disclosure of detailed information could undermine public confidence in the financial system. At the same time, the bank declared that the disclosure of information concerning the support would be published when the need to maintain secrecy or confidentiality has expired.
	Brazil	*Financial Statements, Banco Central do Brasil, 31 December 2020, Brasilia 2021,* p. 6 and 12.	In the case of a deviation from the IFRS, the bank communicated this fact when discussing the specific financial statement item to which the deviation relates. Thus, in the case of monetary gold, it pointed out that since the IFRS does not specify the rules for monetary gold investments, the Bank, referring to conceptual assumptions, measures them at fair value[12].
	Bulgaria	*Annual Report 2019, Bulgarian National Bank, Sofia 2020,* p. 115.	

[11] KPMG, "Current trends in central bank financial reporting practices", October 2012, pp. 12-14.
[12] On the other hand, regarding the issue of central bank monetary gold, the IMF's "A Central Bank's Guide to IFRS" refers to IAS 8 "Accounting Policies, Changes in Accounting Estimates and Errors", §§10-12. They state that, in the absence of a standard or an interpretation that might be directly applicable to a particular transaction, the management of an entity shall use its judgement in developing and applying an accounting policy that results in information that is relevant to users, represents faithfully the entity's financial position, financial performance and cash flows, as well as reflects the economic substance of the transaction. Therefore, it may adopt other solutions contained in standards and interpretations on similar and related issues as well as solutions defined in conceptual assumptions. Based on its managerial judgement, the entity's management may also consider the most recent regulations of other entities setting standards based on similar conceptual assumptions, other accounting literature and solutions accepted in the industry. Therefore, for monetary gold, central banks basing their accounting on IFRS can adopt solutions specific, for instance, for foreign currencies, [in:] Wytenburg, R., Beja, A. and Darbyshire, R. *A central bank's guide to International Financial Reporting Standards*, International Monetary Fund, Washington 2020, pp. 72-73.

Accounting principles	Central bank	Source	Comments
	Croatia	*Annual Report 2019, Croatian National Bank, Zagreb 2020,* p.176.	The bank applied these principles until 2019. From 2021 onwards, the bank has been applying the ECB accounting guideline.
	Canada	*Financial Statements December 31, 2020, Bank of Canada, Ottawa 2021* p. 5.	
	Norway	*Norges Bank Annual Report 2020, Norges Bank, Oslo 2021,* p. 7.	
	Serbia	*Annual Report on Activities and Results*, National Bank of Serbia, Belgrade 2021 p. 162.	
	Sri Lanka	*Annual Report 2020, Central Bank of Sri Lanka, Colombo 2021, Part II,* p. 13.	
	Russia	*Annual Report for 2019, Central Bank of Russia, Moscow 2020,* pp. 256-269.	The Bank used its own accounting policies, but based on the IFRS. It also did not apply IAS 21 or recognise unrealised foreign exchange gains/losses on foreign currency valuation in the profit and loss account. It showed these differences in the so-called "revaluation account".
	Republic of South Africa	*Annual Report 2019/20, South African Reserve Bank, Pretoria 2021*, pp. 95-114 and 121.	The bank applied its own accounting principles, but based on the IFRS with the exception of operations specific to central banks, e.g. concerning monetary gold, which the bank treated as a financial asset rather than as inventory. It also did not apply IAS 21, therefore it did not recognise realised and unrealised foreign exchange gains/losses on gold and foreign currency in the profit and loss account. It showed these differences in the so-called "contingency reserve account".
own accounting principles	Argentina	*Financial Statements as of December 31, 2020, Banco Central de la Republica Argentina, Buenos Aires 2021,* p. 17.	
	Japan	*Bank of Japan Annual Review 2021, Bank of Japan, Tokyo 2021,* p. 76.	
	USA	*Financial Statements December 31, 2020 and 2019*, The Federal Reserve Bank of New York, New York 2021, p. 2021.	
	Hungary	*Annual Report 2020, Magyar Nemzeti Bank, Budapest 2021,* p. 104.	

Accounting principles	Central bank	Source	Comments
accounting principles generally accepted in the country concerned („local – GAAP")	Czechia	*Annual Report 2020, Czech National Bank, Prague 2021,* pp. 79-80.	It should be noted that the determination of the content of items in the financial statements and the scope of the disclosures was compliant with the ECB guideline (except for the layout of the balance sheet and the profit and loss account), with the exception of treatment of unrealised foreign exchange gains and losses. Unrealised foreign exchange gains and losses were recognised in the profit and loss account, with the exception of foreign exchange gains and losses on equity instruments in portfolios measured through equity, which were recognised in equity. Gains and losses arising from changes in the fair value of securities measured at fair value through profit or loss account were recognised in the profit and loss account. In terms of disclosures in the financial statements, the bank indicated that it applied the Eurosystem standards.
	India	*Annual Report 2019-2020, Central Bank of India*, Mumbai 2020, p. 101.	
	Israel	*Financial Statements 2019*, Bank of Israel, Tel-Aviv 2020, p. 12.	The bank indicates that it applied local GAAP, but adapted to the specific nature of the central bank and central banks' practice. Therefore, in terms of recognising the effects of valuation and the layout of the balance sheet and the profit and loss account, it applies the ECB accounting guideline. In addition, it indicates that it applies the Eurosystem standards for the recognition of unrealised gains and losses, the layout of the balance sheet and the profit and loss account.
	Switzerland	*113th Annual Report Swiss National Bank* 2020, Swiss National Bank, Zurich 2021, p.180.	
Eurosystem standards	Eurosystem		
	Poland		
	Romania	*Annual Report 2020*, National Bank of Romania, Bucharest 2021, p. 351.	
	Sweden	Annual Report 2020 for Sveriges Riksbank 2020, Sveriges Riksbank, Stockholm 2021, p. 83.	

Source: own study based on sources indicated in the table.

It seems reasonable that considerations regarding potential changes to the NBP accounting principles should be correlated with the decision on whether or not Poland will adopt the euro single currency in the near future. If NBP becomes a Eurosystem bank in the near term, the accounting principles of NBP should continue to be consistent with the ECB accounting guideline. If the perspective of euro adoption becomes remote, consideration could be given to revising the existing policies.[13] It could then be analysed whether the Eurosystem standards should continue to be the foundation of the NBP accounting or whether the bank can modify them slightly, establish other own accounting rules or potentially adopt the IFRS.[14]

[13] Surveys of the sentiment of Poles in terms of support for the adoption by Poland of the euro single currency could be used as a preliminary step to revise NBP accounting policies in line with those of the Eurosystem. Poles' support for the adoption of the euro declined in 2021. A decline in the support for the European currency is confirmed by the UCE RESEARCH SYNO Poland survey, where a half of respondents stated that Poland should not adopt the euro, while only one in four Poles supported the accession to the Eurosystem, "Polacy nie chcą euro. Badanie pokazuje prawdziwe nastroje w kraju", Money.pl, 03.07.2021 r., https://www.money.pl/pieniadze/polacy-nie-chca-euro-badanie-pokazuje-prawdziwe-nastroje-w-kraju-6657038343129664a.html (accessed: 15 October 2021).

[14] It should be borne in mind that originally Article 67 of the Act on Narodowy Bank Polski of 29 August 1997 (Journal of Laws of 1997, No. 140, item 938) indicated that: "The accounting principles of NBP must comply with the International Accounting Standards." Although in 1998 - 2003 the Act on NBP required that the accounting principles of NBP should be compliant with the IAS, the specific nature of the central bank's operations, which the standards did not take into account, made it impossible to fully implement the solutions defined in the IAS in NBP. It can therefore be said that then NBP had its own accounting principles based on IAS.

2. Eurosystem accounting principles

When analysing the Eurosystem accounting principles, it should be borne in mind that the ECB accounting guideline allows national central banks to make choices regarding the valuation rules for certain assets and liabilities. The “mandatory” scope of application of the ECB accounting guideline applies to assets and liabilities related to the performance of the Eurosystem's common tasks. The “recommended” scope of application, on the other hand, relates generally to the bank's own operations, e.g. tangible fixed assets, financial assets other than related to the conduct of the Eurosystem's common monetary policy or rules for the creation of provisions, e.g. for financial risks, or provisions for future expenses.

If Poland does not adopt the euro in the near future, and NBP follows the Eurosystem standards, changes to the rules for the valuation of assets and liabilities could be considered only in those areas, where the ECB accounting guideline leaves the freedom of choice to national central banks in the scope of its application and assigns it the status of “recommended” rather than “mandatory”.

If, on the other hand, Poland adopts the euro in the near future, the central bank's accounting will face further changes despite the existing compatibility of the NBP accounting rules with the Eurosystem standards. These changes will be driven by the obligations set out in the Statute of the ESCB and the ECB[15] and by the need for NBP accounting to become fully operational for the financial reporting required by the ECB in order to conduct the single monetary policy. This, in turn, will require full alignment of the financial statements created by NBP's accounting with the ECB's expectations and requirements. Therefore, it will be necessary to achieve full compliance of both the balance sheet and the profit and loss account with the ECB reporting requirements that will apply on the date of NBP's entry into the Eurosystem. Given that, since 2004, the layouts of both the balance sheet and the profit and loss

[15] They will relate in particular to the exchange of the domestic currency into euro, the allocation of euro banknotes, the financing of the ECB's capital share, the transfer of a part of the foreign currency reserves and the contribution to the ECB's balance sheet provisions, i.e. the provisions created to cover losses to which the ECB is exposed (foreign exchange rate risk, interest rate risk, gold price fluctuations). For further details, see Protocol (No 4) on the “Statute of the European System of Central Banks and of the European Central Bank”, (OJ C 202, 7.6.2016).

account of NBP have been generally consistent with the layouts prescribed for these reports in the Eurosystem, the adoption of the euro will not necessitate a fundamental redesign of these reports. As regards NBP's profit and loss account, the euro adoption will result in the need to supplement the report with an item related to the net result of conducting a common monetary policy and the distribution (reallocation) of the so-called monetary income.[16] In the case of NBP's balance sheet, on the other hand, a reclassification of some of its items will be required, resulting in a change in its structure. In order to give an idea of this issue, such an exercise is attempted below, using data from the NBP balance sheet as at 31 December 2020 and the structure of the Eurosystem balance sheet, the template of which is shown in Table 2.

Table 2. Annual balance sheet of a central bank of the Eurosystem

Assets	Liabilities
1. Gold and gold receivables 2. Claims on non-euro area residents denominated in foreign currency 2.1. Receivables from the IMF 2.2. Balances with banks and security investments, external loans and other external assets 3. Claims on euro area residents denominated in foreign currency 4. Claims on non-euro area residents denominated in euro 4.1. Balances with banks, security investments and loans 4.2. Claims arising from the credit facility under ERM II 5. Lending to euro area credit institutions related to monetary policy operations denominated in euro 5.1. Main refinancing operations 5.2. Longer-term refinancing operations 5.3. Fine-tuning reverse operations 5.4. Structural reverse operations 5.5. Marginal lending facility 5.6. Credits related to margin calls 6. Other claims on euro area credit institutions denominated in euro 7. Securities of euro area residents denominated in euro 7.1. Securities held for monetary policy purposes 7.2. Other securities	1. Banknotes in circulation 2. Liabilities to euro area credit institutions related to monetary policy operations denominated in euro 2.1. Current accounts (covering the minimum reserve system) 2.2. Deposit facility 2.3. Fixed-term deposits 2.4. Fine-tuning reverse operations 2.5. Deposits related to margin calls 3. Other liabilities to euro area credit institutions denominated in euro 4. Debt certificates issued 5. Liabilities to other euro area residents denominated in euro 5.1. General government 5.2. Other liabilities 6. Liabilities to non-euro area residents denominated in euro 7. Liabilities to euro area residents denominated in foreign currency 8. Liabilities to non-euro area residents denominated in foreign currency 8.1. Deposits, balances and other liabilities 8.2. Liabilities arising from the credit facility under ERM II 9. Counterpart of special drawing rights allocated by the IMF

[16] In the publication composition of the central bank's profit and loss account, as defined in the European Central Bank (EU) Guideline 2016/2249 of 3 November 2016 on the legal framework for accounting..., op. cit., Annex IX, Published Profit and Loss Account of a Central Bank, it is recognised in item 5 *"Net result of pooling of monetary income"*.

8. General government debt denominated in euro 9. Intra-Eurosystem claims 9.1. Participating interest in ECB 9.2. Claims equivalent to the transfer of foreign reserves 9.3. Claims related to the issuance of ECB debt certificates 9.4. Net claims related to the allocation of euro banknotes within the Eurosystem 9.5. Other claims within the Eurosystem (net) 10. Items in the course of settlement 11. Other assets 11.1. Coins of euro area 11.2. Tangible and intangible fixed assets 11.3. Other financial assets 11.4. Off-balance-sheet instruments revaluation differences 11.5. Accruals and prepaid expenses 11.6. Sundry 12. Loss for the year	10. Intra-Eurosystem liabilities 10.1. Liabilities equivalent to the transfer of foreign reserves 10.2. Liabilities related to the issuance of ECB debt certificates 10.3. Net liabilities related to allocation of euro banknotes within the Eurosystem 10.4. Other liabilities within the Eurosystem (net) 11. Items in the course of settlement 12. Other liabilities 12.1. Off-balance-sheet instruments revaluation differences 12.2. Accruals and income collected in advance 12.3. Sundry 13. Provisions 14. Revaluation accounts 15. Capital and reserves 15.1. Capital 15.2. Reserves 16. Profit for the year
Total Assets	Total Liabilities

Source: own study based on Guideline (EU) 2016/2249 of the ECB on the legal framework for accounting..., op. cit, Annex VIII Annual balance sheet of a Central Bank.

The adoption of the euro by Poland and recognising this currency as the domestic currency will mean that all balances will have to be converted from the zloty into the euro as at the date of accession of NBP to the Eurosystem (i.e. 1 January of the year of euro adoption). As the euro will replace the zloty as the reporting currency, assets and liabilities will be converted as well. Selected NBP balance sheet items will also be re-classified. This is because entities from the euro area will start to be treated as residents and other entities as non-residents. The reclassification will generally cover the items listed below, relating to:[17]

1) cash put into circulation. Insofar as banknotes and coins issued are recognised by NBP together on the liabilities side under item L.1. “Banknotes and coins in circulation”, the Bank will have to present them separately once the euro is adopted. Accordingly, the liabilities in item L.1. “Banknotes in circulation”, will only recognise the issuance of banknotes denominated in euro. On the other hand, issued coins will be presented under item L.12.3. “Sundry”;

[17] For the purpose of the analysis, the names of the balance sheet items as defined in the Guideline (EU) 2016/2249 of the European Central Bank of 3 November 2016 on the legal framework for accounting framework..., op. cit, Annex IV Composition and valuation rules for the balance sheet were adopted.

2) any assets and liabilities arising from monetary policy operations which, are not matured, will have to be presented under other claims and liabilities from other domestic monetary financial institutions denominated in euro. This distinction is used to separate monetary policy operations before and after euro adoption. Thus, the overnight deposits recognised in item L.2.2. “Deposit facilities” and NBP bills issued recognised in item L.4. “Liabilities due to issued securities denominated in domestic currency” will have to be recognised in item L.3. “Other liabilities to euro area credit institutions denominated in euro”. Bill discount credits presented in item A.5.6. “Other monetary policy operations”, will have to be moved to item A.6. “Other claims on other domestic monetary financial institutions denominated in domestic currency”. On the other hand, the purchased securities presented in item A.7. “Securities of residents denominated in domestic currency”[18] will be moved to item A.7.2. “Other securities”, recognised under item A.7. “Securities of euro area residents denominated in euro”;

3) claims and liabilities on current accounts of euro area central banks, which will have to be presented on a net basis under assets or liabilities, respectively. Therefore, claims from cash held on NBP *nostro* accounts with the euro area central banks, presented under item A.2. “Claims on non-euro area residents denominated in foreign currency” and liabilities due to cash held on accounts with these central banks operated by NBP recognised under item L.6. “Liabilities to non-euro area residents denominated in euro” will be presented, respectively, under item:
   a) A.9.5 “Other claims within the Eurosystem (net)”, in case of excess of assets over liabilities,
   b) L.10.4 “Other liabilities within the Eurosystem (net)” in the event of excess of liabilities over assets;

[18] For example, Treasury bonds purchased in 2020 on the secondary market and securities guaranteed by the State Treasury as part of structural open market operations which were carried out with the aim of long-term change of the liquidity structure in the banking sector as well as to ensure the liquidity of the secondary market for the purchased debt securities and to strengthen the monetary transmission mechanism (Financial statements of Narodowy Bank Polski as at 31 December 2020, NBP, Warsaw 2021, pp. 23-24).

4) accrued interest on assets and liabilities, which have so far been presented under the same items as the financial instruments relating to them. After the adoption of the euro, they will be presented, respectively, under item A.11.5. “Accruals and prepaid expenses” and in item L.12.2. “Accruals and income collected in advance”;[19]
5) financial result. The financial result of NBP for the year preceding the year of adoption of the euro, as at 1 January of the year of adoption of the euro, will be recognised as the profit of the previous year before distribution under item L.12.3 “Sundry”. On the other hand, the uncovered loss of previous years, if not covered by the time of accession to the euro area, will be shown in capital as retained earnings under L.15.2. “Reserves”;
6) Provision against the foreign exchange rate risk of the złoty (FX risk provision). As at 1 January of the year of adoption of the euro, the provision will have to be transferred from item L.14. “Capital and reserves” and, more specifically from item L.14.3. “Reserve Fund” to item L.13. “Provisions”.

The so-called banknote allocation mechanism will also have an impact on the NBP balance sheet. This will be followed by an increase in liabilities due to the issue of euro banknotes to be recognised under item L.1. “Banknotes in circulation” and an increase in claims in item A.9.4. “Net claims related to the allocation of euro banknotes within the Eurosystem”. The volume of issue of euro banknotes on 1 January of the year of introduction of the euro will be allocated to NBP on the basis of the so-called banknote allocation key.[20] The positive difference between the value of the euro banknotes allocated to NBP in accordance with the key and the value of the euro banknotes that NBP puts into circulation (the compensatory amount) will be recognised as intra-Eurosystem claims under item A.9.4. “Net claims related to the

[19] It is also worth pointing out that adopting such a solution will be another example of evolutionary approach, where at least an element of the old concept appears in the new one. This will mean a return to the presentation of accrued but unpaid interest in the balance sheet that was used by NBP during the transition period.
[20] NBP's share of issued euro banknotes in the Eurosystem will be equal to NBP's share in the ECB subscribed capital key of the euro area NCBs, less the 8% ECB share in the euro issue. These aspects are regulated by the ECB in its decisions on the allocation of monetary income of the national central banks of Member States whose currency is the euro (e.g. Decision of the European Central Bank (EU) 2016/2248 of 3 November 2016 on the allocation of monetary income of the national central banks of Member States whose currency is the euro (ECB/2016/36), (OJ L 347, 20.12.2016).

allocation of euro banknotes within the Eurosystem". The negative difference, on the other hand, will be recognised in item L.10.3. "Net liabilities related to the allocation of euro banknotes within the Eurosystem".[21]

Poland's accession to the Eurosystem will also be associated with NBP's financial obligations to the ECB. They will involve the payment of the uncovered amount of NBP's share in the ECB's capital, the transfer to the ECB of foreign exchange reserves bilaterally agreed between the banks and the payment of a proportional contribution to the ECB's reserves and provisions (the so-called ECB balance sheet reserves).[22] An attempt is made below to present the directions of the evolution of the NBP balance sheet in the event of adoption of the euro by Poland. In this study, the hypothetical date of euro adoption was assumed as 1 January 2021. The analysis was based on data from the NBP balance sheet as at 31 December 2020. In addition, the following assumptions were made, having regard to other publicly available data:[23]

1. The euro is the domestic currency. Accordingly, all balances in PLN are subject to conversion to euro. The conversion is based on the average NBP exchange rate as at 31 December 2020, i.e. EUR 1 = PLN 4.6148/EUR.[24]
2. In the reclassification of selected balance sheet items related to the treatment of euro area entities as residents and other entities as non-residents, it was assumed

[21] It should be indicated that, for the calculation of monetary income, the value of euro banknotes in circulation as presented in the balance sheets of the acceding central banks is further adjusted to allow them to gradually adapt the structure of their balance sheets and the size of their financial results to their operation within the euro area. These adjustments are based on the value of banknotes in circulation at the central bank in the period prior to the introduction of euro banknotes, while the adjustments as such are carried out on an annual basis, according to a fixed formula, over a period of no more than 5 years from that date (see Decision of the European Central Bank (EU) 2016/2248 of 3 November 2016...., op. cit, Article 4). In the following part of the paper, this adjustment has been omitted in the estimates made for NBP.

[22] J. Grabczyński, J. Hylewski, A. Roy, E. Szafarczyk, and M. Zielińska, "*Skutki integracji walutowej dla procesu zarządzania rezerwami dewizowymi w NBP* , NBP, Warsaw 2008 and *Report on full membership of the Republic of Poland in the third stage of the Economic and Monetary Union*, NBP, Warsaw 2009, pp. 239-240.

[23] In addition to data from the NBP balance sheet as at 31 December 2020, ECB data as at 31 December 2020 published in the *Consolidated balance sheet of the Eurosystem as at 31 December 2020*, ECB, Frankfurt 2021 and in *ECB Annual Report 2020*, Frankfurt 2021 will be used. Due to rounding, individual values may not add up to totals.

[24] The following data was used: Table A of average currency exchange rates, Table No. 255/A/NBP/2020 of 31 December 2020, http://rss.nbp.pl/kursy/TabRss.aspx?n=2020/a/20a255 (accessed: 27 September 2021).

that assets and liabilities in EUR would become claims and liabilities to euro residents, respectively, whereas:

2.1. Euro-denominated term deposits (placed) and euro-denominated reverse repo transactions (loans granted), previously presented under item A.2.2. “Balances with foreign institutions, securities, loans granted and other foreign assets” will be reclassified to item A.6. “Other claims on euro area credit institutions denominated in euro”.

2.2. Securities denominated in euro recognised in item A.2.2. “Balances with foreign institutions, securities, loans granted and other foreign assets” and securities denominated in zloty recognised in item A.7. “Securities of residents denominated in domestic currency” will be presented in the item A.7.2. “Other securities”.

2.3. Liabilities in euro due to current and term deposit accounts operated for non-bank entities, previously presented in item L.7. “Liabilities to residents denominated in foreign currency”, will be reclassified to item L.5.1. “General government” under item L.5. “Liabilities to other euro area residents denominated in euro”, and bank accounts held in TARGET2 to item L.3. “Other liabilities to euro area credit institutions denominated in euro”.

2.4. Repo transactions (deposits taken) denominated in euro, previously presented in item L.8. “Liabilities to non-residents denominated in foreign currency”, will be presented in item L.3. “Other liabilities to euro area credit institutions denominated in euro”.

3. In determining the claims and liabilities due to current accounts of the euro area central banks, only NBP’s current account with the ECB will be reclassified. Due to the aforementioned principle of mutual netting of intra-Eurosystem claims and liabilities, after recalculation and reclassification of balance sheet items as at 31 December 2020, the determined excess of liabilities over claims was considered to reduce the value of the liabilities recognised in item L.10.4 “Other liabilities within the Eurosystem (net)” by the euro funds held in the NBP *nostro* account operated by the ECB.

4. Reclassification of accrued interest on assets and liabilities will be omitted.[25]
5. With regard to the determination of item L.1. "Banknotes in circulation", the banknote allocation mechanism will be used (the so-called banknote allocation key). It will be assumed that as at 1 January 2021, NBP does not put new euro banknotes into circulation. The volume of euro banknote issue as at 1 January 2021 allocated to NBP, defined according to the so-called banknote allocation key, will be determined on the basis of the following data: banknotes in circulation as at 31 December 2020 in the euro area: EUR 1.4 trillion, NBP's share in the ECB capital as at 1 January 2021: 6.0%, the share of euro area banks in the ECB capital amounted to 81.3%. It was therefore assumed that, following NBP's accession to the euro area, NBP's share in the ECB capital subscription key for euro area banks would be 6.9%. This means that 6.9% of euro banknotes issued in the Eurosystem will be allocated to NBP. Given that the ECB's share of euro banknotes issued amounts to 8%, the final volume of euro banknotes recognised by NBP will reach 6.4% of the total issue of all euro banknotes, i.e. EUR 91.1 billion.
6. In the scope of transfers to the ECB:
   6.1. NBP's share in the ECB capital.

   The subscribed capital of the ECB will amount to EUR 10.8 billion, i.e. the amount recorded as at 31.12.2020.[26] NBP's share in the ECB subscribed capital amounts to 6.0%, which corresponds to EUR 653.1 million. Non-Eurosystem central banks of EU Member States are only required to pay up 3.75% of the capital (the value of the share paid-up by NBP is EUR 24.5 million) and they neither participate in profit distribution nor cover any losses of ECB. Accordingly, the remaining 96.25% of the ECB subscribed capital, corresponding to EUR 628.6 million, will be payable by NBP upon Poland's

[25] In the annual financial statements for 2020, NBP did not generally distinguish detailed information relating to accrued interest on financial instruments. Interest on liabilities on overnight deposits accepted, with the zero value as at 31 December 2020 was an exception.

[26] The share of individual central banks in the ECB capital is determined in accordance with Article 29.1 of the Statute of the ESCB and of the ECB. The shares of individual central banks in the capital are adjusted every 5 years in accordance with the above-mentioned key. They are also subject to change upon the EU enlargement, Protocol (No 4) on the Statute of the European System of Central Banks and of the European Central Bank, (OJ C 202, 7.6.2016).

accession to the euro area. This will result in an increase of the NBP shares in the ECB (item A.9.1. "Participating interest in ECB") and liabilities (L.10.4. "Other liabilities within the Eurosystem (net)").

6.2. Transfer of foreign exchange reserves to the ECB.

The amount of foreign exchange reserves transferred by each central bank to the ECB is calculated, in accordance with Article 48.1 of the Statute of the ESCB and of the ECB,[27] by multiplying the euro value of the foreign reserves assets which have already been transferred to the ECB by the ratio of the number of shares subscribed by the central bank concerned adjusted by the number of shares already paid up by other euro area central banks. The amount of foreign exchange reserves to be transferred by NBP to the ECB would be estimated at EUR 5.2 billion (the estimated market value of the ECB's foreign exchange reserves is approximately EUR 70.5 billion, NBP's share in the ECB's subscribed capital is 6.0% and the euro area banks' share in the ECB's capital is 81.3%). In the structure of foreign exchange reserves transferred to the ECB by the central bank upon accession to the euro area, assets denominated in USD would account for 85% and monetary gold - for 15% (estimate based on data available as at 31 December 2014, related to the accession of Bank of Lithuania to the Eurosystem as of 1 January 2015[28]). In accordance with Article 30.3 of the Statute of the ESCB and of the ECB, the equivalent of the foreign exchange reserves transferred is the claim of the central bank concerned on the ECB, calculated according to the same rules as the value of the foreign exchange reserves to be transferred, except that the calculation is not based on the actual amount of the reserves transferred, but on the total amount of this claim attributable to central banks previously belonging to the euro area. In the case of NBP, the claim will amount to approximately EUR 3.0 billion (the total amount of claims of the euro area central banks at the end of 2020 amounted to EUR

[27] Ibidem.

[28] Decision of the European Central Bank (EU) 2015/287 of 31 December 2014 on the paying-up of capital by Lietuvos bankas, the transfer of foreign reserve assets and the contribution to the European Central Bank's capital and special purpose reserves (ECB/2014/61) was taken into account, (OJ L 50, 21.2.2015).

40.3 billion). The difference between the estimated amount of foreign exchange reserves that NBP would be required to transfer to the ECB (EUR 5.2 billion) and the amount of claims due from the ECB (EUR 3.0 billion) would be approximately EUR 2.2 billion and would be classified as part of NBP's contribution to the ECB balance sheet reserves on a pro-rata basis (see the next point). Claims due to transferred reserves denominated in USD, recognised in the NBP balance sheet before the accession in item A.2.2. “Balances with foreign institutions, securities, loans granted and other foreign assets”, and gold recognised in item A.1. “Gold and gold receivables”, will be presented in the balance sheet after the adoption of the euro under item A.9.2. “Claims equivalent to the transfer of foreign reserves”.

6.3. Contribution to the ECB balance sheet reserves.

In accordance with the Statute of the ESCB and the ECB,[29] starting from the accession to the euro area, a central bank shall participate in the creation of the ECB balance sheet reserves, the ECB resources equivalent to the reserves. The amount that NBP will be required to pay is the result of multiplying the ECB total balance sheet reserves (EUR 35.8 billion) by the ratio of the number of shares subscribed by NBP in the ECB capital (6.0%) to the number of shares subscribed and previously contributed by other central banks (81.3%). Accordingly, in the case of NBP, the estimated amount as at 1 January 2021 would be EUR 2.7 billion. Given the surplus of foreign exchange reserves transferred (see point above - EUR 2.2 billion), NBP would only be required to pay a surcharge of EUR 0.5 billion. The claim in respect of balance sheet reserve transferred will be presented in item A.9.1. “Participating interest in ECB”. On the other hand, the obligation to transfer them – in item L.10.4. “Other liabilities within the Eurosystem (net)”. In the scope of the contribution to the ECB reserves and provisions, it has been assumed that the obligation to contribute and the claim arising on this

[29] Protocol (No. 4) on the Statute of..., op. cit.

account would already be recognised in the full amount as at 1 January 2021.[30]

Table 3 shows what a hypothetical balance sheet of NBP as at 1 January 2021 would look like if that date were the day on which Poland adopted the euro and NBP became a member of the Eurosystem. For the sake of clarity, the changes in the NBP balance sheet related to the reclassification and booking of events related to the adoption of the euro (allocation of banknotes, transfers to NBP) are presented in 3 groups, visible in Table 3:

A - Reclassification of selected asset and liability items of the NBP balance sheet,

B - Banknote allocation mechanism,

C - Transfers to the ECB.

[30] In practice, the payment shall be made after the ECB financial statements have been approved by the ECB Governing Council.

Table 3. NBP balance sheet before and on the date of the hypothetical adoption of the euro (millions of currency units)

Assets (million)		31.12.2020 PLN	31.12.2020 EUR	01.01.2021 Reclassifications/bookings A (EUR)	B (EUR)	C (EUR)	Total (EUR)	Closing balance of the day (EUR)
1.	Gold and gold receivables	52,252.6	**11,322.8**	0.0	0.0	-2,813.4	-2,813.4	**8,509.5**
2.	Claims on non-euro area residents denominated in foreign currency	527,465.9	**114,298.8**	-29,290.6	0.0	-2,418.9	-31,709.5	**82,589.3**
	2.1. Receivables from the IMF	6,879.4	**1,490.7**	0.0	0.0	0.0	0.0	**1,490.7**
	2.2. Balances with banks and security investments, external loans and other external assets	520,586.5	**112,808.0**	-29,290.6	0.0	-2,418.9	-31,709.5	**81,098.6**
3.	Claims on euro area residents denominated in foreign currency	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
4.	Claims on non-euro area residents denominated in euro	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	4.1. Balances with banks, security investments and loans	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	4.2. Claims arising from the credit facility under ERM II	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
5.	Lending to euro area credit institutions related to monetary policy operations denominated in euro	53.0	**11.5**	-11.5	0.0	0.0	-11.5	**0.0**
	5.1. Main refinancing operations	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	5.2. Longer-term refinancing operations	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	5.3. Fine-tuning reverse operations	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	5.4. Structural reverse operations	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	5.5. Marginal lending facility	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	5.6. Credits related to margin calls	53.0	**11.5**	-11.5	0.0	0.0	-11.5	**0.0**
6.	Other claims on euro area credit institutions denominated in euro	0.0	**0.0**	10,478.5	0.0	0.0	10,478.5	**10,478.5**
7.	Securities of euro area residents denominated in euro	112,563.0	**24,391.7**	18,204.5	0.0	0.0	18,204.5	**42,596.2**
	7.1. Securities held for monetary policy purposes	112,563.0	**24,391.7**	-24,391.7	0.0	0.0	-24,391.7	**0.0**
	7.2. Other securities	0.0	**0.0**	42,596.2	0.0	0.0	42,596.2	**42,596.2**
8.	General government debt denominated in euro	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
9.	Intra-Eurosystem claims	0.0	**0.0**	619.1	91,146.1	5,684.3	97,449.5	**97,449.5**
	9.1. Participating interest in ECB	0.0	**0.0**	0.0	0.0	3,310.4	3,310.4	**3,310.4**
	9.2. Claims equivalent to the transfer of foreign reserves	0.0	**0.0**	0.0	0.0	2,993.0	2,993.0	**2,993.0**
	9.3. Claims related to the issuance of ECB debt certificates	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	9.4. Net claims related to the allocation of euro banknotes within the Eurosystem	0.0	**0.0**	0.0	91,146.1	0.0	91,146.1	**91,146.1**
	9.5. Other claims within the Eurosystem (net)	0.0	**0.0**	619.1	0.0	-619.1	0.0	**0.0**
10.	Items in course of settlement	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
11.	Other assets	1,978.9	**428.8**	0.0	0.0	-24.5	-24.5	**404.3**
	11.1. Coins of euro area	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	11.2. Tangible and intangible fixed assets	1,031.5	**223.5**	0.0	0.0	0.0	0.0	**223.5**
	11.3. Other financial assets	297.2	**64.4**	0.0	0.0	-24.5	-24.5	**39.9**
	11.4. Off-balance-sheet instruments revaluation differences	444.4	**96.3**	0.0	0.0	0.0	0.0	**96.3**
	11.5. Accruals and prepaid expenses	37.3	**8.1**	0.0	0.0	0.0	0.0	**8.1**
	11.6. Sundry	168.5	**36.5**	0.0	0.0	0.0	0.0	**36.5**
12.	Loss for the year	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	Total assets	**694,313.5**	**150,453.7**	**0.0**	**91,146.1**	**427.5**	**91,573.6**	**242,027.3**

Liabilities (million)		31.12.2020 PLN	31.12.2020 EUR	01.01.2021 Reclassifications/bookings A	B	C	Total	Closing balance of the day
				EUR				
1.	Banknotes in circulation	321,800.7	**69,732.3**	-1,240.7	91,146.1	0.0	89,905.4	**159,637.7**
	1.1. Euro	0.0	**0.0**	0.0	91,146.1	0.0	91,146.1	**91,146.1**
	1.2. Banknotes denominated in domestic currencies of euro area countries	321,800.7	**69,732.3**	-1,240.7	0.0	0.0	-1,240.7	**68,491.6**
2.	Liabilities to euro area credit institutions related to monetary policy operations denominated in euro	62,629.4	**13,571.4**	-6,375.3	0.0	0.0	-6,375.3	**7,196.1**
	2.1. Current accounts (covering the minimum reserve system)	30,351.4	**6,577.0**	619.1	0.0	0.0	619.1	**7,196.1**
	2.2. Deposit facility	32,278.0	**6,994.5**	-6,994.5	0.0	0.0	-6,994.5	**0.0**
	2.3. Fixed-term deposits	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	2.4. Fine-tuning reverse operations	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	2.5. Deposits related to margin calls	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
3.	Other liabilities to euro area credit institutions denominated in euro	444.9	**96.4**	35,866.4	0.0	0.0	35,866.4	**35,962.8**
4.	Debt certificates issued*	127,767.7	**27,686.5**	-27,686.5	0.0	0.0	-27,686.5	**0.0**
5.	Liabilities to other euro area residents denominated in euro	24,859.7	**5,387.0**	9,062.8	0.0	0.0	9,062.8	**14,449.7**
	5.1. Liabilities to general government	23,852.9	**5,168.8**	9,062.8	0.0	0.0	9,062.8	**14,231.5**
	5.2. Other liabilities	1,006.8	**218.2**	0.0	0.0	0.0	0.0	**218.2**
6.	Liabilities to non-euro area residents denominated in euro	2,196.2	**475.9**	0.0	0.0	0.0	0.0	**475.9**
7.	Liabilities to euro area residents denominated in foreign currency	46,262.8	**10,024.9**	-9,681.9	0.0	0.0	-9,681.9	**343.0**
8.	Liabilities to non-euro area residents denominated in foreign currency	45,352.5	**9,827.6**	-1,185.5	0.0	0.0	-1,185.5	**8,642.2**
	8.1. Deposits, balances and other liabilities	45,352.5	**9,827.6**	-1,185.5	0.0	0.0	-1,185.5	**8,642.2**
	8.2. Liabilities arising from the credit facility under ERM II	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
9.	Counterpart of special drawing rights (SDR) allocated by the IMF	7,128.7	**1,544.8**	0.0	0.0	0.0	0.0	**1,544.8**
10.	Intra-Eurosystem liabilities	0.0	**0.0**	0.0	0.0	427.5	427.5	**427.5**
	10.1. Liabilities equivalent to the transfer of foreign reserves	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	10.2. Liabilities related to the issuance of ECB debt certificates	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	10.3. Net liabilities related to allocation of euro banknotes within the Eurosystem	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	10.4. Other liabilities within the Eurosystem (net)	0.0	**0.0**	0.0	0.0	427.5	427.5	**427.5**
11.	Items in course of settlement	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
12.	Other liabilities	729.9	**158.2**	3,265.5	0.0	0.0	3,265.5	**3,423.7**
	12.1. Off-balance-sheet instruments revaluation differences	0.1	**0.0**	0.0	0.0	0.0	0.0	**0.0**
	12.2. Accruals and income collected in advance	90.1	**19.5**	0.0	0.0	0.0	0.0	**19.5**
	12.3. Sundry	639.7	**138.6**	3,265.5	0.0	0.0	3,265.5	**3,404.2**
13.	Provisions	179.6	**38.9**	2,134.6	0.0	0.0	2,134.6	**2,173.5**
14.	Revaluation accounts	45,740.4	**9,911.7**	0.0	0.0	0.0	0.0	**9,911.7**
15.	Capital and reserves	-123.0	**-26.7**	-2,134.6	0.0	0.0	-2,134.6	**-2,161.3**
	15.1. Capital	1,500.0	**325.0**	0.0	0.0	0.0	0.0	**325.0**
	15.2. Reserves	-1,623.0	**-351.7**	-2,134.6	0.0	0.0	-2,134.6	**-2,486.3**
16.	Profit for the year	9,344.1	**2,024.8**	-2,024.8	0.0	0.0	-2,024.8	**0.0**
	Total liabilities	**694,313.5**	**150,453.7**	**0.0**	**91,146.1**	**427.5**	**91,573.6**	**242,027.3**

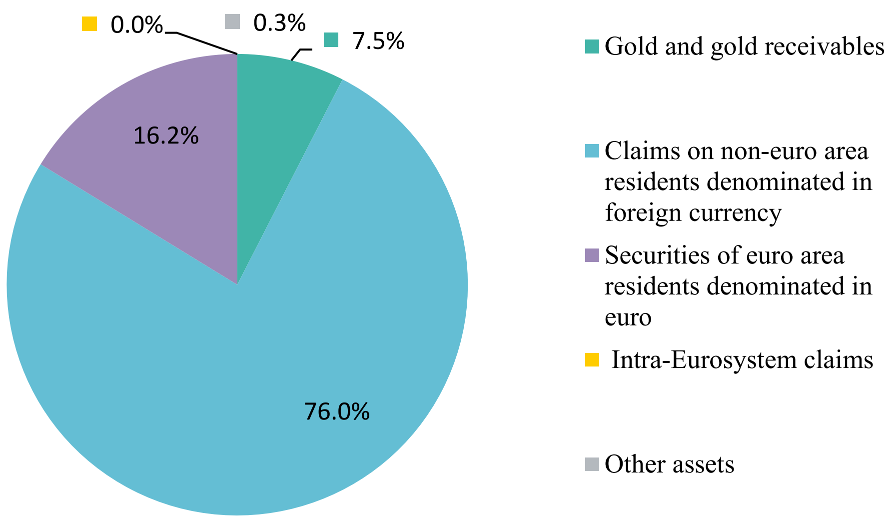
* As at 31 December 2020, liabilities due to the issue of NBP bills are presented in this item.

Source: Own study, based on: *Financial statements of Narodowy Bank Polski as at 31 December 2020*, NBP, Warsaw 2021; *Consolidated balance sheet of the Eurosystem as at 31 December* 2020”, ECB; *ECB Annual Report 2020*, Frankfurt 2021; Decision of the European Central Bank (EU) 2015/287 of 31 December 2014 on the paying-up of capital by Lietuvos bankas, the transfer of foreign reserve assets and the contribution to the European Central Bank's capital and special purpose reserves (ECB/2014/61), (OJ L 50, 21.2.2015).

The analysis of the balance sheet conducted above based on the hypothetical assumptions shows that Poland's accession to the euro area would result in an increase in the balance sheet total of approximately 61%. The main reason for the increase in the balance sheet total would be events related to the euro banknote reallocation mechanism (see column B of the balance sheet and the description in point 5 above). Changes in the asset structure would result in a decrease in claims in monetary gold and the US dollar due to the transfer of foreign exchange reserves by NBP to the ECB (see column C of the balance sheet and point 6.1 above), in favour of an increase in claims within the Eurosystem. Moreover, a reduction in foreign currency assets in favour of an increase in domestic currency claims would occur, due to the treatment of the euro no longer as a foreign currency but as a domestic currency. Consequently, a reduction in the exposure to foreign exchange rate risk would take place (treating the euro as a domestic currency rather than a foreign currency would mean less foreign currency in the portfolio) accompanied by the risk of changes in foreign interest rates - mainly changes in the price of debt securities (the securities portfolio denominated in euro would no longer be dependent on foreign interest rates).

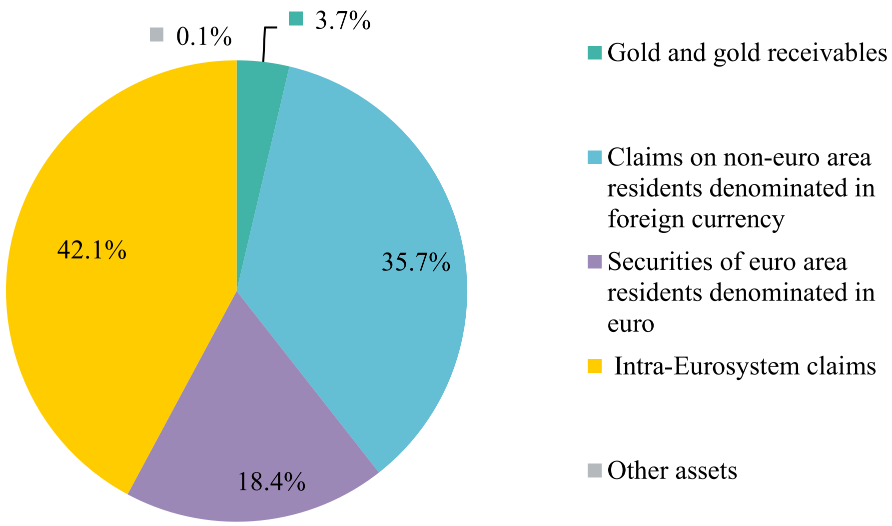
Changes in NBP's asset structure before and on the day of the hypothetical adoption of the euro, are shown in Charts 1 and 2.

Chart 1. Structure of NBP assets as at 31.12.2020 - before the hypothetical euro adoption day



Source: own study.

Chart 2. Structure of NBP assets as at 01.01.2021 - on the day of the hypothetical euro adoption date

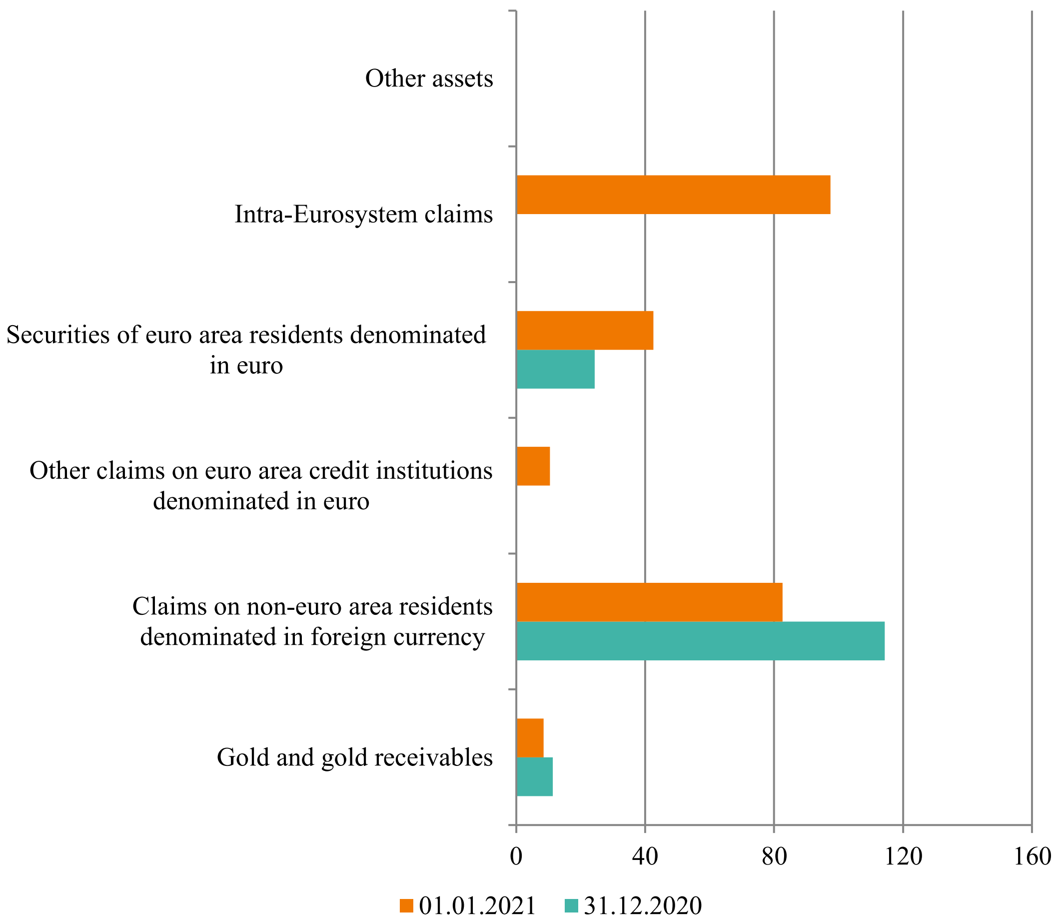


Source: own study.

Prior to the day of hypothetical adoption of the euro, the structure of NBP's assets would be dominated by claims from non-residents denominated in foreign currency, domestic securities and gold. Upon accession to the Eurosystem, the structure would change significantly, namely the share of foreign currency in assets and gold would decrease in favour of an increase in the value of claims in the domestic currency, i.e. the euro, primarily as a result of reserve assets in euro becoming assets in domestic currency and as a consequence of the transfer of foreign currency and gold to the ECB. The share of domestic securities denominated in domestic currency, i.e. the euro, would also change, as this position would be increased by the securities of the Eurosystem countries held on 31 December, prior to the hypothetical date of the euro adoption.

NBP's assets before and after the hypothetical date of the adoption of the euro are presented in Chart 3.

Chart 3. NBP assets before and after hypothetical adoption of the euro (EUR billion)

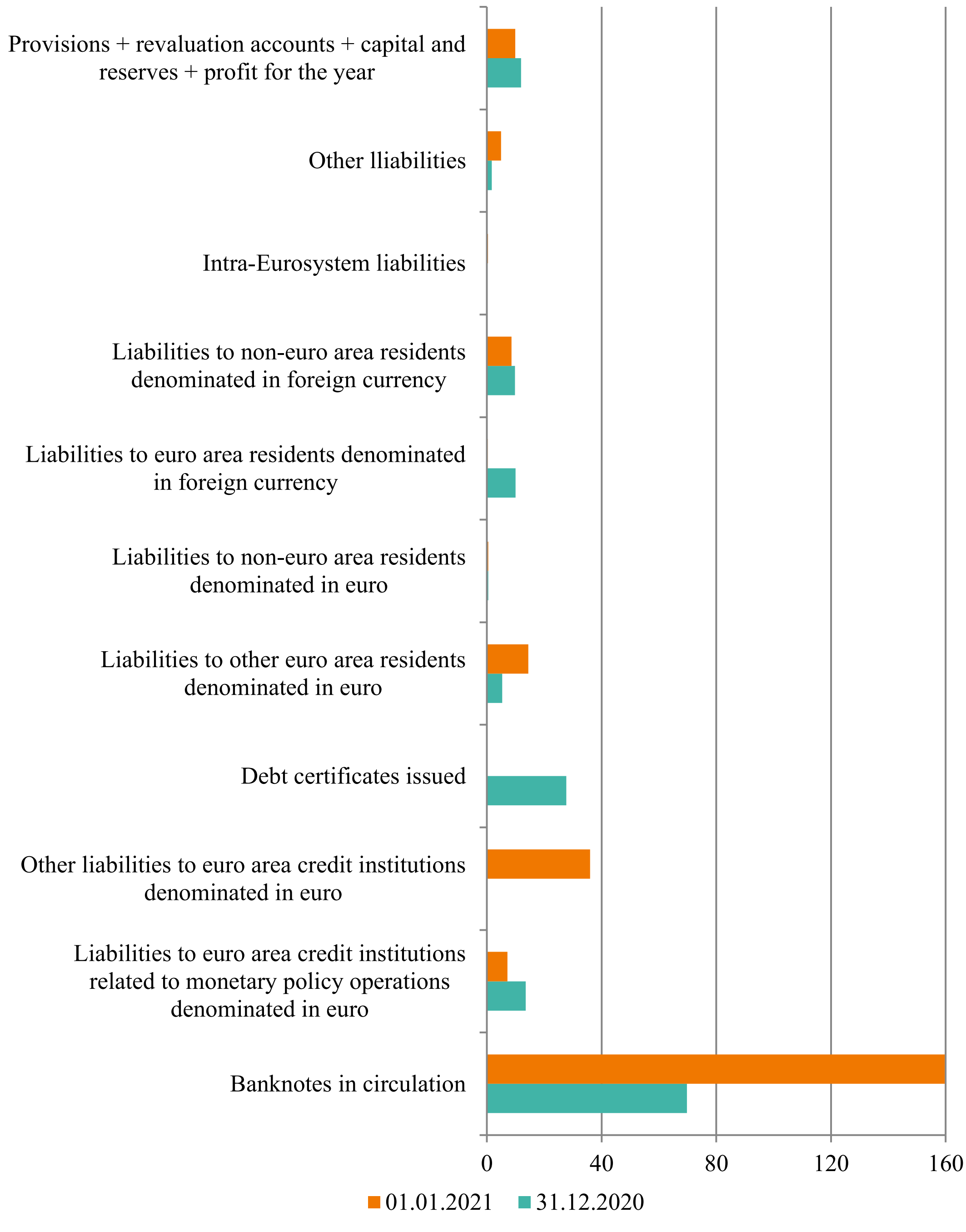


Source: own study.

On the liabilities side, accession to the Eurosystem would result in a more than double increase in the share of banknotes in circulation due to the allocation of the euro to Poland according to the banknote allocation key, a decrease in liabilities to banks due to monetary policy operations and the emergence of other liabilities to credit institutions in euro, among others, due to the reclassification of NBP bills issued prior to the adoption of the euro (see Chart 4).

NBP's liabilities before and after the hypothetical date of the euro adoption are presented in Chart 4.

Chart 4. NBP liabilities before and after hypothetical adoption of the euro (EUR billion)



Source: own study.

3. Modified accounting principles of the Polish central bank

The search for "appropriate" accounting principles for NBP can be linked to the need to build larger buffers to protect the central bank against financial risks. The relevance of this issue was pointed out, for example, by the Governor of the Central Bank of Sweden in his speech of 8 December 2020 on the challenges for monetary policy in a changing world. At the time, he argued that financial asset purchases, which are now part of standard monetary policy tools, involved the transfer of various risks from the public to central banks' balance sheets. He pointed out that the increase in risk associated with financial asset purchases was not commensurate with the increase in the bank's risk buffers. Hence, in accordance with generally accepted accounting principles, the central bank should create a provision for risks existing in the balance sheet. The reason is that risk-absorbing buffers could have been limited when the bank's balance sheet total was small. However, over the recent years, the purchase of new assets has resulted in an increase of the balance sheet total. At the time of his speech, the Governor of the Bank of Sweden announced that from 2020 onwards the Bank of Sweden would start to make provisions to strengthen risk buffers (revaluation accounts).[31]

Since the growth of the balance sheet total was also recorded by NBP (Chart 5),[32] among others, as a result of the inflow of foreign currencies as well as the purchase of securities in the domestic currency on the secondary market as part of structural open market operations,[33] it seems justified that any potential changes in the NBP accounting rules should also take into account the need to build "appropriate", new hedging buffers, i.e. buffers that are commensurate with the risks (related to foreign exchange rate and interest rate) that may increase due to the growth of balance sheet items bearing these risks (foreign currencies, securities). Thus, it

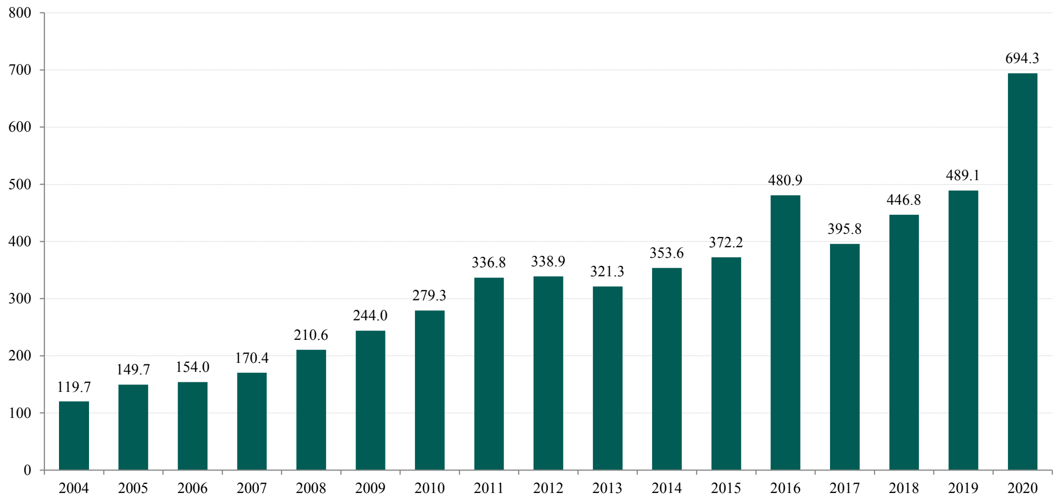
[31] Speech by Stefan Ingves on 2 December 2020, S. Ingves, "Monetary policy in a changing world", Sveriges Riksbank, pp. 10-11, available at: https://www.riksbank.se/ globalassets/media/tal/ engelska/ingves/2020/ingves-speech-monetary-policy-in-a-changing-world.pdf (accessed: 12 January 2021). In his speech, he also emphasised that a transfer of risk from the public to the central bank's balance sheet was one of the channels through which asset purchases could affect the economy (monetary policy transmission channel).

[32] The balance sheet total of NBP has been presented since the year of Poland's accession to the EU according to accounting principles compliant with the ECB accounting guidelines.

[33] *Financial statements of Narodowy Bank Polski as at 31 December 2020*, p. 13.

seems reasonable that the issue of building a strong capital position of NBP (higher equity), should be taken into account in the search for new solutions in the scope of accounting principles.

Chart 5. NBP balance sheet total 2004-2020 (PLN billion)



Source: own study based on the NBP annual financial statements for 2004-2020.

In view of the foregoing, should the prospect of Poland's accession to the Eurosystem prove distant, bearing in mind that accounting should describe current rather than "hypothetical" economic reality,[34] consideration could be given to amending or modifying the NBP accounting principles, so far based on the ECB accounting guideline. This would allow to adapt to the expectations of the changing environment in which the central bank operates.

A guidance to the search for new solutions can be found in the provision setting foundations for NBP's accounting in the years 2004-2020. Indeed, referring to other sources that constitute accounting principles has been conditionally allowed in NBP since the adoption of the accounting policy conforming to the ESCB guidelines.

[34] In the situation of a non-euro area country central bank (factual situation) which has accounting principles in place as if it were a euro area bank (hypothetical situation), one could have the impression that, with its "Eurosystem-like" accounting policy, it operates in a different (hypothetical) economic reality.

As early as in 2004, the regulations governing NBP's accounting principles indicated[35] that when issues other than those regulated by the resolution arise, they should be resolved taking into account the following documents in force as at the date of the financial statements:

a) ECB accounting guideline,

b) reports and decisions of the ECB AMICO Committee (Accounting and Monetary Income Committee), the preparatory work for the ECB accounting guidelines, and

c) international accounting standards.

The obligation to achieve reliability and accuracy in the financial statements was indicated as a *sine qua non* condition for admission of these solutions. This hierarchical provision, where the order of the solutions cited was important, indicated the way towards finding solutions to problems arising in NBP accounting. In fact, the priority was given to accounting principles "tailored" to the needs of central banks and taking into account their specific features (ECB guideline).[36] International accounting standards were the last solution to consider.[37]

The above considerations prompt the reflection that two scenarios could be considered if NBP were to depart from the Eurosystem's accounting principles:

1) IFRS as the guiding principles (hereinafter "scenario I"), or

2) modify the existing accounting principles based on the ECB guideline (hereinafter "scenario II").

In order to make the analysis more transparent, the presentation of financial information according to the NBP accounting principles conforming to the ECB accounting guideline will be hereafter referred to as the "baseline scenario".

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[35] Resolution No. 16/2003 of the Monetary Policy Council of 16 December 2003 on the accounting principles, the format of the balance sheet and the profit and loss account of Narodowy Bank Polski, Official Journal of NBP of 2003 No 22, § 2(2).

[36] The ECB accounting guideline did not standardise all accounting issues. It focused only on issues relevant to the Eurosystem's analytical and operational needs in the pursuit of the common monetary policy. Hence, central banks clarify certain issues in their internal regulations (e.g. issues of bookkeeping, tangible fixed assets, intangible assets).

[37] With this wording, the provision indicated that not only IFRS but also other standards of a supranational nature could be applied in exceptional situations.

Where alternatives are identified, the question arises what should be the primary determinant underlying the selection of the "new" accounting principles. Considering this, it is worth bearing in mind the issue of the so-called "currency asymmetry" of the NBP balance sheet,[38] which, when the Eurosystem principles are applied, leads to the volatility in the financial result, due to the occurrence of differences from valuation of foreign currency and gold (realised and unrealised). Thus, as a criterion for the selection of the "new" accounting principles, one could adopt:

a) the amount of equity and
b) volatility of the financial result,

while the target principles should demonstrate low volatility of the financial result, which should translate into more stable payments to the state budget (more predictable amounts). In terms of equity, on the other hand, they should result in a higher level of equity, which in turn should translate into greater financial independence of the bank.[39]

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[38] At this point, it is worth mentioning that the surplus of assets in foreign currencies in relation to liabilities in foreign currencies (a permanent occurrence of the so-called "open long currency position"), resulting in currency asymmetry (prevalence of foreign currencies over the domestic currency) and high exposure to foreign exchange rate risk, is characteristic of the Polish economy, i.e. an economy that has undergone transformation, where it has accumulated foreign currency reserves and receives large inflows of funds - for the time being - in foreign currency (in euro), and is awaiting the accession to the Eurosystem.

[39] A number of authors have written about the role and importance of equity for the central bank. Garreth Rule pointed out that central banks are not focused on profit maximisation but on achieving monetary policy objectives. Meeting these objectives can expose the bank – as a socially responsible monetary institution – to high risks and losses. The channel that allows the central bank to absorb these losses is equity. It is difficult to identify the optimum level of central bank's equity. Indeed, the correct level of equity is determined by a number of unique factors related to the situation in which the bank finds itself, including the institutional structure and the types of operations the bank performs. G. Rule, "Understanding the central bank balance sheet", *Centre for Central Banking Studies Handbook no 32*, Bank of England, London 2015, pp. 14-15. Peter Stella, on the other hand, expressed the view that a central bank generally does not need capital. However, he stressed that chronic bank losses could have a negative impact on price stability, as banks may attempt to cover losses by money creation. He pointed out that the adequate level of capital depends on the economic environment in which the bank operates, the historical legacy reflected in the balance sheet and the bank's relationship with the government, P. Stella, "Do Central Banks Need Capital?", *IMF Working Papers*, No. 97/83, IMF, Washington 1997, pp. 33-34. Therefore, to enable financially weak central banks to fully recover their monetary policy functions, governments should effectively restore central bank's financial strength, H. L.I. Jacome, "Central Bank Involvement in Banking Crises in Latin America", *IMF Working Paper*, No. 08/135, International Monetary Fund, Washington 2008, p. 30. The reason is that financially weak central banks generate losses. The losses undermine macroeconomic stability and the credibility of the bank's policies. Therefore, the government should strengthen the central bank's balance sheet, e.g. by providing the bank with marketable securities. These could be used for money market development.

The adoption by NBP of the standards set out in IFRS (scenario I), – which, as already mentioned, are well established among central banks as leading or supporting accounting standards – although possible, may raise practical issues. The reason is that the concept of a central bank's activity is different from that of a company making profit. Both the central bank's business model and its expectations of future cash flows are radically different. IFRS do not take into account the specific nature of a central bank, the way it finances its activities and its unique status in the economy. For the sake of broadly understood social welfare, the bank should conduct monetary policy in such a way as to ensure a stable price level, even if it incurs high costs in doing so. It is supposed to manage foreign exchange reserves so that the state has the ability to settle its obligations to foreign countries on an ongoing basis, even if it loses by investing in less profitable but liquid financial instruments.

A problem in the application by NBP of the accounting principles set out in IFRS may be the differences that exist between both systems.[40] In general terms, the differences stem from the diverse needs of the recipients to which the financial statements are addressed. While the recipients of financial statements of the private sector entities need information about the current value of the company and its

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The money market could become a venue for central bank monetary operations. This could serve to both directly strengthen the bank and improve the quality of the environment in which it operates, thus facilitating the achievement of its ultimate performance objectives, P. Stella, "Central Bank Financial Strength, Policy Constraints, and Inflation", *IMF Working Paper*, No. 08/49, International Monetary Fund, Washington 2008, p. 23. Alex Cukierman stressed that while negative capital would not lead to the bankruptcy of the central bank, the government should ensure that the bank is recapitalised. He pointed out that the level of desired capital should depend on, among other things, the enormity of the distortions to which the bank's monetary policy is exposed (the larger the shocks, the higher the capital should be), the number of tasks for which the central bank is responsible (the more diverse the tasks, the higher the capital), and the government's propensity to create deficits (more capital means more protection for the bank's independence), A. Cukierman, "Central Bank Finances and Independence - How Much Capital Should a CB Have?", May 21 2006, pp. 1-3 and 10-12. It should be pointed out that central banks, unlike commercial banks, are not subject to capital requirements regulation (maintenance of capital buffers). There is also no standard indicating the appropriate level of (capital) reserves for the central bank, Ch. Sermon, P. Trout, and E. Filipova, "New challenges for central banks", *The Journal. Tackling the key issues in banking and capital markets*, August 2005, p. 14.

[40] The comparison of the IFRS and the ECB Accounting Guideline is based on: "Financial reporting in the Eurosystem", *Monthly Bulletin*, ECB, April 2012, pp. 94-96, KPMG, "Current trends in central bank financial reporting practices", October 2012, pp. 12-20, V. Ivanović, "The Key Characteristics of Financial Reporting in the European System of Central Banks", *Journal of Central Banking Theory and Practice*, 2013, pp. 47-69; BIS reports, "IFRS 9 and expected loss provisioning – Executive Summary, Bank for International Settlements", 13.12.2017 (accessed: 08 December 2021); *The Annotated IFRS Standards, Standards issued at 1 January 2020*, IFRS Foundation, London 2020; Guideline of the European Central Bank (EU) 2016/2249 of 3 November 2016 on the legal framework for accounting …, op. cit.

solvency and announcements that can support their investment decisions, the stakeholders of a central bank – knowing that it cannot be declared bankrupt[41]– are more focused on obtaining information about the effects of implementation of the central bank function. Hence, IFRS prefer fair value for the measurement of financial instruments and indicate the need to report on cash flows. On the other hand, the ECB guideline promotes market valuation mainly in relation to financial instruments denominated in foreign currencies used in the management of foreign exchange reserves. On the contrary, with regard to instruments in domestic currency, they favour valuation at amortised cost, i.e. the purchase price adjusted for the amortised discount and premium, subject to impairment, which may also be related to the fact that these instruments are mostly related to monetary policy or financial stability and it is the central bank that generally sets the price of domestic money in the domestic interbank market.

Significant differences between the ECB accounting guideline and the IFRS relate to the classification method of purchased financial instruments and consequently the approach to the effects of their valuation. The classification of financial instruments into the appropriate category, as provided for by the IFRS, is subordinated to the business model (the adopted purpose of holding and managing a particular group of financial assets) and the characteristics of cash flows arising from the financial instrument purchased. Accordingly, the IFRS identify three categories of financial assets:[42]

[41] The power of the central bank based on money issuance and creation, and the consequent low probability of its failure, was mentioned by Christine Lagarde in the Speech by the President of the ECB, during the so-called "monetary dialogue" before the Committee on Economic and Monetary Affairs, held on 19 November 2020 in Brussels. With regard to the ECB, she pointed out that: "As the sole issuer of euro-denominated central bank money, the Eurosystem will always be able to generate additional liquidity as needed. So, by the definition, it will neither go bankrupt nor run out of money. In addition to that, any financial losses, should they occur, would not impair our ability to seek and maintain price stability. (...) We are the only issuer, and we are not at risk as a result." The issues of "unlimited power to create money" by the central bank, which can thwart the process of "cascading sequence of defaults" leading to "financial implosion" in the economy were also pointed out by Alan Greenspan, "Central Banking and Global Finance", remarks by the Federal Reserve Board Chairman at the Catholic University Leuven, Leuven 1997.

[42] Commission Regulation (EU) 2016/2067 of 22 November 2016 amending Regulation (EC) No 1126/2008 adopting certain international accounting standards in accordance with Regulation (EC) No 1606/2002 of the European Parliament and of the Council as regards International Financial Reporting Standard 9, Annex, International Financial Reporting Standard 9 Financial Instruments, (OJ L 323, 29.11.2016,§ 5).

1) measured at amortised cost,
2) measured at fair value through other comprehensive income,
3) measured at fair value through profit or loss.

The first category includes instruments that are held to collect contractual cash flows. These flows should occur on specified dates and are solely payments of the principal and interest on the principal amount outstanding. These flows should not demonstrate volatility dependent on, for example, fluctuations in prices of other financial instruments, foreign exchange rates or commodity prices. Thus, loans and credits in domestic and foreign currency and purchased securities (bonds) that are not held for the purpose of trading are most often included in this category (their sale may only be occasional). On the other hand, structured products, derivatives, foreign currency-indexed mortgages whose repayment volume depends not only on the interest rate but also on the exchange rate of foreign currency against the domestic currency (i.e. the external price of the currency), should not be included in this category. Financial assets classified in this category are measured at amortised cost, i.e. the purchase price adjusted for amortised discounts and premiums, and will be tested for impairment at the end of the financial year.

The second category includes financial assets acquired by an entity both to generate cash flows from holding a financial instrument and to generate cash flows from trading in those instruments (sales) or only to generate cash flows from holding a financial instrument with a possibility of selling it before maturity (sales on a large scale or with greater frequency and not only on an occasional basis). This category is characteristic of entities that need to manage liquidity on an ongoing basis (e.g. in order to match maturities of assets and financial liabilities) or wish to achieve certain rates of return on financial instruments. Financial assets included in this category are measured at fair value, mainly at a market price.[43] The effects of this valuation, i.e. an

[43] More on the fair value: I. Budzik-Nowodzińska, “Wartość godziwa w wycenie przedsiębiorstwa”, *Studia Ekonomiczne. Zeszyty Naukowe Wydziałowe*, no 126, *Za i przeciw wartości godziwej w rachunkowości. Problemy stosowania i wykorzystania wartości godziwej*, Uniwersytet Ekonomiczny w Katowicach, Katowice 2012, p. 25. The author points out there that “(...) the fair value is a broader concept than the market value since it is determined by the market price formed in an active market on which a reliable valuation of goods takes place as well as in a hypothetical market, when an active market does not exist for a given asset, i.e. in fact, there is no such market”. On the other hand, L. Poniatowska indicates that valuation is the most important link in the accounting system

increase in value or a decrease in value, are presented in other comprehensive income, i.e. directly in equity (revaluation reserve).

The third category includes financial assets which, because of the model adopted by the entity, could not have been included in the previously mentioned categories. This applies to assets in respect of which the enterprise expects to realise cash flows primarily through the sale of financial assets and the realisation of contractual cash flows is incidental and does not constitute the primary purpose of holding them, as is the case of the two aforementioned categories (e.g. payment of a coupon on a security currently held).

In the case of the ECB accounting guideline, the classification of financial assets is generally subordinate to the following objectives:

a) investment, primarily related to the management of foreign exchange reserves, where the aim is to achieve certain cash flows as well as to obtain a certain rate of return, and
b) monetary and foreign exchange policies, where the primary focus is the obligation to maintain a stable price level, ensure payment liquidity and an adequate foreign exchange policy, while the issue of achieving a certain rate of return or receiving certain cash flows is secondary.

Therefore, the ECB accounting guideline, depending on the management intent of the central bank, enables the valuation of purchased marketable securities at:

a) market price: securities denominated in foreign currency, securities in domestic currency held for monetary policy purposes,
b) amortised cost: securities denominated in foreign currency held to maturity (HTM), securities in domestic currency held to maturity, securities in domestic currency held for monetary policy purposes.

While the principles for classifying financial assets differ for the two sets of accounting principles (IFRS, ECB accounting guideline), the principles for both initial measurement (date of recognition) and subsequent measurement (balance sheet date)

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and, at the same time, is its biggest problem, L. Poniatowska, “Wartość godziwa i jej zastosowanie w wycenie bilansowej aktywów i zobowiązań według regulacji krajowego prawa rachunkowości”, in: H. Buk, A. Kostur, “Za i przeciw wartości godziwej w rachunkowości. Problemy stosowania i wykorzystania wartości godziwej”, *Studia Ekonomiczne*, no 126, Uniwersytet Ekonomiczny w Katowicach, Katowice 2012, p. 235.

are not fundamentally different. Indeed, it can be recognised that the market prices used by the Eurosystem central banks for the valuation of financial assets (mainly representing foreign exchange reserves) express the fair value of the financial assets referred to in IFRS. An alternative to market price valuation, valuation at amortised cost, is also common. The ECB accounting guideline specifically allows it for financial assets acquired for purposes other than achieving benefits in the form of a price differential or certain cash flows (mainly for monetary policy purposes). A certain convergence between IFRS and the ECB accounting guidance can also be seen in the obligation to assess impairment losses on financial assets measured at amortised cost. However, while the IFRS rely on the so-called “model of expected credit losses” in order to calculate impairment losses, the ECB accounting guideline relies on the so-called “incurred loss” concept.[44]

Discrepancy between the IFRS and the ECB accounting guideline can be seen in the principles of determining the financial result. While the IFRS allow the recognition of unrealised currency revaluation gains/losses in either profit or loss or equity (other comprehensive income in the case of equity instruments), the ECB accounting guideline requires asymmetric recognition of unrealised currency revaluation gains/losses. This is due to one of the fundamental principles of Eurosystem accounting – the principle of prudence. According to it, unrealised losses (revaluation losses on foreign currencies and gold and debt securities) reduce the financial result as at the balance sheet date while unrealised gains (revaluation gains on foreign currencies and gold) increase the bank's equity (revaluation accounts).[45]

Furthermore, the IFRS do not regulate areas specific and relevant to central bank accounting. A clear example are the rules concerning gold meeting international

[44] The incurred loss method requires credit losses to be recognised only if evidence of loss was apparent. Therefore, the reassessment of recoverable amounts takes place only if real evidence exists that the loans cannot be repaid in full. In the “expected credit losses” model, an entity is required to recognise expected credit losses continuously, taking into account not only past events but also current conditions and forecasts. It is also required to update the amount of expected credit losses recognised at each reporting date to reflect changes in the value of assets as a result of credit risk. The method of “expected credit losses” is more forward-looking than the “incurred loss” model and should contribute to more timely recognition of credit losses.
[45] The principle of prudence also applies to the valuation of debt securities, during which the unrealised gains and unrealised losses on price revaluation are determined. Their treatment is identical to that for foreign currencies and gold.

purity standards. Under the IFRS regime, this is one of the core financial assets of central banks which would be treated – in relation to physical holdings of monetary gold held in bars (*allocated gold*) – as a stock of precious metal, and in relation to gold in non-physical form (*unallocated gold*), e.g. deposits placed or accepted in monetary gold, as a financial instrument. Thus, the same asset in terms of asset type but different as to physical form would be treated differently. When looking for an analogy, this state of affairs could be compared to cash, where different principles would apply to cash and still different to funds held in a bank account. Therefore, in the ECB accounting guideline regime, monetary gold, both in physical and non-physical form, is treated as a single asset and the principles for its valuation and the recognition of its effects, are similar to those provided for financial instruments[46] (methods of gold outflow recording, market valuation, asymmetric recognition of valuation effects), allowing it to properly reflect the purpose of its holding. The IFRS also do not address the central bank-specific aspect of money issuance, either the cost of money production or the treatment of money withdrawn from circulation.

A key difference between IFRS and the ECB accounting guideline also relates to provisions for financial risk, which are created as expense. The specific nature of the central bank's operations, the value of the instruments traded by the central bank and their importance for the fulfilment of the central bank's objective and tasks require the bank to hedge in a specific way against the financial risks associated with its operational activities, which, if materialised, could lead to losses. In fact, the provisions for risk contribute to the financial independence of the central bank and strengthen the bank's capacity to fulfil its statutory tasks.[47] However, in accordance with the IFRS, provisions cannot be created for future operating losses.[48] The IFRS only allows the creation of provisions for future liabilities. This means that a provision

[46] The Central Bank of Brazil, which prepares its annual financial statements in accordance with the IFRS, uses fair value measurement for monetary gold, rather than the cost or purchase price stipulated for gold as inventory in IAS 2 “Inventories”. This is because it believes that, according to the conceptual framework for the IFRS, this is the most appropriate way to reflect its value. It recognises valuation effects in the financial result, *Financial Statements, Banco Central do Brasil*, 31 December 2020*,* Brasilia 2021, p. 12.
[47] *Annual Report for Sveriges Riksbank 2020*, Sveriges Riksbank, Stockholm 2021, p. 49.
[48] IAS 37 Provisions, Contingent Liabilities and Contingent Assets, §63, [in:] The Annotated IFRS Standards. Standard issued at 1 January 2021, reflecting changes not yet required, Part A, International Accounting Standards Board. London 2021, p. A1778.

is created when an economic entity has a current obligation as a result of a past event and it is probable that an outflow of resources which include economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of such an obligation.[49] The ECB guideline, which takes into account the specific features of a central bank, recognises the nature of economic events specific only to central banks and identifies the risks involved, admits provisions not only for future liabilities as in the IFRS, but also for financial risks (credit risk, interest rate risk, gold price risk, foreign exchange rate risk),[50] covering, among other things, future losses. The IFRS also fail to address the nature of the common benefits and risks involved in the conduct of the Eurosystem single monetary policy and the management of foreign exchange reserves by the ECB and for the ECB by other Eurosystem central banks. The application of the IFRS to assets used for the performance of the Eurosystem's joint tasks could raise questions as to what value of financial assets used for this purpose should be recognised in the balance sheet of the central bank performing these operations.

An analysis of the differences between the IFRS and the ECB accounting guideline highlights two important factors:

a) a diverse approach to differences from the valuation of foreign currency and gold, and
b) lack of possibility to create provisions for financial risks,

that may be relevant to achieving the assumed objective – i.e. to develop accounting principles that are appropriate for NBP, ensuring less volatility in the financial result and a higher equity. In the case of NBP, which has a large open FX position, the obligation to recognise differences from revaluation of foreign currencies and gold (unrealised gains/losses) in profit or loss, in the absence of the possibility to create a provision for financial risk under the IFRS regime, the full application of IFRS does not seem appropriate. This is confirmed by an analysis of NBP's annual financial statements for 2011 – 2020.[51] In preparing the analysis, it was assumed that NBP

[49] Ibidem.
[50] Guideline (EU) 2016/2249 of the European Central Bank of 3 November 2016 on the legal framework for accounting… op. cit., Art. 8.
[51] The period of analysis, covering the years 2011 - 2020, was chosen conventionally.

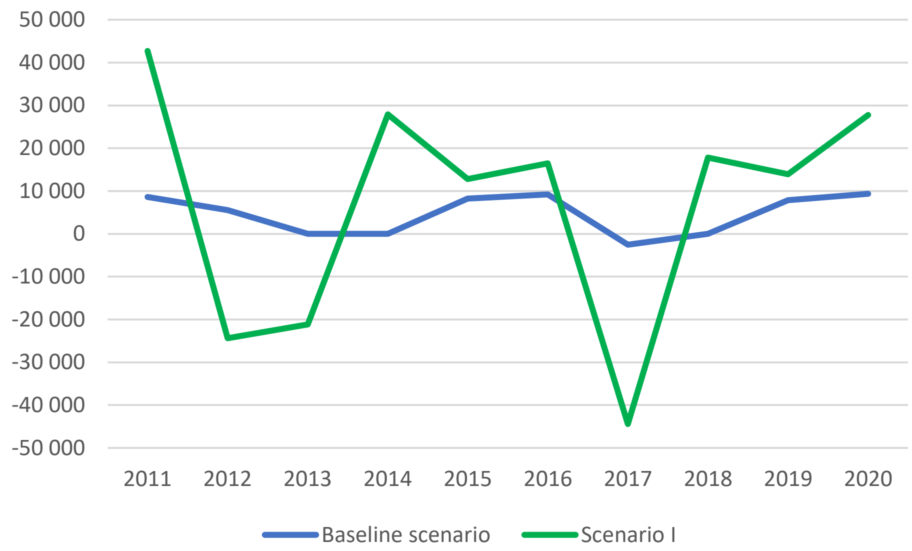
cannot create a provision to cover the risk of changes in the exchange rate of the zloty to foreign currencies, the result on financial operations does not include expenses on and income from the creation and release of this provision, and differences from the revaluation of foreign currencies and gold[52] would be recognised in the financial result regardless of whether they were realised or not.[53] It was assumed that the amount of uncovered loss of previous years amounted to PLN -12.4 billion (i.e. equal to the uncovered loss actually incurred NBP in 2007), and is increased by future losses and decreased by the fully released reserve fund. As regards securities held in foreign currencies, due to the fact that they are subject to trading their valuation at market prices through profit or loss was adopted. On the other hand, securities purchased by NBP in 2020 for monetary policy purposes have been classified as measured at an amortised cost (the purchase price adjusted for the discount/premium amortisation, less any impairment loss).

The results of the analysis concerning the development of the NBP financial result in 2011-2020, if it was calculated according to the IFRS principles (scenario I) against the actual NBP financial result (baseline scenario), are presented in Chart 6.

[52] This assumes that gold will be treated as a financial instrument rather than as inventory under IAS 2 “Inventories”.

[53] The assumption has been adopted that all assets and liabilities denominated in foreign currency are items whose valuation is not recognised in equity.

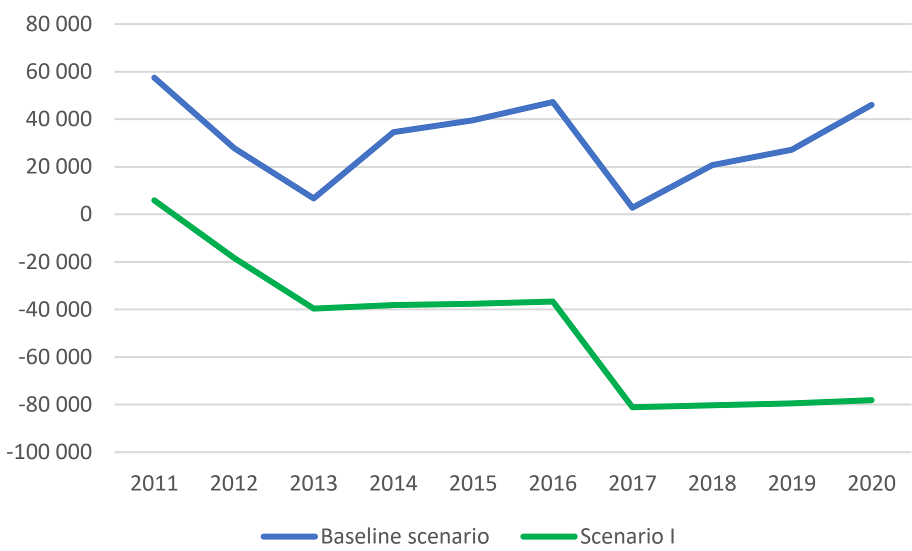
Chart 6. NBP financial result under scenario I against the baseline scenario for the years 2011-2020 (PLN million)



Source: own study based on information from NBP annual financial statements for 2011-2020.

The results of the analysis, concerning the development of the NBP equity in 2011-2020 if it was calculated according to the IFRS principles (scenario I) against the actual NBP equity (baseline scenario), are presented in Chart 7.

Chart 7. NBP equity under scenario I against the baseline scenario for the years 2011-2020 (PLN million)



Source: own study based on information from NBP annual financial statements for 2011-2020.

This analysis shows that recognising realised and unrealised gains/losses on foreign currency and gold as well as securities in foreign currency in the NBP financial result would have dramatically increased the volatility of the financial result, i.e. by almost 400% when applying the IFRS (scenario I) compared to almost 90% when applying the principles compliant with the ECB guideline (baseline scenario). Moreover, in the period under review, NBP would have recorded enormous losses on several occasions (in the baseline scenario, this occurred only once in 2017), which would have translated into a dramatic reduction of its equity (see Chart 7). This, accompanied by the principles of distribution of the financial result assuming that the government cannot cover the loss and the reserve fund is insufficient, would have led to negative equity of NBP. Thus, when applying IFRS accounting principles (scenario I) rather than the ECB accounting guideline (baseline scenario), the capital position of NBP would have deteriorated. Therefore, the adoption of the IFRS accounting principles would have to be accompanied by a change in the rules for the distribution of the financial result in terms of treatment of gains/losses on the revaluation of foreign currency and gold (unrealised gains and losses).

The failure of the IFRS to capture the overall nature of the central bank may lead to a search for alternatives. One of them could be the adoption of modified IFRS-based principles, i.e. the principles characteristic to the central banks of Russia and South Africa. Despite relying on the IFRS, they do not apply the principles for recognising the effects of foreign currency valuation, i.e. IAS 21 "The Effects of Changes in Foreign Exchange Rates".[54] However, a complete reconfiguration of NBP's accounting principles towards the IFRS would imply the need to change not only the accounting regulations or the IT systems supporting NBP's accounting, but

[54] In the years 1999-2003, when NBP was obliged to apply the IAS, the provisions of §15 of the IAS 21 standard, regarding the translation of the effects of foreign currency revaluation into profit or loss, were also not applied (*International Accounting Standard 21 The Effects of Changes in Foreign Exchange Rates* (revised in 1993), [in:] International Accounting Standards 1999, International Accounting Standards Committee, London 1999, The Accountants Association in Poland, p. 576. According to the legal status as of 2021, the wording of the referenced §15 of IAS 21 of 1999 is included in §28, *IAS 21 The Effects of Changes in Foreign Exchange Rates*, [in:] The Annotated IFRS Standards. Standard issued at 1 January 2021, reflecting changes not yet required, Part A, International Accounting Standards Board. London 2021, p. A1473.

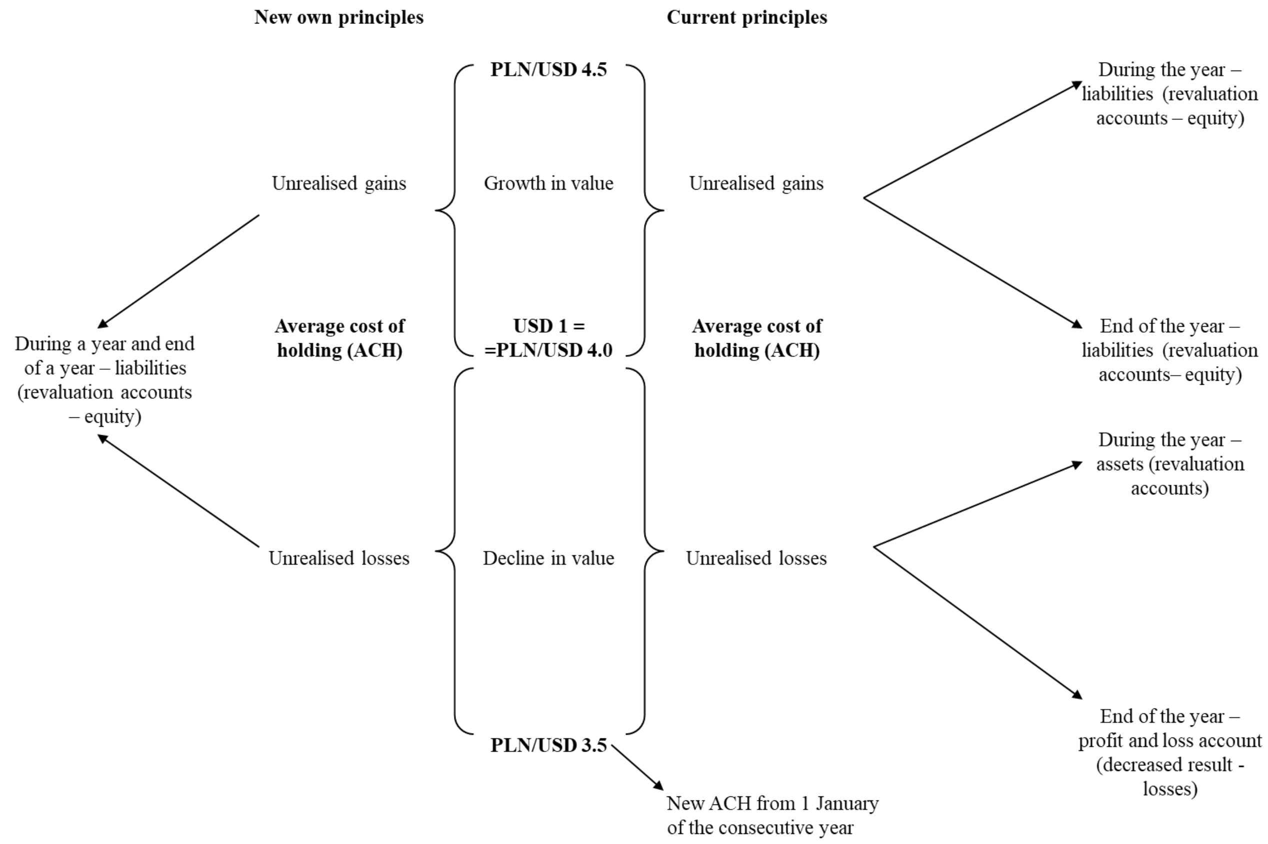
also the need to start a discussion on the principles of distributing NBP's financial result.

Taking into account the foregoing difficulties, consideration could be given to adopting modified accounting principles (scenario II). These principles could be based on the ECB accounting guideline, with some modifications and exceptions (the so-called "ECB-based" model). They would need to be amended to achieve the assumed objective, i.e. building a higher equity of NBP while reducing the volatility of the financial result.[55] Consequently, the following steps may be considered:

1) a change in accounting rules with regard to:
   a) a departure from the principle of prudence with respect to the treatment of unrealised losses on revaluation of foreign currency and gold as well as securities,[56] which would mean that unrealised losses on revaluation of foreign currency and gold as well as securities would no longer be deducted from the year-end financial result,[57] thus
   b) in the event of the occurrence of unrealised valuation losses on foreign currency, gold and securities, the average cost of the holding of foreign currency, the average cost of the holding of gold and the average cost of the holding of debt securities of the same code, would not be adjusted at the year-end for the exchange rate and the price of gold and the price of the debt security as at the balance sheet date adopted for the valuation, as is the case of the occurrence of unrealised gains (Figure 1),

[55] Fulfilment of these conditions and, above all, the building up of a higher NBP equity would mean a lower financial result and thus a lower NBP profit remittances to the state budget.
[56] Due to the low materiality of the unrealised price revaluation losses relative to the foreign exchange gains/losses over the period 2011-2020, price differences were not taken into account in the analysis of the change in accounting principles.
[57] Both unrealised gains and losses would be derecognised before the next valuation, as is the case under the current rules for unrealised gains.

Figure 1. Presentation of currency valuation under current and modified accounting principles (scenario II)



Source: own study.

2) further increase of the amount of the provision against the foreign exchange rate risk of the zloty by a half (50%) of realised FX (transaction) gains,[58] i.e. assuming that the rules introduced by the MPC in 2019 (Resolution No. 6/2019 of the MPC) with regard to the creation of a provision to cover the risk of zloty exchange rate to foreign currencies were valid for the period 2011-2020. The provision would then fulfil two roles:
   a) it would be used when there are realised FX (transaction) losses in the amount resulting in a loss,

[58] Excluding realised gains/losses on gold pursuant to the provisions of Resolution no 6/2019 of the MPC of 5 November 2019 on the principles for creating and releasing the provision against the foreign exchange rate risk of the zloty at Narodowy Bank Polski, Official Journal of NBP of 2019, item 14.

b) whereas the FX risk provision recognised in equity would, to a certain extent, offset the unrealised currency revaluation losses presented there,[59]

3) not recognising the expenses related to the issue of banknotes and coins on a one-off basis on the day of the event, but spreading them over time, e.g. over a period of 10 years as in the central bank of Croatia.

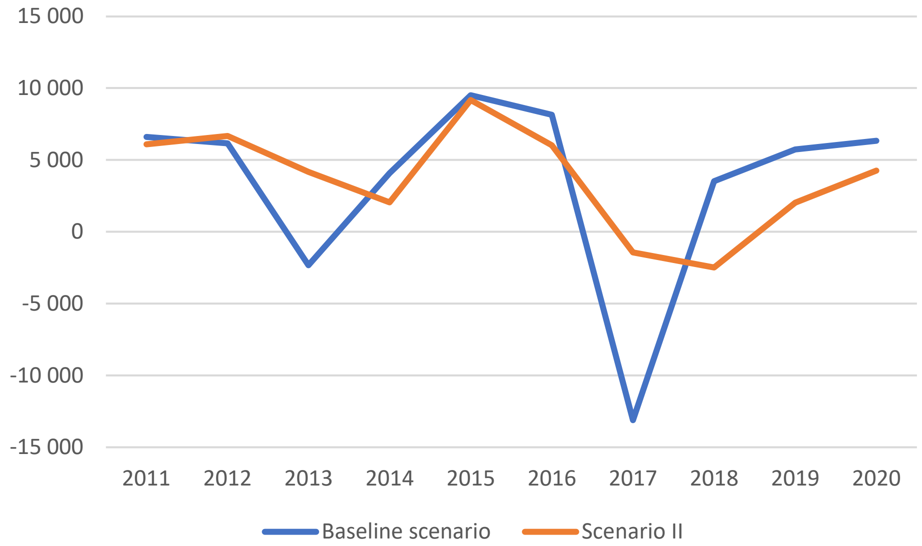
In order to make the analysis more transparent, the presentation of the financial information according to the modified accounting principles, as already mentioned, was referred to as “scenario II”.

The simulation of the application of the modified accounting principles (scenario II), performed for the period 2011-2020, leads to the following conclusions:

1) not recognising unrealised valuation losses on foreign currencies and gold in the financial result would have had the effect of eliminating the volatility of foreign exchange rates differences recognised in the profit and loss account. Only realised – transaction – differences would have been recognised. The volatility of exchange rate and gold price differences would have decreased by almost a half, i.e. from 180% to over 90% (see Chart 8);

[59] The assumption made here is that in the equity in item L.13. “Revaluation accounts” will show both unrealised losses and gains on the revaluation of foreign currency and gold.

Chart 8. FX gains/losses recognised in the financial result according to modified principles (scenario II) against actual FX gains/losses (baseline scenario) in the years 2011 - 2020 (PLN million)[60]

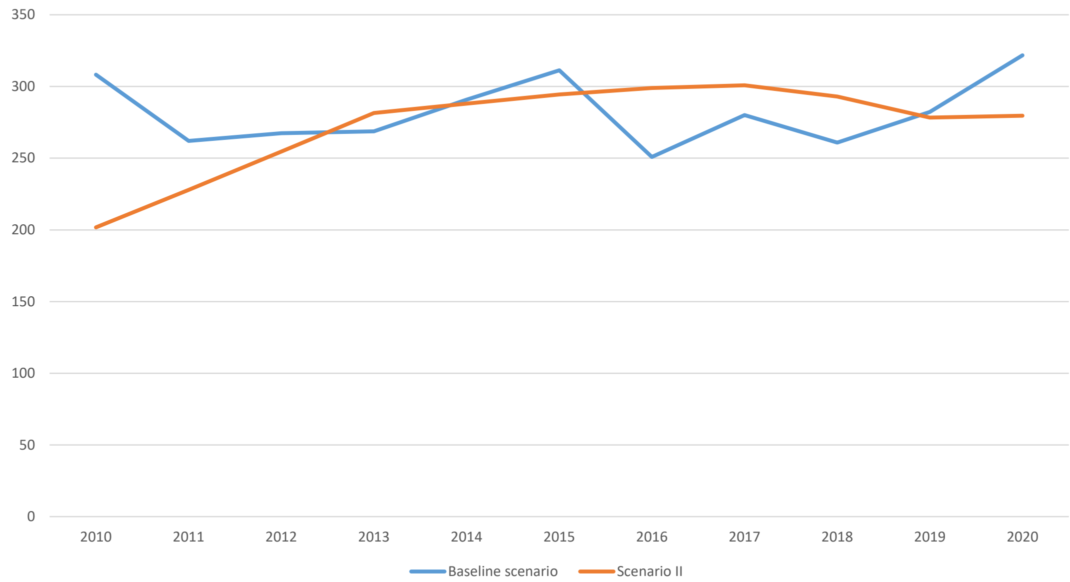


Source: own study based on information from NBP annual financial statements for 2011-2020.

2) abandoning recognition of unrealised losses in the financial result would not have significantly changed the trend of exchange rate gains/losses recognised in the financial result. The reason is that the unrealised losses recognised in one year (e.g. 2013 and 2017) were actually realised one year later, but at a lower amount than in the baseline scenario (in 2014 and 2018 respectively);
3) settlement of expenses on issued banknotes and coins over a contractual period of 10 years would have allowed the expenses to be spread more steadily over time. On the other hand, it would not have reduced their volatility, which would have amounted to approximately 7.7% in both cases (see Chart 9);

[60] The currency revaluation gains/losses recognised in the financial result under scenario II, relate only to realised foreign currency and gold revaluation gains/losses, whereas under the baseline scenario, they include, in addition to realised gains/losses, unrealised losses on the year-end currency and gold revaluation.

Chart 9. Expenses on banknote and coin issuance according to the modified principles (scenario II) compared to the actual expenses of banknote and coin issuance (baseline scenario) in the years 2011-2020 (PLN million)

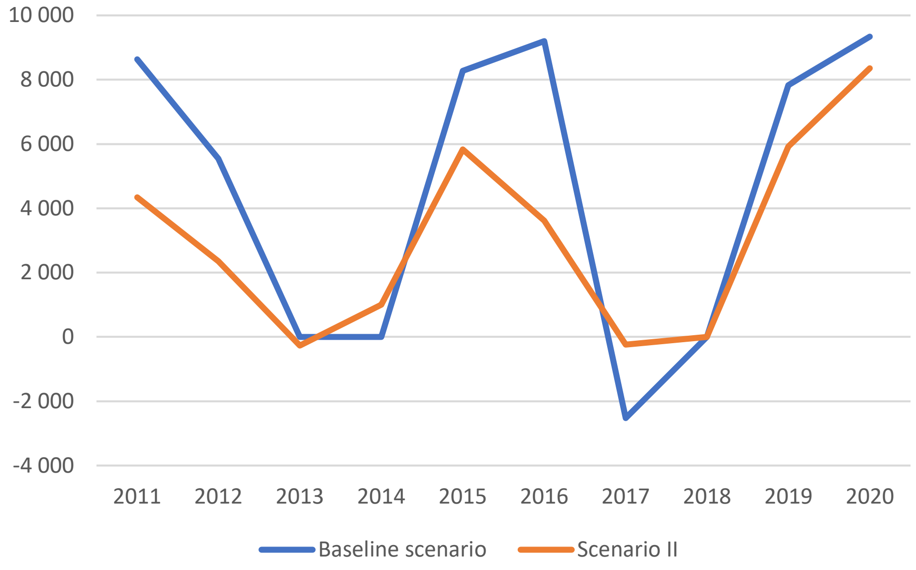


Source: own study based on information from NBP annual financial statements for 2011-2020.

4) the introduction of the new principles would not have resulted in a significant reduction in the volatility of the financial result, which would still have been around 93% compared to 96% under the current policy. Moreover, under the new principles, two cases would have occurred where the bank would have incurred a loss (2013[61] and 2017), whereas in real terms it only incurred a loss once, in 2017 (see Chart 10);

[61] The hypothetical loss for 2013 would have mainly resulted from the negative interest income.

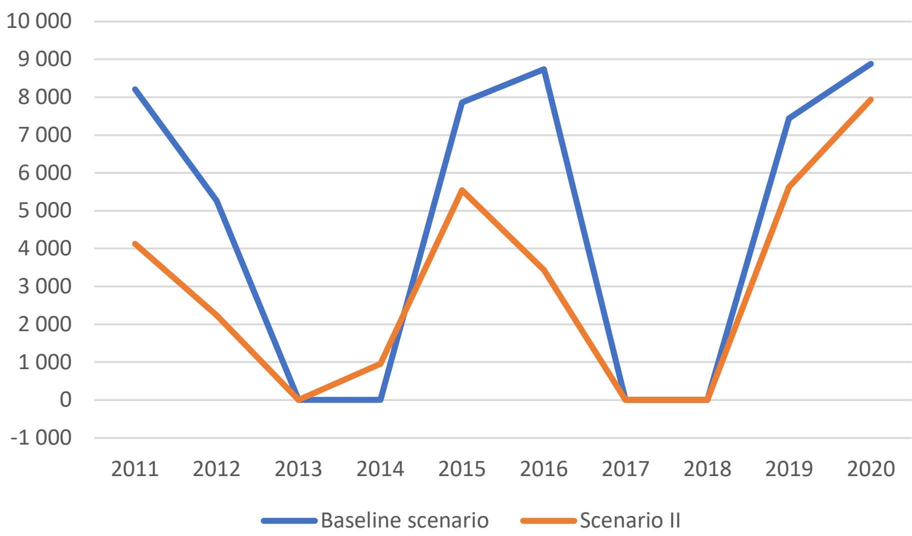
Chart 10. Financial result of NBP according to modified principles (scenario II) against actual result (baseline scenario) in the years 2011 - 2020 (PLN million)



Source: own study based on information from NBP annual financial statements for 2011-2020.

5) a reduction in the average financial result of almost PLN 1.5 billion would have been recorded and, consequently, a reduction in payments to the state budget of almost PLN 1.5 billion. The volatility of contributions to the state budget would also not have changed significantly, i.e. it would have increased from 84% to 89% (see Chart 11).

Chart 11. Contribution to the state budget according to modified principles (scenario II) against the actual contribution (baseline scenario) in the years 2011 - 2020 (PLN million)

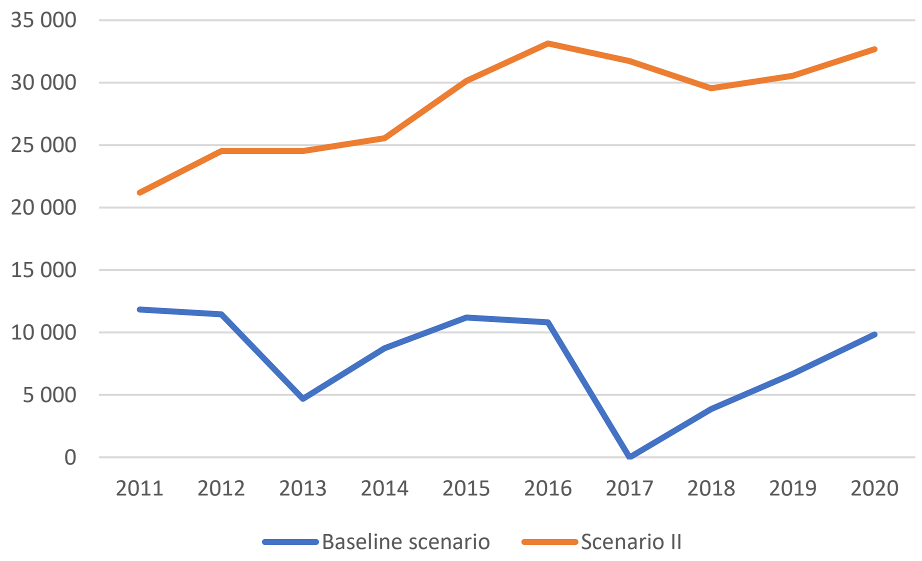


Source: own study based on information from NBP annual financial statements for 2011-2020.

6) despite the recognition in equity of unrealised foreign currency revaluation losses, a reduction in the average financial result and thus a reduction in the contribution to the state budget, as well as the creation of a provision to cover the risk of volatility in the zloty exchange rate to foreign currencies in an amount corresponding to 50% of the realised foreign currency revaluation gains to a higher limit of the provision, the following changes would have occurred:

a) significant increase in FX risk provision (see Chart 12),

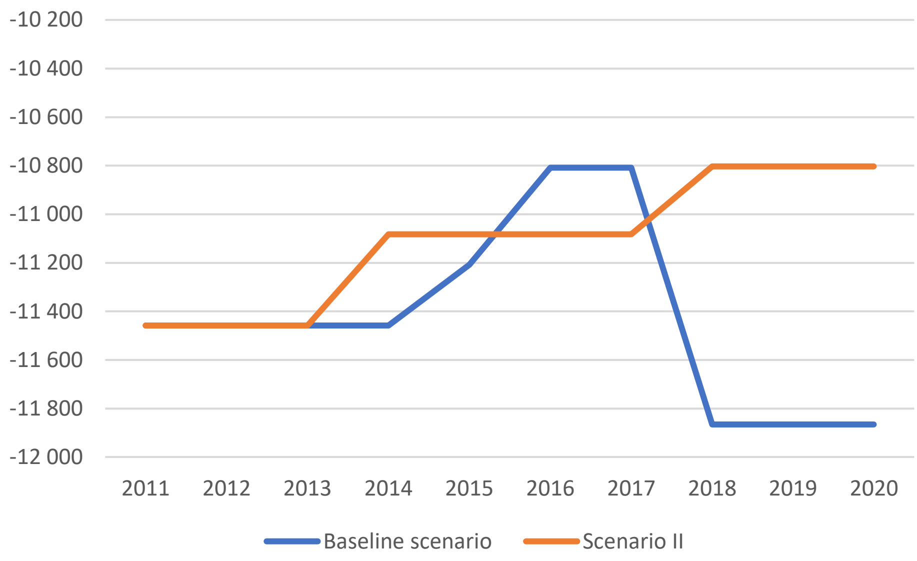
Chart 12. **FX risk provision according to modified principles (scenario II) against the actual amount of the provision (baseline scenario) in the years 2011 - 2020 (PLN million)**



Source: own study based on information from NBP annual financial statements for 2011-2020.

b) reduction of the uncovered loss from previous years, despite the occurrence of two periods with a loss, where in reality only the first of these periods with a loss occurred (see Chart 13),

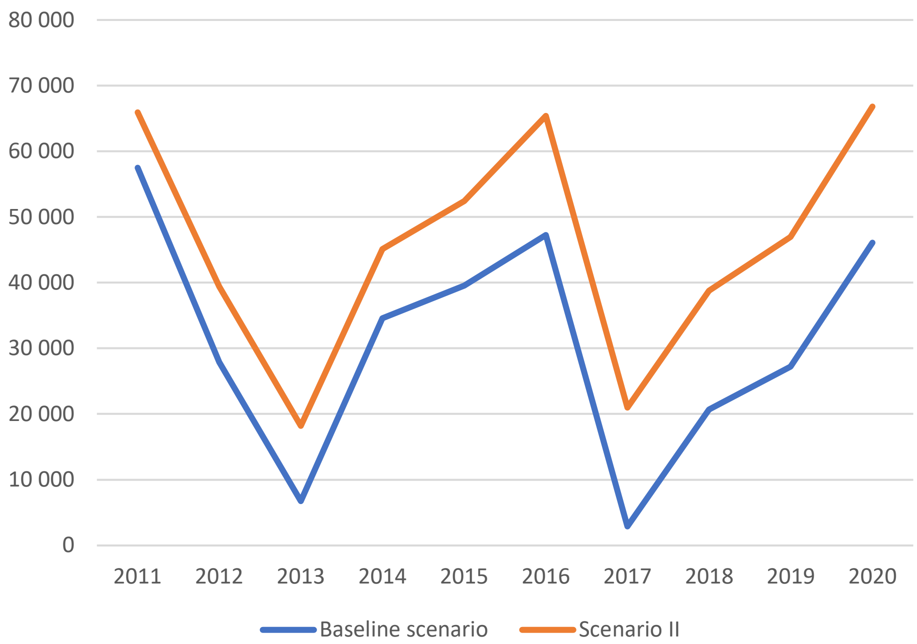
Chart 13. Uncovered loss according to modified principles (scenario II) against the actual previous years' loss (baseline scenario) in the years 2011 - 2020 (PLN million)



Source: own study based on information from NBP annual financial statements for 2011-2020.

c) the consequent significant increase in the NBP equity (see Chart 14),

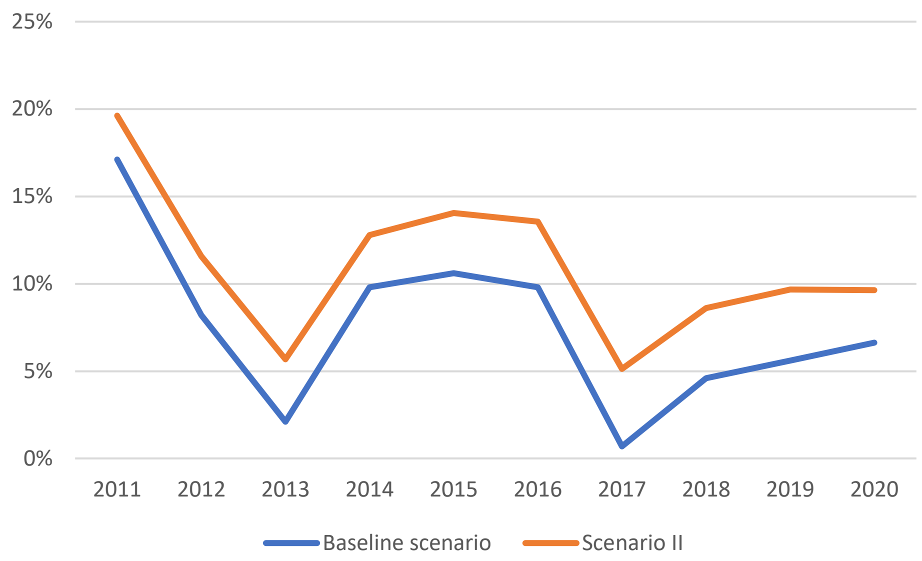
Chart 14. Equity of NBP according to modified principles (scenario II) against the actual equity (baseline scenario) in the years 2011 - 2020 (PLN million)



Source: own study based on information from NBP annual financial statements for 2011-2020.

d) maintaining the stable ratio of equity to the NBP balance sheet total (lower volatility in this ratio), and a particularly high level in 2020 (COVID-19 crisis), accompanied by a significant increase in the balance sheet total - meaning that the equity level would have changed pro-cyclically in relation to changes in the balance sheet total, i.e. the NBP equity level would have followed the same trend as changes in the balance sheet total (see Chart 15),

Chart 15. **Share of NBP equity in the balance sheet total according to modified principles (scenario II) against the actual share of NBP equity in the balance sheet total (baseline scenario) in the years 2011 - 2020 (PLN million)**



Source: own study based on information from NBP annual financial statements for 2011-2020.

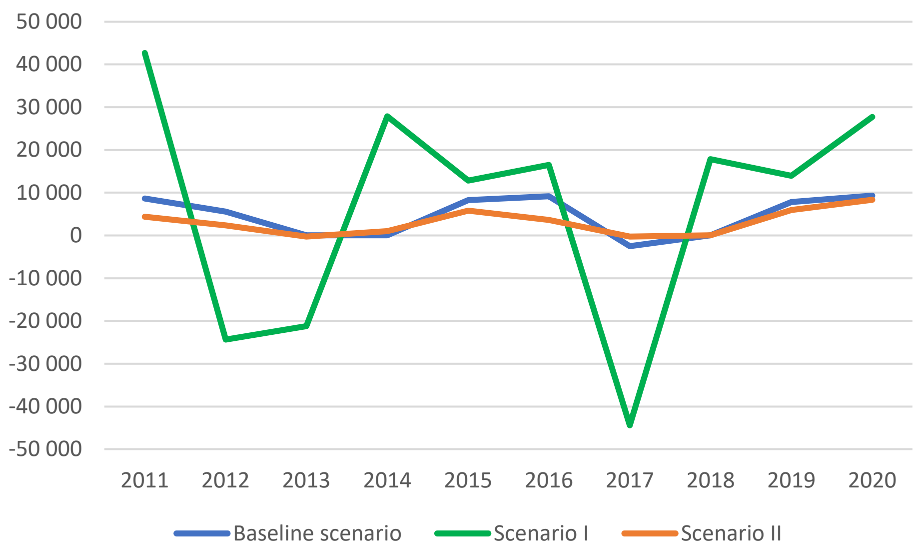
e) reduction in the volatility of equity from 54% to 36%, mainly as a result of various developments in the provision against the foreign exchange rate risk of the zloty according to modified principles.

Comparing the accounting principles laid down in the ECB accounting guideline (baseline scenario) with the modified accounting principles (scenario II), against the IFRS accounting principles (scenario I), it can be concluded that the departure from the principles laid down in the ECB accounting guideline (baseline scenario) and the adoption of the modified principles (scenario II) would:

1) contribute to a slight reduction of the volatility in the NBP financial result;
In the years 2011-2020, under scenario II (modified rules), the financial result would have ranged from PLN -0.3bn (2013) to PLN 8.4bn (2020), with an average financial result of PLN 3.0bn. Under the current principles (baseline scenario), the financial result ranged from PLN -2.5bn (2017) to PLN 9.3bn

(2020), with an average financial result of PLN 4.8bn. The highest range of volatility of the result would characterise the adoption of scenario I (IFRS principles of accounting), i.e. from PLN -44.4bn (2017) to PLN 42.7bn (2011) with an average result of PLN 6.9bn. The results of the comparative analysis of the level of the NBP financial result according to the adopted scenarios are presented in Chart 16;

Chart 16. Comparison of the financial result according to the IFRS (scenario I) and according to modified principles (scenario II) against the actual financial result (baseline scenario) in the years 2011 - 2020 (PLN million)



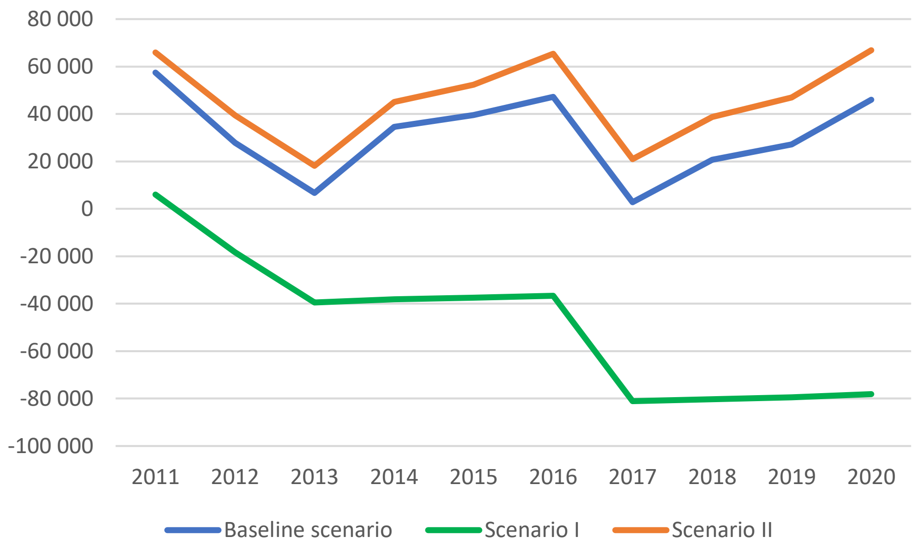
Source: own study based on information from NBP annual financial statements for 2011-2020.

2) result in an increase in the equity of NBP.

In the years 2011-2020, under scenario II the equity would have ranged from PLN 18.2bn (2013) to PLN 66.8bn (2020), with an average level of equity of PLN 44.6bn. In the baseline scenario equity ranged from PLN 6.7bn (2013) to PLN 57.5bn (2020), with its average level of PLN 30.3 bn. The highest range of volatility of the equity would characterise the adoption of scenario I, i.e. from PLN -80.8bn (2018) to only PLN 6.3bn (2011) with an average negative equity of PLN -48.5bn.

The average level of equity would be highest under scenario II. Both as a result of the application of scenario II and the baseline scenario NBP would not record negative equity. The worst capital situation for NBP would occur if scenario I were applied. The bank would then have recorded positive capital only once (2011) and recognised negative capital in each subsequent year. The results of the comparative analysis of the level of the NBP equity according to the adopted scenarios are presented in Chart 17.

Chart 17. Comparison of NBP equity according to the IFRS (scenario I) and according to modified principles (scenario II) against the actual equity (baseline scenario) in the years 2011 - 2020 (PLN million)



Source: own study based on information from NBP annual financial statements for 2011-2020.

The above considerations concerning the choice of accounting principles on which the NBP accounting information system could possibly be founded in the event of departure from the statutory obligation of full compliance of the NBP accounting principles with the ECB accounting guideline, i.e. the departure from the baseline scenario and adoption of scenario II, namely, the modified rules based on but not fully compliant with the ECB guideline (the so-called "ECB-based" rules), lead to the conclusion that the development and the application of new/modified accounting principles would result primarily in:

1) a higher level of the NBP equity (better capital position),
2) a lower average financial result in the period under review, with insignificant losses of PLN -271.5 million in 2013 and PLN -243.2 million in 2017 in relation to the current accounting principles, the application of which resulted in a loss of PLN -2,524.9 million in 2017,
3) the need to amend the Act on NBP mainly with regard to the waiver of the obligation related to the compliance of the NBP accounting principles with the ECB accounting guideline, as well as other NBP accounting provisions,
4) minor modifications to the IT system in which NBP's accounts are kept.

Conclusion

The analysis performed has shown that central banks generally apply the following accounting policies: IFRS-compliant standards, IFRS-based standards, national generally accepted accounting standards, bank’s own accounting principles and Eurosystem accounting principles. Any potential change in the NBP accounting rules depends on the outlook of Poland’s adoption of the euro single currency. If the time horizon is short, it would be counterproductive to change the NBP accounting rules, given the obligation to prepare financial reporting on the basis of uniform accounting principles that ensure a possibility of conducting a common monetary policy. A change of accounting principles could only be considered in areas where the Eurosystem standards leave freedom of choice (“recommended” rather than “mandatory” principles). Moreover, the adoption of the euro will have an impact on changing the structure of the NBP balance sheet. It will also result, among others, in a reduction of the bank's exposure to foreign exchange rate risk (less foreign currency positions, more domestic currency positions). If the perspective of adopting the euro becomes remote, NBP may consider changing its existing accounting principles conforming to the Eurosystem standards. Such a change should correlate with the need to build larger buffers to protect the central bank against financial risks and result in a reduction of volatility of the bank's financial result. The analysis performed has shown that, taking into consideration these expectations, the adequate accounting principles for NBP would be the modified Eurosystem standards rather than the IFRS. The modification would mainly involve non-recognition in the financial result of unrealised valuation losses on foreign currency, gold and securities. However, this would require amendments to the Act on NBP and waiving the obligation of full compliance of the NBP accounting principles with the ECB accounting guideline.

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