European Research Studies Journal
Volume XXVIII, Issue 4, 2025

pp. 575-594

Monetary Policy of the National Bank of Poland in the Context of Excess Liquidity in Credit (Depository*) Institutions in Poland, 2020-2024

Submitted 22/09/25, 1st revision 15/10/25, 2nd revision 28/10/25, accepted 20/11/25

Ryszard Michalski[1]

Abstract:

Purpose: *This paper looks into the ongoing excess liquidity in Poland's banking system between 2020 and 2024, investigating its causes, repercussions, and the role of monetary policy in influencing it.*
Design/Methodology/Approach: *The study uses official NBP data and statistical reports and employs the central bank's own methodology for measuring excess liquidity. It utilizes factor decomposition, reserve-ratio analysis, and year-on-year comparisons to assess the effectiveness of monetary policy tools.*
Findings: *The study demonstrates that monetary policy in this period was largely ineffective in containing excess liquidity. The tools used by the NBP absorbed liquidity only temporarily, while structural factors allowed the surplus to persist and grow.*
Practical Implications: *The results indicate that without significant changes to the structure of the NBP assets and a reassessment of reserve requirements, Poland's monetary authorities will continue to struggle to reAduce excess liquidity. This will continue to have immediate effects on controlling inflation as well as on monetary transmission.*
Originality/Value: *This paper provides a comprehensive account of excess liquidity in Poland's banking sector during an exceptional period marked by the pandemic and the energy crisis. It highlights the structural weaknesses of current monetary tools and offers insights into possible reforms.*

Keywords: *Monetary policy, banking sector's liquidity, monetary financial institutions, NBP's balance sheet, interest rate policy, excess liquidity, reserve requirements.*

JEL Classification: *E44, E51, F34, F36, G01, G28.*

Paper Type: *Research article.*

---

[1]*Akademia Finansów i Biznesu Vistula, Warsaw, Poland, ORCID 0000-0002-4806-3364, e-mail: r.michalski@vistula.edu.pl;*
**In Europe, banks are classified as credit institutions, whereas in the United States, they are referred to as depository institutions.*

1. Introduction

Between 2020 and 2024, Poland's banking system experienced a sharp rise in excess liquidity—funds held by banks over and above the mandatory reserve requirements set by the monetary authorities. This trend unfolded against the backdrop of two global shocks: the COVID-19 pandemic in 2020 and the energy crisis of 2022 triggered by Russia's invasion of Ukraine. Both events pushed inflation higher, and by 2023 the Polish economy had slipped into a quasi-recession, which in turn added to the country's political turbulence.

Throughout much of this period, Poland's policy mix leaned heavily toward interventionist measures. The government's crisis-management efforts, coupled with missteps in both fiscal and monetary policy, played a central role. The weaknesses of monetary policy were most evident in the so-called fight against inflation. Its inefficiency contributed to the buildup of excess liquidity in the banking system as well as a sustained increase in prices. The extent of this process was reflected in the growing balance of the central bank's open-market and deposit–credit operations.

Understanding why these instruments proved so limited in effect is therefore essential. This article explores the mechanisms that sustained excess liquidity in Poland's banking system and considers alternative tools that could provide a more effective response.

2. Literature Review

The excess liquidity of the banking sector is typically defined as the surplus of financial resources remaining in the sector above the required level of minimum reserves, calculated over the reserve-holding periods. *Excess liquidity*, as defined in this context, is measured by the balance of open market operations and deposit-lending operations conducted by the central bank.

The increase in the banking system's liquidity surplus in a country is driven by an increase in customer deposits, especially from firms and households, that outpaces the increase in loans granted to these customers, and this stems from constraints affecting the demand for credit from manufacturers, investors, and consumers. This is evident in both a declining ratio of loans granted by banks to deposits made in banks and the limited effectiveness of the central bank's monetary policy.

In periods of excess liquidity, commercial banks usually have enough funds to finance their operations independently of the prevailing monetary policy. At the same time, monetary authorities may be interested in having commercial banks keep reserves in the central bank's accounts that significantly exceed the required minimum in order to facilitate the financing of their (the authorities') own assets. This situation is particularly evident when the central bank holds foreign exchange reserves that exceed the amount of money in circulation.

It is important to note that the banking system's excess liquidity stems largely from the financial surpluses of numerous non-monetary entities; this situation typically results from an overly expansive policy mix, that is, a mix of fiscal and monetary policies that boost these entities' incomes excessively.

For years, Polish enterprises have financed themselves by drawing on internal funds and often have not required additional external financing. During the analyzed period of 2020 to 2024, commercial excess liquidity was further reinforced by supportive measures offered in pandemic- and energy-related aid programs. On the other hand, whenever Polish customers have seen their incomes grow significantly, they have added to their savings, which most frequently have been deposited in banks.

In Poland, the National Bank of Poland (NBP) uses the term *"banking sector liquidity."* Similarly, the European Central Bank (ECB) defines *liquidity* as "money held by commercial banks" (European Central Bank, 2023). A portion is stored as cash in bank vaults, but most of the money is held in accounts at the central bank. Liquid resources held by commercial banks at the central bank are called *central bank reserves*.

The Central Bank supplies banks with liquidity mainly through monetary policy operations. For the ECB, these are refinancing operations and asset purchases. Banks use liquidity to meet short-term obligations. Liquidity also enables banks to meet minimum reserve requirements set by the Central Bank.

The Central Bank provides liquidity to banks primarily through monetary policy operations. For the ECB, these operations include the refinancing and purchasing of assets. Banks use this liquidity to meet short-term obligations, such as processing customer payments and withdrawals and satisfying the reserve requirements set by the central bank (European Central Bank, 2023).

For central banks, supplying liquidity to commercial banks, after it has been carefully calibrated in terms of both volume and cost, is a crucial mechanism for shaping financial market conditions, particularly in the interbank market, and for transmitting monetary policy signals.

Ample liquidity and inexpensive liquidity typically influence banks' lending behavior, affecting the amount of credit extended and the terms offered. This fosters more favorable financial conditions, encouraging consumers and businesses to borrow. In turn, this stimulates consumption, investment, and production, ultimately stimulating the economy.

According to the ECB (2023), excess liquidity is "the money in the banking system that is left over after commercial banks have met specific requirements to hold minimum levels of reserves." Banks must hold minimum reserves to cover liabilities, primarily customer deposits. These funds are kept in a current account with the national central bank. The emerging excess liquidity can circulate through the banking system as banks conduct business with one another (European Central Bank, 2023).

In Europe, a significant increase in excess liquidity could be observed during the global financial crisis of 2008 and 2009. Before the crisis, the ECB assessed the eurozone banking system's overall liquidity needs and provided the necessary funds through regular refinancing operations. Banks that obtained these loans could use them to cover their short-term funding needs or to lend funds to other banks in what is called *interbank lending* (European Central Bank, 2023).

However, following the collapse of Lehman Brothers, trust between commercial banks declined sharply, and interbank lending virtually ceased. In these circumstances, the central bank became the primary reliable source of liquidity. To meet the needs of banks, the ECB implemented a fixed-rate, full-allotment approach, providing as much liquidity as the banks required in exchange for adequate collateral (European Central Bank, 2023).

Consequently, banks in the eurozone started withholding more liquidity than was necessary to fulfill their short-term obligations and reserve requirements, and this generated an ongoing surplus throughout the euro area banking system. Under conditions of anti-crisis monetary easing, excess liquidity in the euro area banking system increased further, particularly as the ECB found itself unable to lower interest rates any further. ECB's asset purchase programs and targeted longer-term refinancing operations (TLTROs) further reinforced this excess liquidity.

Since November 2022, the level of excess liquidity in the euro area banking system has been gradually declining, mainly owing to the progressive repayment of loans granted to banks under the TLTRO program. In addition, since March 2023, the Eurosystem/ECB has been reducing the share of securities previously purchased in its asset holdings.

The consequences of excess liquidity in the banking sector are diverse. Because of the high volume of client deposits, banks by and large offer very low interest rates on deposits. Moreover, when liquidity is excessive, banks adjust the interest paid on household and corporate deposits only slowly in response to increases in the central bank's policy rates, while they lower deposit rates much more rapidly when policy rates are cut. This accelerates the process of so-called financial disintermediation, namely, the withdrawal from traditional banking intermediation.

On the one hand, this creates more liquidity for non-financial entities; on the other, it encourages them to invest their savings directly in various financial instruments. For instance, instead of keeping surplus funds in bank accounts, non-financial entities may purchase securities directly, for instance, government bonds and bills, corporate bonds, or equities.

In turn, banks facing excess liquidity often raise the cost of credit. They are confronted with an alternative: either use the deposits they have collected to expand lending, an activity that inevitably involves operational effort and varying degrees of risk, or seek other profitable ways to allocate their funds. With relatively high central bank interest rates, which determine the returns on securities, especially debt instruments, banks readily identify alternative investment opportunities by purchasing, for instance, government securities or money market instruments, or by holding surplus funds in reserve accounts at the central bank.

The situation exacerbates financial disintermediation, as business borrowers, who want to avoid the high cost of bank loans, increasingly turn to the capital market rather than to banks. Moreover, they increase their use of non-traditional financing sources such as venture capital, fintech solutions, and crowdfunding. This trend is particularly pronounced in the United States, where corporate financing relies more heavily on the capital market than on banks.

When the central bank is confronted with widespread excess liquidity, it incurs an enormous amount of costs in order to control it and prevent a decline in the effectiveness of monetary policy through a diminished influence on economic activity.

An excess of free funds in the banking sector is typically indicated by a loan-to-deposit ratio that is less than 1. According to Statistics Poland (GUS, 2025a), by the end of 2024, the value of loans to the non-financial sector had increased by 4.1% compared with the end of 2023, reaching PLN 1,194.0 billion, while deposits of the non-financial sector rose by 7.8% to PLN 1,943.2 billion. The resulting loan-to-deposit ratio was calculated at 0.614.

3. Research Methods

This study employs the National Bank of Poland's established methodology for measuring excess liquidity in the banking sector. According to the NBP's definition, which is consistent with ECB practices, it is measured by the balance of open market and deposit-lending operations conducted by the central bank.

This analysis uses the NBP's method of calculating the average daily amount of funds available to the banking sector that exceed the required reserve level. It is a methodology that makes use of December-period comparisons between consecutive years to identify trends and measure the impact of specific policy interventions.

Also, this study employs NBP's factor decomposition approach, which is intended to isolate the contributions of various elements to changes in excess liquidity. As demonstrated in NBP's annual reports (NBP, 2021a; 2022; 2023; 2024a; 2025), this methodology separately evaluates the effects of the following:

- net foreign exchange purchases by the NBP on behalf of clients (primarily Ministry of Finance transactions),
- secondary market purchases of debt securities via structural open market operations,
- changes in required reserve rates and bases,
- cash circulation changes,
- short-term monetary policy operations.

Each factor's contribution is measured by comparing the average daily values between December periods that span consecutive years.

When it comes to the loan-to-deposit ratio, it is calculated as:

Loans and other receivables from domestic entities ÷ (Deposits and other liabilities of central government institutions + Deposits and other liabilities of other domestic entities)

This calculation follows the methodology established in the consolidated balance sheet of monetary financial institutions. As observed above, ratios below 1.0 indicate excess liquidity in the banking sector.

Using NBP's own assessment framework, the methodology examines the relationship between specific monetary policy changes and subsequent excess liquidity developments. This includes analyzing the effectiveness of the required reserve policy through before-and-after comparisons of reserve rate changes and the impact of asset purchase programs on banking sector liquidity. Last but not least, the relationship between interest rate policy and excess liquidity management is also examined.

The analysis incorporates NBP's own acknowledgment that "short-term monetary policy operations absorb nearly the entire amount of excess liquidity," using their reported figures for operations, including money market bills, repo transactions, and deposit facilities.

4. Results

4.1 The Scale and Causes of Excess Liquidity in Poland's Monetary Financial Institutions (MFIs[2]) in the Years 2020 to 2024

[2] *In Poland, monetary financial institutions (MFIs) comprise not only the broadly defined banking sector (the NBP, commercial banks, and credit unions), but also insurance*

The interest rate policy of the NBP in recent years has been widely regarded as highly problematic (Sławiński, 2023, pp. 116-118). In spring of 2020, following an extraordinary 5-year period of interest rate stability (Table 1), the monetary authorities launched an unexpected series of three rate cuts in response to the economic downturn triggered by the Covid-19 pandemic. As the post-recession recovery gathered pace and inflationary pressures mounted, a cycle of rate increases began in autumn 2021.

These hikes, however, were both modest in scale and belated in relation to the rapidly accelerating inflation (Table 2). The tightening cycle ended in September 2023 despite the persistently high rates of inflation at thetime.

A month later, a politically motivated rate cut of 25 basis points (i.e., 0.25%) was introduced, and was widely considered surprising, followed by a freeze lasting 18 months, even though from early 2024 interest rates had become positive in real terms.

Table 1. *Changes in selected NBP interest rates, March 2015 to July 2025*

Effective from	Reference rate	Lombard rate	Deposit rate	Interest on required reserve balances
2015.03.05	1.50	2.50	0.50	0.9 of reference rate
2018.01.01	unchanged	unchanged	unchanged	0.5
2020.03.18	1.00	1.50	0.50	unchanged
2020.04.09	0.50	1.00	0.00	unchanged
2020.05.29	0.10	0.50	0.00	0.10
2021.10.07	0.50	1.00	0.00	0.50
2021.11.04	1.25	1.75	0.75	1.25
2021.12.09	1.75	2.25	1.25	1.75
2022.01.05	2.25	2.75	1.75	2.25
2022.02.09	2.75	3.25	2.25	2.75
2022.03.09	3.50	4.00	3.00	3.50
2022.04.07	4.50	5.00	4.00	4.50
2022.05.06	5.25	5.75	4.75	5.25
2022.06.09	6.00	6.50	5.50	6.00
2022.07.08	6.50	7.00	6.00	6.50
2022.09.08	6.75	7.25	6.25	6.75
2023.09.07	6.00	6.50	5.50	6.00
2023.10.05	5.75	6.25	5.25	5.75
2025.05.08	5.25	5.75	4.75	5.30
2025.07.03	5.00	5.50	4.50	5.00

Source: *Own elaboration based on NBP data.*

companies and investment funds. Given their strong interconnections, it is essential to analyze them as a whole.

During the period under review, the pace of change in NBP interest rates diverged significantly from the dynamics of inflation, as measured by consumer price indices (Tables 1 and 2).

Table 2. *Consumer price indices, January 2020 to July 2025, year-on-year*

2020	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**
A	104.3	104.7	104.6	103.4	102.9	103.3	103.0	102.9	103.2	103.1	103.0	102.4
2021	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**
A	102.6	102.4	103.2	104.3	104.7	104.4	105.0	105.5	105.9	106.8	107.8	108.6
2022	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**
A	109.4	108.5	111.0	112.4	113.9	115.5	115.6	116.1	117.2	117.9	117.5	116.6
2023	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**
A	116.6	118.4	116.1	114.7	113.0	111.5	110.8	110.1	108.2	106.6	106.6	106.2
2024	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**
A	103.7	102.8	102.0	102.4	102.5	102.6	104.2	104.3	104.9	105.0	104.7	104.7
2025	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**
A	104.9	104.9	104.9	104.3	104.0	104.1	103.1					

Note: *A corresponding period of the previous year = 100*
Source: *Own elaboration based on GUS (2025a; 2025b).*

The main open-ended issue of Polish monetary policy over the past two decades has been the persistent excess liquidity in the banking system—or, more broadly, in monetary financial institutions (MFIs)—which has adversely influenced the effectiveness of instruments employed by the NBP. The scale of this excess liquidity has increased significantly in recent years (Table 3), primarily as a result of NBP actions—or, more accurately, the absence thereof.

Table 3. *Assets and liabilities of MFIs, 2020 to 2024 (after eliminating intercompany claims)*

End of period	Loans and other claims on domestic entities	Currency in circulation	Ratio of loans and other claims to currency in circulation	Total deposits and other liabilities[a]	Ratio of loans and other claims to deposits and other liabilities (in %)
Dec 19	1,312,159.8	224,072.7	5.86	1 427 267.8	91.94
Dec 20	1,321,333.4	306,809.4	4.31	1,654,548.8	79.86
Dec 21	1,388,122.3	340,406.5	4.08	1 806 753.6	76.83
Dec 22	1,411,246.6	353,707.5	3.99	1 915 570.1	63.43
Dec 23	1,411,151.0	362 608.6	3.89	2 092 853.4	67.43
Dec 24	1,484,573.9	399,102.2	3.72	2,304,551.2	64.42

Note: *Deposits and other liabilities to central government institutions + deposits and other liabilities to other domestic entities*
Source: *Own calculations based on NBP (2024b; 2024c)*

It is worth examining in greater detail the changes in excess liquidity in the Polish banking sector during the period under review and their underlying causes according to NBP data.

The banking sector experienced a significant increase in excess liquidity in 2020 (NBP, 2022, pp. 19-20), primarily due to the NBP's monetary policy. In December 2020, the level of funds available to the banking sector in excess of the required reserve averaged PLN 183.8 billion, which was an increase of PLN 97.4 billion compared with the same period in 2019.

The NBP's purchase of debt securities on the secondary market from March 2020 onward, conducted as part of structural open market operations, largely drove this rise in excess liquidity. This measure contributed PLN 111.9 billion to the increase in excess liquidity, as derived from comparing the average December 2020 balance with the December 2019 balance.

Furthermore, reducing the basic required reserve rate on April 30, 2020, increased funds available to the banking sector by an additional PLN 41.3 billion. The change in the required reserve level between the December 2020 reserve maintenance period and the corresponding period in 2019 was PLN 39.5 billion.

Foreign exchange operations conducted by the NBP, including the purchase of foreign currency from the Ministry of Finance, also contributed to the increase in excess liquidity in the banking sector in 2020. This effect was partially offset by the NBP's sale of foreign currency to meet the needs of the European Commission. The net result of NBP's foreign currency purchases exceeding sales led to an increase of PLN 26.9 billion in funds available to the banking sector in 2020, as measured by the average December 2020 balance relative to December 2019.

Conversely, a significant increase in the currency in circulation acted to reduce excess liquidity in 2020, particularly during the early stages of the pandemic. Over the course of 2020, the amount of cash in circulation rose by a record 36.9%. As a result, the funds available to the banking sector declined by PLN 81.8 billion, calculated in the same manner as shown in Table 3.

As a result of the increase in excess liquidity in the banking sector, the average balance of short-term monetary policy operations also rose in 2020. This category includes main open market operations (NBP money market bills), fine-tuning operations (NBP money market bills and repo operations), and NBP deposit and credit operations. By December 2020, the balance stood at PLN 155.8 billion, an increase of PLN 69.4 billion (80.44%) compared with December 2019. The corresponding average for 2020 amounted to PLN 137.8 billion, which was PLN 56.3 billion (69.06%) higher than in 2019.

Apart from investments in NBP money market bills (under main or fine-tuning open market operations), banks held the remaining funds above the required reserve on current and overnight accounts at the NBP. The evidence of the growing excess liquidity in the Polish banking system in 2020 was the larger scale of these surpluses compared with previous years. Another indication of persistent high liquidity was the limited use of the Lombard credit facility by banks.

2021

In 2021, excess liquidity in the Polish banking sector increased further (NBP, 2022, pp. 19-22). By December 2021, the level of funds available to the banking sector in excess of the required reserve averaged PLN 253.9 billion, representing an increase of PLN 70.1 billion over the same period in 2020.

The main drivers of this rise in 2021 were foreign exchange operations conducted by the NBP, particularly purchases of foreign currency, mainly from the Ministry of Finance. This increase was partially offset by the NBP's sale of foreign currency to the European Commission. The net effect of NBP foreign currency purchases exceeding sales raised the funds available to the banking sector by PLN 59.2 billion, calculated as the difference between the December 2021 and December 2020 averages.

In addition, the NBP's purchases of debt securities on the secondary market as part of structural open market operations contributed to a further increase of PLN 38.7 billion in funds available to the banking sector, calculated in the same manner.

To a much lesser extent than in 2020, the increase in currency in circulation acted to reduce excess liquidity in the banking sector in 2021. This factor lowered the funds available to banks by PLN 34.9 billion, calculated in the same manner as above. At the end of 2021, excess liquidity was also moderated by an increase in the basic required reserve ratio from 0.50% to 2.00%, effective from the December reserve maintenance period. The required reserve level in December 2021 was PLN 27.9 billion higher than in the corresponding period of 2020.

As a consequence of the rise in excess liquidity in 2021, the average balance of short-term monetary policy operations increased. The amount of funds deployed by the banking sector through the NBP's operations (net) reached PLN 248.9 billion in December 2021, an increase of PLN 93.1 billion (59.8%) compared with December 2020.

Evidence of persistently high excess liquidity in 2021 included not only the further rise in the average balance of short-term monetary policy operations but also the continued minimal use of the Lombard credit facility and the complete absence of recourse to bill credit by banks throughout the year.

2022

Unlike in previous years, 2022 saw a slight decline in excess liquidity in the banking sector compared with the previous year (NBP, 2023, p. 17). The average daily level of funds available to banks in excess of the required reserve amounted to PLN 236.6

billion in December 2022, down PLN 17.3 billion relative to the corresponding period in 2021.

The main factor behind this reduction in funds available to banks was an increase in the basic required reserve ratio from 2.00% to 3.50%, effective from the April reserve maintenance period. As a result, the required reserve level in December 2022 was PLN 30.3 billion higher than in December 2021.

Excess liquidity was further moderated by an increase in currency in circulation, particularly observed in the period immediately following Russia's military aggression against Ukraine at the turn of February and March 2022. This factor reduced the funds available to the banking sector by PLN 13.8 billion, calculated as the difference between the average daily balances in December 2022 and December 2021.

In 2022, the increase in excess liquidity in the banking sector was again primarily driven by foreign exchange operations conducted by the NBP, including purchases of foreign currency, mainly from the Ministry of Finance. This effect was partially offset by the NBP's sales of foreign currency, mainly to meet the needs of the European Commission. The net result of foreign currency purchases exceeding sales led to a moderate increase of PLN 28.8 billion in funds available to the banking sector in 2022, calculated in the same manner as above.

As a result of a decline in excess liquidity, the average daily balance of the short-term monetary policy operations described above stood at PLN 236.4 billion in December 2022, down PLN 12.5 billion compared with December 2021.

2023

In 2023, excess liquidity in the banking sector rose sharply relative to 2022 (NBP, 2024, p. 17). The average daily level of funds available to banks in excess of the required reserve reached PLN 301.2 billion in December 2023, an increase of PLN 64.6 billion over the same period in 2022. The main driver of this increase was net purchases of foreign currency by the NBP on behalf of its clients.

Purchases were primarily sourced from the Ministry of Finance, while sales were conducted mainly to meet the needs of the European Commission. Net foreign currency purchases in 2023 increased funds available to the banking sector by PLN 53.2 billion, based on the difference between average daily balances in December 2023 and December 2022.

This rise was partially offset by an increase in currency in circulation, which reduced funds available to the banking sector by PLN 6.5 billion. Consequently, the average daily balance of short-term monetary policy operations reached PLN 301.0 billion in December 2023, up PLN 64.6 billion relative to December 2022.

2024
In 2024, excess liquidity in the banking sector continued to increase (NBP, 2025, p. 14). The average daily level of funds available to banks in excess of the required reserve reached PLN 352.8 billion in December 2024, up PLN 51.6 billion compared with December 2023. The main driver remained the net purchases of foreign currency by the NBP, again primarily sourced from the Ministry of Finance and partially offset by sales for the European Commission. The net purchases of foreign currency increased funds available to the banking sector by PLN 74.1 billion.

At the same time, the increase in the currency in circulation reduced the funds available to banks by PLN 36.3 billion. The average daily balance of short-term monetary policy operations in December 2024 reached PLN 352.7 billion, an increase of PLN 51.7 billion relative to December 2023.

This overview reveals an important observation: over the period studied, the excess liquidity in the Polish banking sector, measured by funds available in excess of the required reserve,was increasingly deployed through the NBP's short-term monetary policy operations. This is illustrated in Table 4 and Table 5:

Table 4. *Average daily level of funds available to the banking sector in excess of required reserves in December (PLN billion):*

2020	2021	2022	2023	2024
183.8	253.9	236.6	301.2	352.8

Source: *Own study.*

Table 5. *Average daily balance of short-term monetary policy operations in December (PLN billion):**

2020	2021	2022	2023	2024
155.8	248.9	236.4	301.0	352.7

Source: *Own study.*
** Includes main open market operations (issuance of NBP money market bills), fine-tuning operations (money market bills and repo operations), and NBP deposit and credit operations.*

A fundamental question arises: Why does the strong upward trend in excess liquidity persist despite these developments? The answer is somewhat unexpected: Among the operations conducted by the NBP, those that increase bank liquidity tend to dominate rather than those that absorb it. Repo operations provide the clearest example. It is also significant that while money market bills temporarily reduce liquidity, over the longer term they increase it, as the redemption of discount on NBP bills ultimately contributes to higher liquidity in the banking sector.

5. Consolidated Findings

5.1 The Impact of NBP Monetary Policy on the Excess Liquidity of Polish Deposit Institutions, 2020 to 2024

Monetary policy in 2020 to 2023 was insufficiently effective in addressing various imbalances stemming from both domestic and external sources. It significantly supported the government by facilitating higher tax revenues and reducing public debt–servicing costs.

This raises the question of whether the monetary authorities were adequately fulfilling their constitutional mandate, as the złoty was losing purchasing power domestically and relative to foreign currencies. The situation changed in 2024, when the monetary policy became more restrictive and positive real central bank rates emerged.

For years, the main dilemma of Polish monetary policy has been the excess liquidity of the banking system, which negatively influences the effectiveness of monetary instruments. The NBP has struggled to manage it, reducing the impact of its monetary policy. The persistent increase in excess liquidity is largely due to the central bank's failure to put into place instruments that are effective enough to absorb it; not only are sophisticated tools needed, but so are simple and practical tools.

As a result, in recent quarters the NBP has advocated increasing the level of cash in circulation, a stance that is at odds with global trends in payment systems. When higher amounts of cash are in circulation, excess liquidity is reduced, but the level of cash in circulation depends mainly on the liquidity preferences of nonfinancial entities, which are shaped by real interest rates in the economy.

The reserve requirement is a particularly important instrument influencing banking system liquidity, specifically the level of coverage, rate, and interest on deposited funds. The basic reserve requirement rate applies to both złoty and foreign currency funds held in bank accounts, as well as funds obtained from the issuance of securities.

Since 1 March 2018, funds obtained from repo and sell-buy-back operations, as well as funds raised for at least 2 years, have been subject to a zero rate. The reserve requirement primarily absorbs a portion of the excess liquidity in the banking sector. It also contributes to the stabilization of short-term interest rates, as it operates through interbank transactions and open market operations.

Within the quantitative easing framework, on 17 March 2020, the Monetary Policy Council decided to reduce the basic reserve requirement rate from 3.5% to 0.5%, effective 30 April 2020, with the intention of increasing the lending capacity of banks.

Simultaneously, the interest rate on reserve funds was aligned with the NBP reference rate; it was lowered on 29 May 2020 from 0.5% to 0.1% (Table 1), and this slightly mitigated the generation of excess liquidity. In terms of system-wide liquidity, the situation worsened beginning in October 2021, when the Council started raising central bank rates. This was partially offset by an increase in the basic reserve requirement from 0.5% to 2.0% effective 30 November 2021, which was further raised to 3.5% on 31 March 2022.

In a 6 September 2021 interview, NBP President Adam Glapiński (NBP, 2021b) argued, controversially and contrary to common central banking practice, that:

"The main objective of the reserve requirement system is to influence the stabilization of short-term market interest rates (sic! RM). While the reserve requirement system is important for the implementation of monetary policy, it practically has no significance for its restrictiveness (sic! RM). Perhaps after the pandemic we will return to a higher reserve level, but the specific level will be discussed later. The appropriate reserve rate must take into account liquidity conditions in the banking sector while also supporting the effective stabilization of short-term rates at a level desired by the NBP. Regarding the interest rate on required reserves, both the literature and the practice of central banks in developed countries indicate that for the reserve requirement to function effectively as a stabilizer of short-term money market rates, it should be cost-neutral for banks—that is, it should bear interest at a market rate. This means that, in our context, the optimal interest rate on required reserves is the NBP reference rate (sic! RM), unless there are grounds to set it at a different level."

Based on this statement, it can be concluded that rapidly increasing excess liquidity alone is not a sufficient reason to keep the interest rate on required reserves at the lowest possible level. However, it is clear that paying interest on reserves and reducing the reserve requirement rate contribute to an increase in banking sector liquidity.

The largest driver of excess liquidity in 2020 and a much smaller driver in 2021 was the NBP's purchase of government bonds on the secondary market. In March 2020, in response to the outbreak of Covid-19, the NBP, in cooperation with the government, launched a Polish quantitative easing program, purchasing large volumes of government bonds on the secondary market. Starting in April 2020, the program was expanded to include debt securities guaranteed by the State Treasury, such as bonds issued by Bank Gospodarstwa Krajowego for the Counteraction Fund and by Polski Fundusz Rozwoju S.A.

The total nominal value of bonds purchased by the NBP in 2020 under structural open market operations was PLN 107.1 billion. From January to November 2021, the NBP purchased significantly fewer bonds, totaling 36.9 billion PLN nominally, 28.6 billion PLN in government bonds and 8.3 billion PLN in Treasury-guaranteed bonds, resulting in a total portfolio of 144.0 billion PLN at the end of 2021 (NBP, 2022, p. 23). This modified the NBP's asset structure, correcting the previous anomaly in which nearly all central bank assets were in foreign currencies while liabilities were dominated by zloty obligations.

It is hard to believe that the monetary authorities intended to further increase the already substantial liquidity of banks. The primary goal of the bond purchases was to finance the government's expansionary spending policy (Michalski, 2023a, p. 111). By boosting the liquidity of commercial banks, the central bank enabled them to continue buying debt securities and potentially expand lending.

However, it is important to remember that increased lending capacity does not automatically translate into a greater credit provision: the demand for bank loans depends on numerous factors that change over time. Simply putting more financial resources into the hands of banks is not enough to significantly expand their lending to the economy. When commercial banks lend to the government, businesses, and households, they credit their deposit accounts, thereby creating bank money—which, unlike bank reserves, can be used for payments, such as transfers or card transactions.

Until early 2022, Polish companies, despite holding substantial free balances in their accounts, showed little demand for new loans, even at the low interest rates offered by banks. In contrast, the household demand for credit behaved differently in an environment of low nominal and negative real interest rates. During the 2 years under review, there was a sharp increase in consumer lending, including a significant rise in mortgage loans.

On one hand, it fueled inflationary pressures[3]; on the other, it created a form of competition for banks' alternative investment choices—whether to extend loans to households or purchase government securities. (Banks would not have bought government bonds if doing so were less profitable, despite their much lower market risk.)

The Central Bank effectively dictated this choice by maintaining historically low interest rates and implementing a program to buy back government-issued or -guaranteed bonds. Bonds purchased on the primary market were then resold to the NBP, and the proceeds were reinvested in government securities. Free funds were

[3]*Rising inflation began in the second half of 2019 and continued into early 2020. After March 2021, it intensified further as a result of expansionary government spending and a loosening of monetary policy (Table 2).*

either held in overnight deposits at the central bank or invested in NBP money market bills.

The unconventional secondary-market purchases of government bonds by the NBP directly pushed up bond prices and lowered their yields. However, this effective reduction in bond yields came at the cost of artificially maintaining real negative central bank interest rates; this had an increasingly pronounced effect with all its negative implications for the broader economy, particularly inflation.

Yields began to rise gradually from early 2021, signaling the exhaustion of the extraordinary policy tools used to support the government's expansionary fiscal strategy. Worse, as inflation intensified and the central bank raised interest rates in the autumn, yields rose sharply while bond prices fell, a trend that continued strongly into 2022. This meant that the value of banks' bond portfolios declined significantly, generating losses, disrupting capital requirements due to negative revaluations, and, for weaker institutions, even causing liquidity strains (Michalski, 2023b, p. 300).

Between 2020 and 2024, the most significant, and in a sense structural, source of increasing liquidity in the Polish banking sector, despite notable fluctuations over time, was the net purchase of foreign currency by the NBP on behalf of clients.

These currency purchase transactions primarily involved funds from the Ministry of Finance, while sales were mainly conducted to meet the needs of the European Commission. The large scale of NBP foreign exchange operations reflected Poland's position as the largest beneficiary of EU funds. Beyond the significant positive net flow of official transfers, favorable balances in the trade account and the financial account also played an important role in these transactions.

6. Conclusions

6.1 Possibilities for Reducing the Excess Liquidity of the Polish Banking System

By definition, the most straightforward way to reduce excess liquidity in the banking sector is to raise the reserve requirement and lower the interest rate on reserve balances. The effectiveness of the former measure is evidenced by the NBP's experiences described above from 2020.

As for the interest rate on reserve balances, there are no rational arguments for equating it with the NBP's reference rate—a practice that, strangely, became the norm in NBP operations from the end of May 2020. A far more sensible solution would have been to set it at most at the deposit rate. To effectively reduce the excess liquidity at deposit institutions, it is therefore necessary to lower the interest rate on reserve balances as quickly as possible, while also raising the reserve ratio itself.

Undoubtedly, influencing the size of non-monetary deposits is far more challenging. Corporate deposits primarily depend on firms' willingness to invest, which is determined by many factors but chiefly by the quality of the policy mix and the stability of the business environment, particularly the legal framework.

In Poland, this has remained worryingly low for several years. Household bank deposits, on the other hand, depend not only on income, which has been growing rapidly in recent years, but also on the limited range of non-bank investment options. Of particular concern is the underdevelopment of retirement savings instruments, including pension funds.

A relatively straightforward way to reduce the scale of excess liquidity in the banking sector is to increase the volume of cash in circulation. The extent of cash circulation depends on the liquidity preferences of economic agents, that is, their inclination to use cash for transactions, which, unlike bank deposits, does not generate interest income.

In Poland, cash usage remains high, particularly among households, primarily owing to the still insufficient development of widely accepted non-cash payment methods and exceptionally low interest rates offered by Polish banks on customer deposits. As a result, during the analyzed 5-year period, the volume of cash in circulation increased by 78.1% (Table 3).

For years, the most difficult challenge for the Polish central bank in its efforts to reduce excess liquidity has been controlling the structural sources of liquidity growth, particularly the net foreign exchange purchases conducted by the NBP on behalf of clients. Central bank operations in this area have been exceptionally ineffective and, in many cases, even counterproductive. A major issue—in my view—has been the excessive scale of money market bills in the market.

What is striking is the significant share of repo operations and the complete absence of reverse repo agreements. This situation is largely due to the highly unfavorable structure of NBP assets, which are predominantly denominated in foreign currencies (Table 6). For reasons of security and the need for high liquidity, these instruments boast excellent ratings and therefore have low yields, which effectively prohibit their use in reverse repo operations with domestic entities.

After the NBP's purchases of government bonds on the secondary market in 2020, the proportion of domestic assets in total assets increased from 0.5% to 16.2% in a single year, marking the beginning of an effort to address the paradoxical situation where nearly all of the Polish central bank's balance sheet was made up of foreign assets.

In the following year, this share rose even further to 18.0%, but bond purchases began to decline despite the inclusion of state-guaranteed bonds, and the share of domestic assets in total assets subsequently fell. These levels of domestic assets allowed only a limited increase in the liquidity-absorbing operations of the NBP. There remains, therefore, a continued need for further modifications of NBP's asset structure[4].

Table 6. *Assets of the National Bank of Poland in 2020 to 2024 (in PLN million)*

Period	Domestic assets	Foreign assets	Assets in total	Ratio of Domestic to foreign assets (%)
Dec 19	2,562.8	506,320.2	508,882.9	0.5
Dec 20	115,757.7	596,891.5	712,649.2	19.4
Dec 21	152,270.9	692,440.0	844,711.0	22.0
Dec 22	143,382.0	752,860.1	896,242.1	19.0
Dec 23	141,624.1	779,893.6	921,517.8	18.2
Dec 24	132,209.8	932,477.4	1,064,687.2	14.2

Source: *Own elaboration based on NBP (2025).*

The most far-reaching—even revolutionary—way to restructure the NBP's assets would be to swap high-rated foreign government bonds, which are denominated in foreign currencies and held by the NBP as foreign assets, for Polish government bonds issued abroad.

These bonds would then count as domestic assets. Such a conversion—technically difficult but feasible—would finally introduce high-yield instruments into the Polish central bank's assets, namely Polish government bonds denominated in foreign currencies. These instruments would make it possible to launch large-scale reverse repo operations and even to sell them directly in order to effectively reduce excess liquidity in the banking sector.

The monetary policy of a country's central bank plays a crucial role in the nation's financial situation. Reductions in nominal interest rates are desirable not only in terms of limiting banks' excess liquidity. In the context of the long-standing structural overliquidity of the Polish banking system and the accompanying inflationary pressures, any significant loosening of the interest rate policy is difficult to expect. However, it should be remembered that the true extent of monetary easing or tightening is reflected in the level of real central bank rates and the behavior of

---

[4]*In recent quarters, the NBP has renewed efforts to modify the structure of its assets through substantial purchases of mFAonetary gold. A portion of these gold reserves can be sold on the market, thereby reducing the country's excess financial liquidity.*

the real exchange rate of the national currency (Rosati, 2017, p. 490). Therefore, for the transparency and effectiveness of NBP's actions, it is essential to maintain a prudent policy of positive real interest rates while keeping inflationary processes under control.

The above considerations show that solving the unresolved issues of excess liquidity in deposit-taking institutions' system requires, above all, a revaluation of the monetary policy toolkit by the monetary authorities.

6.2 Limitations

The analysis primarily relies on official NBP reports and GUS statistics. While these sources are authoritative, they represent the central bank's perspective on policy effectiveness. Thus, they may not capture all relevant market dynamics or the unintended consequences of monetary interventions.

Additionally, the analysis covers the exceptional period of the pandemic (2020 to 2024), which may not reflect typical monetary policy conditions and could limit the generalizability of the findings. Third, the research methodology follows the NBP's analytical framework for measuring excess liquidity, which may contain inherent biases or blind spots regarding policy effectiveness.

Conflicts of Interest: *The author declares no known competing financial interests or personal relationships that could influence the work reported in this paper.*

References:

European Central Bank. 2023. Co to jest nadpłynność? European Central Bank. https://www.ecb.europa.eu/ecb-and-you/explainers/tell-me-more/html/excess_liquidity.pl.html.

GUS. 2025a. Wyniki finansowe banków w 2024 r. Stat.gov.pl; Główny Urząd Statystyczny. https://stat.gov.pl/obszary-tematyczne/podmioty-gospodarcze-wyniki-finansowe/przedsiebiorstwa-finansowe/wyniki-finansowe-bankow-w-2024-r-,5,29.html.

GUS. 2025b. Wskaźniki makroekonomiczne. Stat.gov.pl. https://stat.gov.pl/wskazniki-makroekonomiczne/.

NBP. 2021a. Sprawozdanie z wykonania założeń polityki pieniężnej na rok 2020. Narodowy Bank Polski. https://nbp.pl/wp-content/uploads/2022/07/wykonanie2020.pdf.

NBP. 2021b. NBP nie dopuści do utrwalenia wysokiej inflacji - prezes NBP. Narodowy Bank Polski - Internetowy Serwis Informacyjny. https://nbp.pl/nbp-nie-dopusci-do-utrwalenia-wysokiej-inflacji-prezes-nbp/.

NBP. 2022. Sprawozdanie z wykonania założeń polityki pieniężnej na rok 2021. https://nbp.pl/wp-content/uploads/2022/07/wykonanie2021.pdf.

NBP. 2023. Sprawozdanie z wykonania założeń polityki pieniężnej na rok 2022. https://nbp.pl/wp-content/uploads/2023/05/Sprawozdanie-z-wykonania-zalozen-polityki-pienieznej-na-rok-2022.pdf.

NBP. 2024a. Sprawozdanie z wykonania założeń polityki pieniężnej na rok 2023. Nbp.pl; Narodowy Bank Polski. https://nbp.pl/wp-content/uploads/2024/05/Sprawozdanie-z-wykonania-ZPP-PL-2023-WWW.pdf.

NBP. 2024b. Bilans Narodowego Banku Polskiego (ujęcie monetarne). Narodowy Bank Polski - Internetowy Serwis Informacyjny. https://nbp.pl/statystyka-i-sprawozdawczosc/statystyka-monetarna-i-finansowa/bilans-narodowego-banku-polskiego-ujecie-monetarne/.

NBP. 2024c. Bilans skonsolidowany monetarnych instytucji finansowych. Narodowy Bank Polski - Internetowy Serwis Informacyjny. https://nbp.pl/statystyka-i-sprawozdawczosc/statystyka-monetarna-i-finansowa/bilans-skonsolidowany-monetarnych-instytucji-finansowych/.

NBP. 2025. Sprawozdanie z wykonania założeń polityki pieniężnej na rok 2024. https://nbp.pl/wp-content/uploads/2025/05/Sprawozdanie-z-wykonania-Zalozen-Polityki-Pienieznej-na-rok-2024.pdf.

Michalski, R. 2022a. Polska polityka pieniężna w latach 2020-2021 – niezborne zmiany. Społeczeństwo I Polityka, 4(73), 107-126. https://doi.org/10.34765/sp.0422.a06.

Michalski, R. 2022b. Polityka pieniężna Polski w latach 2022-2023 – osiąganie płaskowyżu inflacyjnego czy wyższych poziomów cen? Społeczeństwo I Polityka, 4(77), 291-312. https://doi.org/10.34765/sp.0423.a14.

Rosati, D.K. 2017. Polityka gospodarcza. Wybrane zagadnienia. Warszawa: Oficyna Wydawnicza SGH.

Sławiński, A. 2023. Bankowość centralna. Ewolucja i przyszłość. Warszawa: CeDeWu.