



NARODOWY  
BANK POLSKI

---

# Report on Cash Circulation in Poland in 2023





---

# Report on Cash Circulation in Poland in 2023

Warsaw 2024

Drafted by the team led by:  
Barbara Jaroszek, Director, Cash and Issue Department  
Joanna Kołodziej, Deputy Director, Cash and Issue Department

Authors:  
Mirosława Braja-Brzykcy  
Juliusz Dobrołęcki  
Małgorzata Kapelińska  
Anna Kondraciuk  
Joanna Kołodziej  
Monika Kowalewska  
Grzegorz Kozioł  
Grzegorz Materniak  
Jarosław Toczko  
Alicja Zalewska

Published by:  
Narodowy Bank Polski  
00-919 Warszawa  
ul. Świętokrzyska 11/21 tel.: +48 22 185 10 00  
nbp.pl

© Copyright Narodowy Bank Polski, 2024

1. Summary	5
2. Banknotes and coins in circulation	11
2.1. Value and number of banknotes and coins in circulation	14
2.2. Frequency rate of return of banknotes and coins	18
3. Cash and cashless means of payment	21
3.1. Trends observed in Poland	22
Box A. Trends in the scope of counterfeiting of the Polish currency	29
3.2. Trends in selected countries	30
3.2.1. Cash circulation	31
3.2.2. Payment habits and precautionary role of cash	33
3.2.3. Access to cash	36
3.2.4. The future of cash	37
3.3. Overview of regulatory activities in the area of cash acceptance and availability in selected countries	39
4. Characteristics of cash circulation in Poland	45
4.1. Cash circulation and its participants	46
4.2. Legal framework of cash circulation	47
4.3. Obligation to accept cash payments	48
4.4. Amendments to cash circulation regulations in 2023	48
4.4.1. Cash payments	49
4.4.2. Protection of monetary values	49
4.4.3. Replacement of banknotes and coins	49
Box B. Examples of banknotes damaged by the banknote neutralisation system	50
4.4.4. Counting, sorting of banknotes and coins	51
4.5. Reporting in the scope of cash circulation	52
4.5.1. Legal framework	52
4.5.2. Statistical data	53
4.6. Cash Circulation Council	56
4.6.1. National Strategy for Cash Circulation Security	56
Box C. Summary of the results of the 2023 cash availability survey	59
5. Cooperation with banks in the scope of Polish currency supply	65
5.1. Polish currency supply in 2023	66
Box D. Tendencies in supplying Polish currency to banks in 2018–2023	69
5.2. Withdrawing Polish currency from NBP by banks	71
5.2.1. Banknotes	71
5.2.2. Coins	73
5.3. Lodging Polish currency in NBP by banks	74
5.3.1. Banknotes	75
5.3.2. Coins	76
Box E. Self-service coin exchange	78
6. Glossary of terms	81

# Table of Contents



Chapter 1

---

# Summary

## Summary

Cash circulation in Poland is developed by many of its participants comprising, besides the central bank and banks<sup>1</sup>, also manufacturers of banknotes and coins, CIT companies processing cash on behalf of banks, ATM deployers, retailers and consumers. Narodowy Bank Polski (hereinafter NBP) – the exclusive issuer of banknotes and coins of the Polish currency – is responsible for the management of banknotes and coins of the Republic of Poland. Within these activities, the central bank ensures the adequate quantity and quality of banknotes and coins in circulation and liquidity of cash settlements, putting banknotes and coins in the full denomination structure in circulation. NBP's activity in the scope of cash cycle comprises the following: orders for the production of banknotes and coins placed at manufacturers and storage and supplying banks with banknotes and coins. In 2023, NBP continued its work on further streamlining the processes of supplying Polish currency and the process of replacing worn or damaged banknotes and coins, in particular banknotes damaged by intelligent banknote neutralisation systems (IBNS). The supply of Polish currency to banks and Poczta Polska S.A. (Polish Post Office) proceeded correctly and without disruptions. Banks and Poczta Polska S.A. collected banknotes and coins in the full denomination structure in all NBP Regional Branches.

NBP cooperates with participants of the cash circulation market and regulators in the framework of the Cash Circulation Council (hereinafter referred to as the Council), a consultative and advisory body to the Management Board of NBP. The Council provides a platform for the exchange of information and cooperation between cash market participants, not only in the regulatory and operational area, but also in the implementation of the actions set out in the National Strategy for Cash Circulation Security (hereinafter the Strategy), developed with the involvement of the Council and adopted by the NBP Management Board in November 2021.

In 2023, as part of the implementation of the Strategy, a number of activities were undertaken, grouped under four pillars: universal acceptance and availability of cash, smooth supply of the market with Polish currency, physical security of banknotes and coins and cyber-security of IT systems used in the cash supply process. In terms of cash accessibility, the next edition of the NBP survey showed that cash accessibility in Poland in geographical terms remains high: 98.4% of the population has access to an ATM, a branch with a bank cash desk service or a Post Office within a distance of 10 km.<sup>2</sup> At the same time, the public opinion survey on cash in circulation, commissioned by NBP, confirms that 91% of respondents have a positive opinion on access to cash via ATMs. The results of the aforementioned survey also indicate that, compared to the previous year, public awareness of the existence of the statutory obligation for universal cash acceptance in Poland improved significantly in 2023. Moreover, the results of the survey indicate that respondents are emotionally attached to Polish banknotes and most perceive the Polish banknote as a national symbol (55.8% of respondents). The results of public opinion surveys commissioned by NBP are used in analyses and work optimising cash circulation processes. Analyses performed by NBP confirm that the level of counterfeiting

---

<sup>1</sup> For the needs of this Report, the term “banks” also comprises entities other than banks with statutory authority to withdraw and lodge Polish currency from/in NBP.

<sup>2</sup> In the National Strategy for Cash Circulation Security, the cash availability criterion was defined as ensuring that 90% of the population in Poland has access to a bank branch with a cash desk service or an ATM within a distance no longer than 10 km.

remains low, while the quality of the highest denominations of banknotes in circulation was assessed as very good by respondents to the aforementioned survey.

A gradual decline of the of cash in transactions has been observed for years in many countries, including Poland. The reduced role of cash in payments is associated with changes in the infrastructure used for supplying cash to customers and depositing it, as well as its acceptance in payment settlements. The issue of public availability of cash or its acceptance in payments has been recognised and analysed in many countries for a long time and has been increasingly translating into either the introduction of regulations, e.g. in Hungary or Sweden, or drafting of such regulations – e.g. in the euro area or the United States of America, or other initiatives undertaken in cooperation with cash market participants, e.g. cash agreements in the Netherlands and Belgium.

However, cash still remains an important part of the payment landscape in many countries, including Poland, and is gaining more and more importance as a means of precautionary store of value. Cash ensures direct and immediate settlement of liabilities, while the use of cash by consumers in payment transactions does not require a sophisticated IT infrastructure.

In accordance with the results of the aforementioned public opinion survey conducted in Poland in 2023, approximately 31% of respondents indicated that they use only cash or use cash more often than cashless payments. At the same time, about 69% of respondents in Poland have cash set aside just in case. Although for years the share of cash in payments has been falling, it remains an important means of payment and the most important alternative to payment cards, and also acts as a means to store value: among others, 37% of Swiss and two-thirds of Swedes store cash for precautionary purposes. Societies in various countries continue to recognise the need to use cash in the future, regardless of their wealth.

The year 2023 was a period when demand for cash, contrary to the previous year, was relatively stable in the major part of the world. Minor annual declines in the value of cash in circulation occurred, for example, in the euro area (-0.3%), Norway (-0.9%) and the United Kingdom (-0.5%). In the United States – following significant increases over recent years – the rate of cash circulation growth slowed down, while in Romania, the circulation growth rate recovered to levels recorded before the COVID-19 pandemic (approx. 9% growth).

In cash circulation in Poland, following years of dynamic changes associated with the COVID-19 pandemic and the Russian aggression against Ukraine, the year 2023 demonstrated a stable level of Polish currency withdrawals from NBP and its lodgements in NBP, appropriate for seasonal changes in cash circulation. Banks' demand for Polish currency was fulfilled efficiently and in the full denomination structure. The level of withdrawals (PLN 190.6 billion) was close to the level of lodgements (PLN 181.7 billion) and as a consequence, 2023 saw the lowest annual increase in the value of money in circulation – both in percentage terms (2.4%) and in value terms (PLN 8.9 billion) – compared to previous years. In 2023, on average, banks withdrew PLN 760 million and lodged PLN 724 million per day, i.e. 5.8% and 4.0% less, respectively, than in 2022. Nevertheless, it can be observed that since 2022, the number of banknotes withdrawn and lodged in a given year has remained at a similar level, while the increase in the value of circulation results mainly from increased collection of higher denomination banknotes, which affects the denomination structure of circulation. At the end of 2023, for the first time, the 200 zł denomination reached the highest share (45.7%) in the value structure of banknote circulation, while at the end of 2022, the 100 zł denomination still

dominated the value structure of banknote circulation with a share of 43.4%. The increase in the share of 200 zł banknotes in the value of circulation results from their significant increase in withdrawals from NBP since the outbreak of the COVID-19 pandemic. In 2023, the 200 zł denomination accounted for 44.1% of the value of all banknotes withdrawn from NBP, while the 100 zł denomination accounted for 41.9% of the value of banknotes withdrawn from NBP. Since 2020, an increase in withdrawals of 500 zł banknotes from NBP has also been observed. On the other hand, the value of banknotes lodged with NBP is still dominated by 100 zł banknotes (with a share of 48.7% in 2023), but their share is gradually decreasing (from 61.6% still in 2019). At the same time, a significant growth is recorded in the share of the 200 zł denomination in the value of banknotes lodged in NBP (from 24.8% in 2019 to 38.8% in 2023). Changes in the structure of withdrawals and lodgements of banknotes indicate the growing precautionary role of cash. The trend of declining frequency of banknotes returning to NBP continues, with 605 days in 2023, which means that their return time has almost tripled over the last 10 years. Coins are returned to NBP even less frequently – statistically every 66 years, but in the case of the three lowest coin denominations, which account for approximately 66% of the number of all coins in circulation and almost 49% of the number of coins withdrawn from NBP, the theoretical return time to NBP ranges from 156 years for 5 gr to 219 years for 1 gr.

The developments in the value of cash in circulation in Poland resulting from fundamental factors (e.g. exchange rate, GDP, inflation, interest rates) or seasonal factors (i.e. public holidays, holidays, the beginning of the school year, etc.) previously identified, were also noticeable in 2023. The macroeconomic indicators show that:

- in 2023, the value of circulation in relation to GDP amounted to 11.1% and was lower than in 2022 (12.0%); nevertheless, the level of this relation was still higher than in 2016–2019, when it stood at a level of approx. 10%; following the outbreak of the COVID-19 pandemic, the growth of this ratio was related to the scale of the increase in the value of cash in circulation that occurred in 2020 (34.8%),
- the share of cash<sup>3</sup> in M1 in 2023 amounted to 21.5% and was lower than the share in 2022 (22.3%).

This Report concerns cash circulation related to banknotes and coins of the Polish currency with the transaction (circulation) function and store of value as their major economic function. The data regarding the cash circulation value presented in the Report do not include collector coins and banknotes, which fulfil a payment function and have the status of legal tender, but are not treated as a universal means of exchange in transactions.

The key statistical data regarding the cash circulation market in 2022 and 2023 are presented in Table 1, while the key terms included in this Report are explained in the Glossary. For analytical purposes, the data presented in the Report have been rounded.<sup>4</sup>

---

<sup>3</sup> Excluding cash at cash desks of Monetary Financial Institutions (MFI).

<sup>4</sup> As a result of rounding, the data may not add up. Calculations of changes and shares have been made on the basis of full figures (unrounded).

**Table 1.** Key data for 2022 and 2023

	2022	2023	Change (2023 / 2022)
Value of circulation (end of the year)	PLN 368.3 bn	PLN 377.2 bn	increase of PLN 8.9 bn (+2.4%)
Number of banknotes in circulation	3.0 bn pcs	3.0 bn pcs	increase of PLN 0.007 bn (+0.2%)
Number of coins in circulation	21.9 bn pcs	22.7 bn pcs	increase of PLN 0.8 bn (+3.7%)
Value of Polish currency withdrawals from NBP	PLN 203.1 bn	PLN 190.6 bn	decrease of PLN 12.5 bn (-6.1%)
Number of banknotes withdrawn from NBP	1.9 bn pcs	1.8 bn pcs	decrease of 0.1 bn pcs (-4.1%)
Number of coins withdrawn from NBP	1.35 bn pcs	1.40 bn pcs	increase of 0.05 bn pcs (+4.0%)
Value of Polish currency lodged in NBP	PLN 190.0 bn	PLN 181.7 bn	decrease of PLN 8.3 bn (-4.4%)
Number of banknotes lodged in NBP	1.9 bn pcs	1.8 bn pcs	decrease of 0.09 bn pcs (-4.7%)
Number of coins lodged in NBP	0.28 bn pcs	0.34 bn pcs	increase of PLN 0.06 bn (+21.0%)
Banknotes – frequency rate of return	in cycles: 0.61 in days: 602	in cycles: 0.60 in days: 605	decrease in cycles: 0.004 increase in days: 3
Coin – frequency rate of return	in cycles: 0.013 in days: 28,244	in cycles: 0.015 in days: 24,228	increase in cycles: 0.002 decrease in days: 4,016
GDP <sup>5</sup>	PLN 3,074.8 bn	PLN 3,410.1 bn	increase by PLN 335.3 bn (+10.9%) <sup>6</sup>
Value of circulation / GDP	12.0%	11.1%	decrease of 0.9 pp.
Value of M1 aggregate	PLN 1,584.9 bn	PLN 1,685.3 bn	increase of PLN 100.4 bn (+6.3%)
Value of circulation/ M1 aggregate <sup>7</sup>	22.3%	21.5%	decrease of 0.8 pp

<sup>5</sup> Nominal gross domestic product (current prices) according to GUS data for 2022 and 2023 (“Statistical Bulletin” no. 03/2024, publication date 24 April 2024).

<sup>6</sup> GDP growth in nominal terms; according to GUS data of 24 April 2024, in 2023, GDP increased by 0.2% in real terms and in 2022 by 5.6%.

<sup>7</sup> The value of circulation less cash at cash desks of Monetary Financial Institutions (MFIs) was applied in the calculations, since cash at cash desks of the MFIs is not included the M1 aggregate.



## Chapter 2

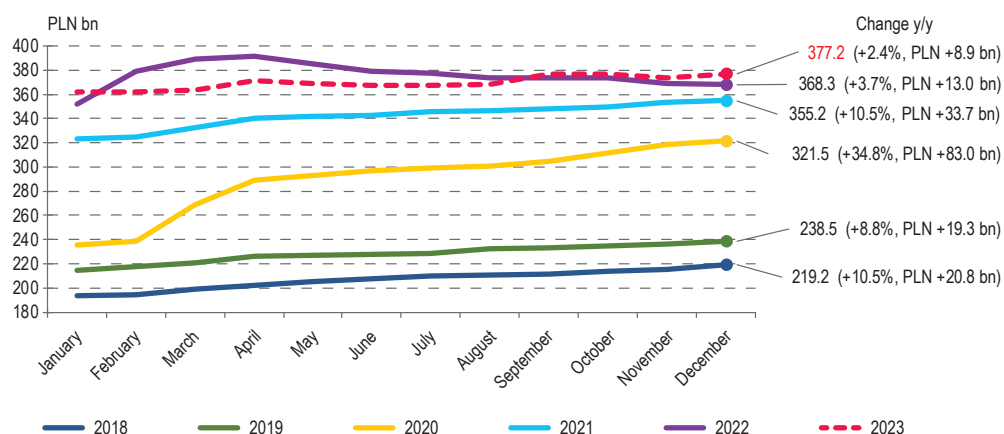
---

# Banknotes and coins in circulation

## Banknotes and coins in circulation

The value of cash in circulation as at 31 December 2023 amounted to PLN 377.2 billion. An increase in the value of cash in circulation of 2.4%, i.e. PLN 8.9 billion, was recorded as compared to the end of the previous year. In relation to previous years, 2023 saw the lowest increase in the value of circulation, both in terms of percentage and volume. It should be highlighted that, relative to 31 December 2019, i.e. the end of the year preceding the period of significant growth in demand for cash, the value of circulation over the past four years has increased by 58.2%, i.e. PLN 138.7 billion (Figure 2.1).

**Figure 2.1.** Value of cash in circulation from January 2018 to December 2023



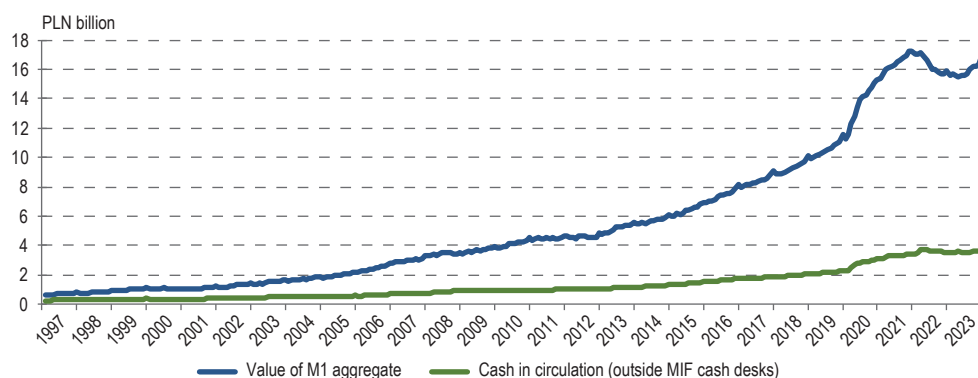
Source: study of the NBP Cash and Issue Department.

In Poland, in the years 1997–2023<sup>8</sup>, both an increase in the value of the M1 aggregate and a rise in the value of cash in circulation it contains was observed (Figure 2.2).

The share of cash in the M1 aggregate was gradually decreasing over the period of 1997–2019 – from the level of approx. 36–38% (January–April 1997) to the historically lowest level of approx. 19.4% in December 2019 (Figure 2.3).

<sup>8</sup> From January 1997 to December 2023.

**Figure 2.2.** Value of M1 aggregate and value of cash in circulation (excluding cash desks in MFIs) in monthly terms in 1997–2023



Source: study of the NBP Cash and Issue Department.

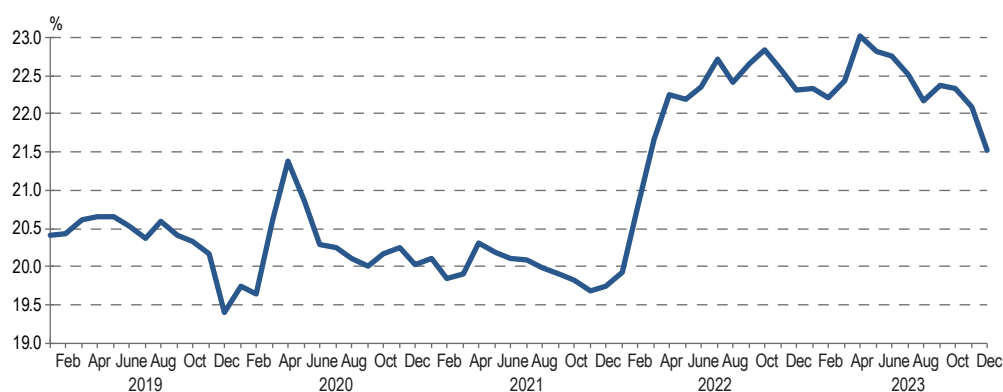
**Figure 2.3.** Share of cash in circulation (excluding cash desks in MFIs) in the value of the M1 aggregate in monthly terms in 1997–2023



Source: study of the NBP Cash and Issue Department.

In the periods of increased demand for cash, the share of cash in the M1 aggregate was increasing. This was the case with the onset of the COVID-19 pandemic in March 2020, when the share of cash in the M1 aggregate increased from 19.4% (December 2019) to 21.4% (April 2020). Furthermore, as a consequence of the full-scale armed aggression of the Russian Federation against Ukraine, the share of cash in the M1 aggregate increased from approx. 20% in December 2021 to 22% in the consecutive months, starting from March 2022. Since the end of April 2023, when the aforementioned share reached its highest value over the recent period, i.e. 23.0%, a steady decline in this value was observed, to 21.5% at the end of 2023 (Figure 2.4).

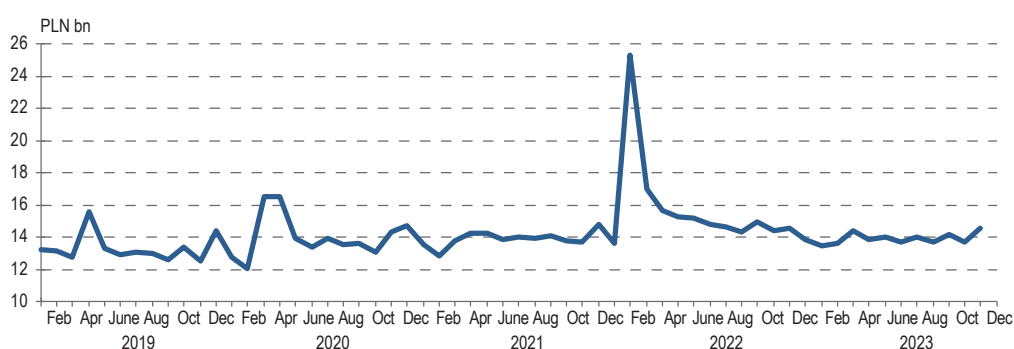
**Figure 2.4.** Share of cash in circulation (excluding cash desks in MFIs) in the value of the M1 aggregate in 2019–2023



Source: study of the NBP Cash and Issue Department.

The analysis of the change in the level of cash in cash desks of MFIs (monetary financial institutions) shows that in emergency situations, the monetary financial institutions, including banks, take precautionary measures, i.e. accumulate reserves of Polish currency. Such a situation was clearly noticeable in February and March 2022. Since January 2023, the aforementioned value has stood at approximately PLN 14 billion, with no significant monthly changes (Figure 2.5).

**Figure 2.5.** Value of cash in cash desks of MFIs in the years 2019–2023



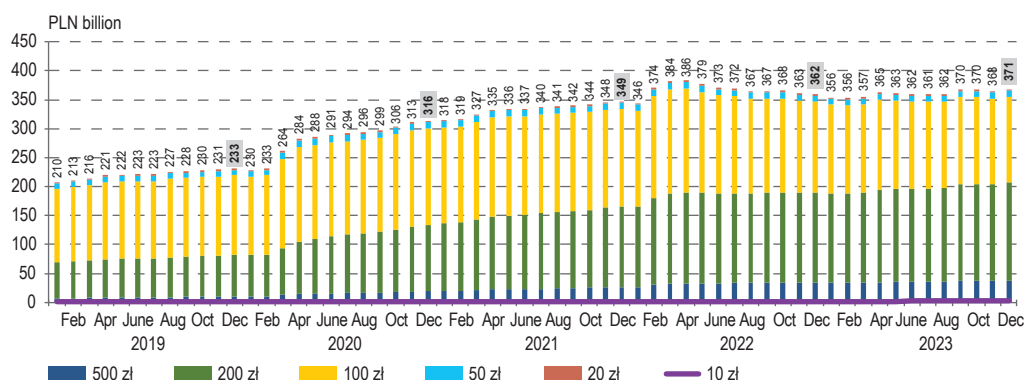
Source: study of the NBP Cash and Issue Department.

## 2.1. Value and volume of banknotes and coins in circulation

At the end of 2023, the value of banknotes represented 98.3% of the value of cash circulation and was similar to the share at the end of 2021 and 2022 (98.4%). Throughout 2023, the value of banknotes in circulation increased by over PLN 8.6 billion, i.e. by 2.4%. Compared to the state as at the end of 2022, an increase in the value of banknotes in circulation was noted for

the following denominations: 500 zł, 200 zł, 50 zł, 20 zł and 10 zł (respectively by: 10.6%, 8.6%, 1.9%, 4.5% and 4.9%), whereas a decline of 5.6% was recorded in the case of the banknotes with the face value of 100 zł (Figure 2.6).

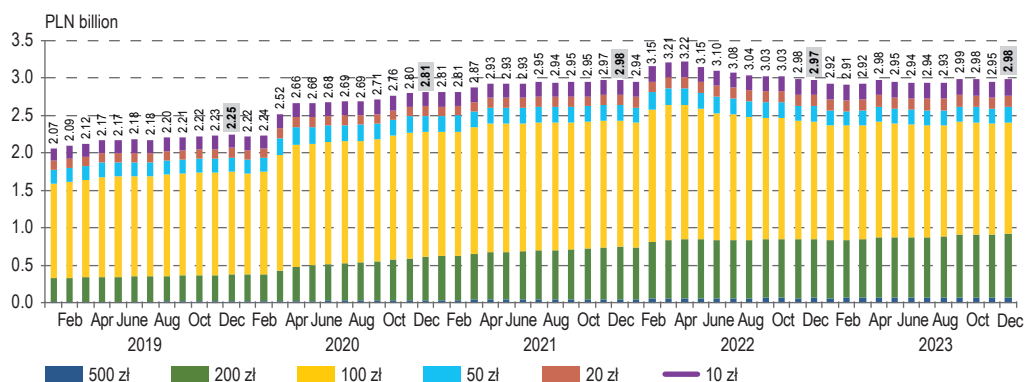
**Figure 2.6.** Value of banknotes in circulation by denomination (in PLN) in 2019–2023



Source: study of NBP Cash and Issue Department.

Throughout 2023, the number of banknotes in circulation increased by 6.8 million pcs, i.e. by 0.2%. The changes in the denomination structure in terms of volume corresponded to the changes in terms of value (Figure 2.7).

**Figure 2.7.** Volume of banknotes in circulation by denomination (in pcs) in 2019–2023

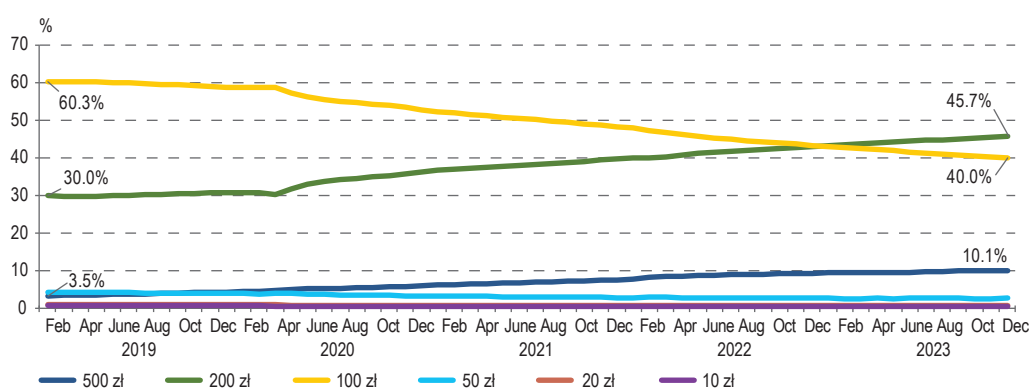


Source: study of the NBP Cash and Issue Department.

In the structure of banknotes in circulation by value, the share of 500 zł and 200 zł denominations increased throughout the year by 0.8 percentage points and 2.6 percentage points, respectively. The share of the 100 zł denomination decreased by 3.4 percentage points over the year. In the case of banknotes with the face value of 50 zł, 20 zł and 10 zł, there was no change in the share of circulation, despite an increase in the value in circulation of these

banknotes. In terms of the value structure of circulation, the role of the 200 zł denomination increased (a growth from 43.1% to 45.7%). This denomination took over the previous prevailing role of the 100 zł denomination, whose share fell from 43.4% to 40.0% over the year. In the longer term, a successive increase in the share of the 500 zł denomination in circulation is noticeable, amounting to 10.1% at the end of 2023 (Figure 2.8).

**Figure 2.8.** Denomination structure of banknotes in circulation by value in 2019–2023

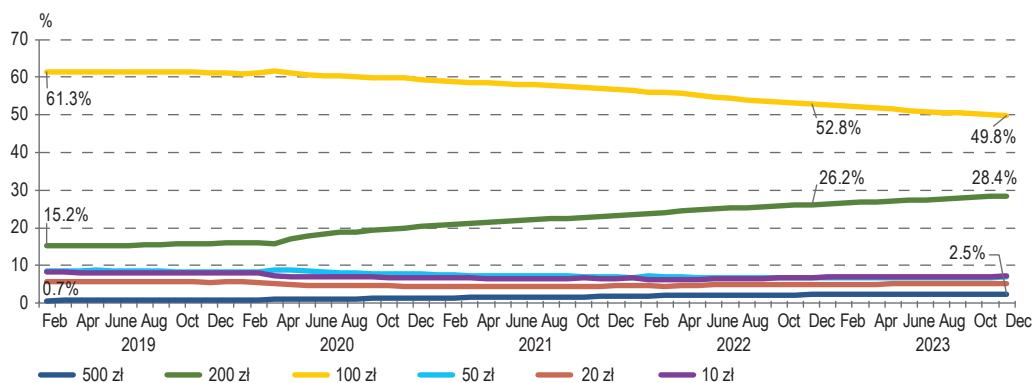


Source: study of the NBP Cash and Issue Department.

In the denomination structure of banknotes by volume, an increase in the share was recorded for the following denominations: 500 zł (by 0.2 percentage points), 200 zł (by 2.2 percentage points), 50 zł (by 0.1 percentage points), 20 zł (by 0.2 percentage points) and 10 zł (by 0.3 percentage points). At the same time, a decrease in the share of the 100 zł denomination was recorded (by 3.1 percentage points).

The share of the 200 zł denomination in circulation in volume terms is increasing steadily (a rise from 26.2% to 28.4%). However, despite the decline from 52.8% to 49.8%, the 100 zł denomination still has a dominant share in the volume of banknotes in circulation (Figure 2.9).

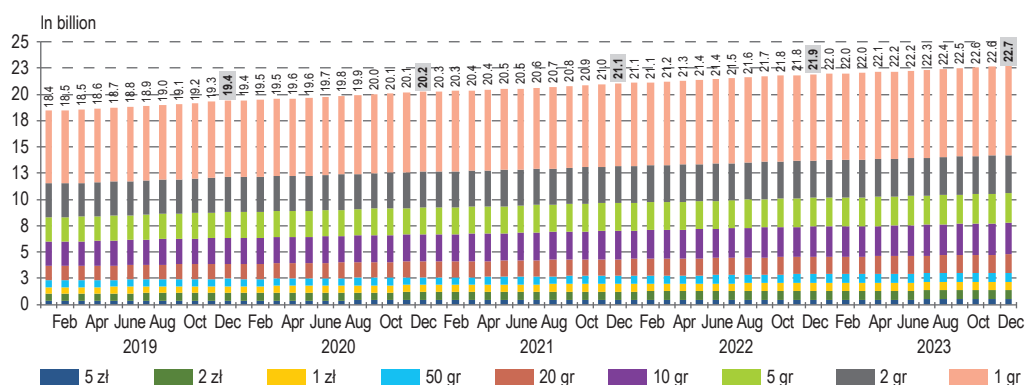
**Figure 2.9.** Denomination structure of banknotes in circulation by volume in 2019–2023



Source: study of the NBP Cash and Issue Department.

The share of coins in the value of circulation is steadily decreasing. This change does not substantially affect the total value of the circulation. At the end of 2023, coins accounted for 1.7% of the value of circulation, while 10 years earlier, at the end of 2013, the share was 2.7%. On the other hand, throughout 2023, the number of coins in circulation increased by 0.8 million pcs, i.e. by 3.7%. An increase in the volume of coins in circulation was recorded for each coin denomination. The highest increases were related to 5 zł, 50 gr and 1 zł coins (Figure 2.10).

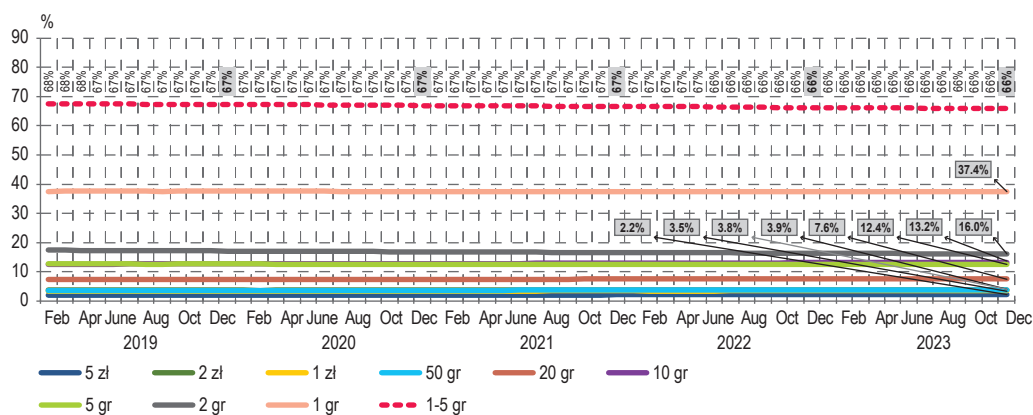
**Figure 2.10.** Volume of coins in circulation by denomination (in pcs) in 2019–2023



Source: study of the NBP Cash and Issue Department.

In 2019–2023, the denomination structure of coins in circulation by volume of coins is stable and the rule is evident that the lower the denomination of a coin, the higher its share in this structure. The share still remains highest for the 1 gr denomination (approximately 37%). Moreover, the share of the lowest denominations of 1–5 gr amounts to a total of approx. 66% (Figure 2.11).

**Figure 2.11.** Denomination structure of coins in circulation by volume in 2019–2023



Source: study of the NBP Cash and Issue Department.

## 2.2. Frequency rate of return of banknotes and coins

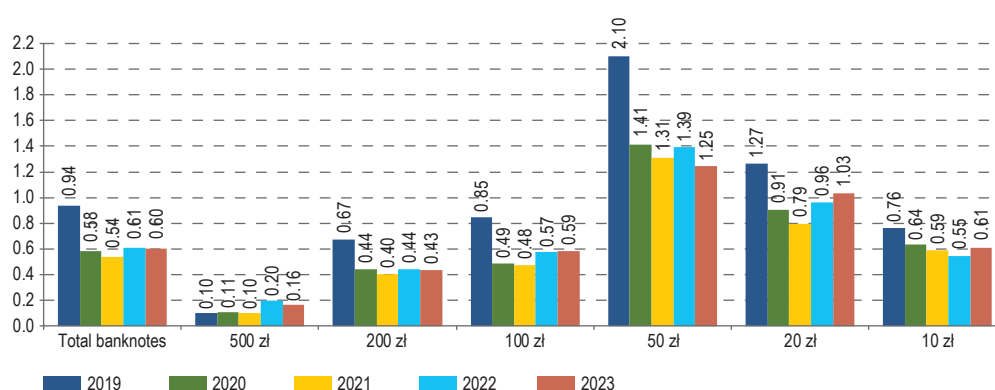
The frequency rate of return of banknotes and coins from the market to NBP is expressed by means of recirculation rates in days and in cycles.

The frequency rate of return in cycles is the quotient of the volume of banknotes and coins lodged in NBP by banks in the adopted period and the average volume of banknotes and coins in circulation in the same period. On the other hand, the frequency rate of return in days is the quotient of the average volume of banknotes and coins in circulation in the adopted period and the volume of banknotes and coins lodged in NBP by banks in the same period, multiplied by the number of days (365).

The developments in banknote (Figure 2.12) and coin (Figure 2.13) recirculation rates by denomination are illustrated below.

In 2023, a slight decline in the frequency rate of return in cycles (an increase in the frequency rate of return in days) was observed for banknotes. As at the end of 2023, the frequency rate of return for all banknote denominations amounted to 0.60, which means that at the end of 2022 a banknote was returned to the sorting room of the NBP regional branch after 605 days calculated from the moment of its withdrawal from NBP by a bank (in 2022, the frequency rate of return of banknotes amounted to 602 days). As at the end of 2023, the frequency rate of return for individual banknote denominations varied. The banknotes most frequently returned to NBP were the 50 zł and 20 zł denomination banknotes (293 days and 354 days, respectively), while the 500 zł denomination banknote was recorded least frequently – every 6 years (in 2022 – every 5 years) (Figure 2.12).

**Figure 2.12.** Frequency rate of return of banknotes in cycles in 2019–2023

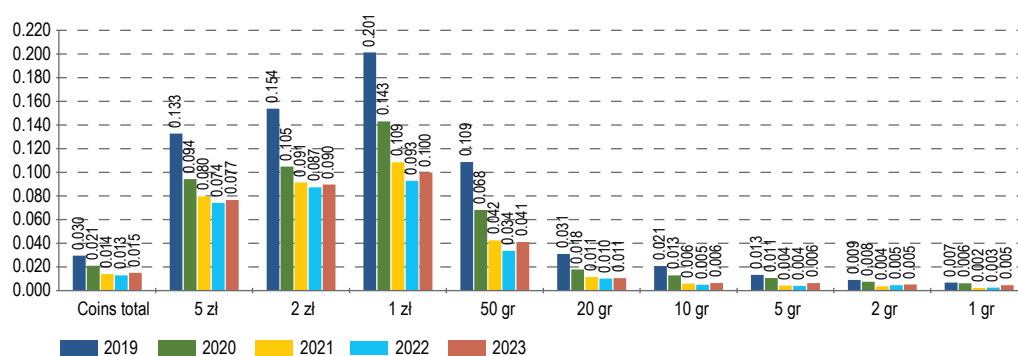


Source: study of the NBP Cash and Issue Department.

In the case of coins, the estimated statistical time of return to NBP as at the end of 2023 amounted to 24,228 days, i.e. approx. 66 years and it was 4,016 days shorter, i.e. 11 years, compared to 2022. As in the case of banknotes, frequency rates of return for coins vary depending on the denomination. A common feature of all coin denominations is that the coins (especially the lowest denominations) mostly do not return to NBP. The statistical

time of coin return to NBP can be presented in years: 5 zł – 13 years, 2 zł – 11 years, 1 zł – 10 years, 50 gr – 24 years, 20 gr – 95 years, 10 gr – 157 years, 5 gr – 156 years, 2 gr – 195 years, 1 gr – 219 years (Figure 2.13).

**Figure 2.13.** Frequency rate of return of coins in cycles in 2019–2023



Source: study of the NBP Cash and Issue Department.

Banknotes and coins processed by the commercial sector are also subject to analysis conducted based on quarterly reports submitted by banks to NBP. More details concerning this issue are presented in subsection “4.5. Reporting in the scope of cash circulation”. The above data were used to calculate the frequency rate of return of banknotes in the market<sup>9</sup> in 2023, reflecting the frequency of their return to the sorting rooms of banks and CIT companies (Table 2).

The frequency rate of return of banknotes in days in the commercial sector is almost five times lower than in NBP, which means that banknotes return to the banks’ sorting rooms five times more often than to the sorting facilities of NBP. The denomination most frequently processed on the market was the 50 zł banknote, which appeared in commercial sorting rooms more than 5 times during the year (every 70 days). Banknotes with the 50 zł denomination were also the most frequently returned to the sorting rooms of NBP regional branches (every 293 days), although this occurred more than four times less frequently than in the commercial sector. Another most frequent denomination returned to the sorting rooms of banks and CIT companies was the 100 zł banknote (every 116 days), while for NBP the second most frequent was the 20 zł denomination (every 354 days).

<sup>9</sup> The calculation was performed as in the case of the frequency of banknotes returning to NBP, replacing the volume of banknotes lodged in NBP by the volume of banknotes processed by banks and CIT companies in that period.

**Table 2.** Frequency rate of return of banknotes in cycles and in days in 2023

Denomination	NBP		Market	
	Rate of return (cycles)	Rate of return (days)	Rate of return (cycles)	Rate of return (days)
1	2	3	4	5
500 zł	0.16	2 223	0.99	369
200 zł	0.43	841	2.23	164
100 zł	0.59	623	3.14	116
50 zł	1.25	293	5.24	70
20 zł	1.03	354	2.40	152
10 zł	0.61	600	2.01	181
<b>Total</b>	<b>0.60</b>	<b>605</b>	<b>2.86</b>	<b>127</b>

Source: study of the NBP Cash and Issue Department.

## Chapter 3

---

# Cash and cashless means of payment

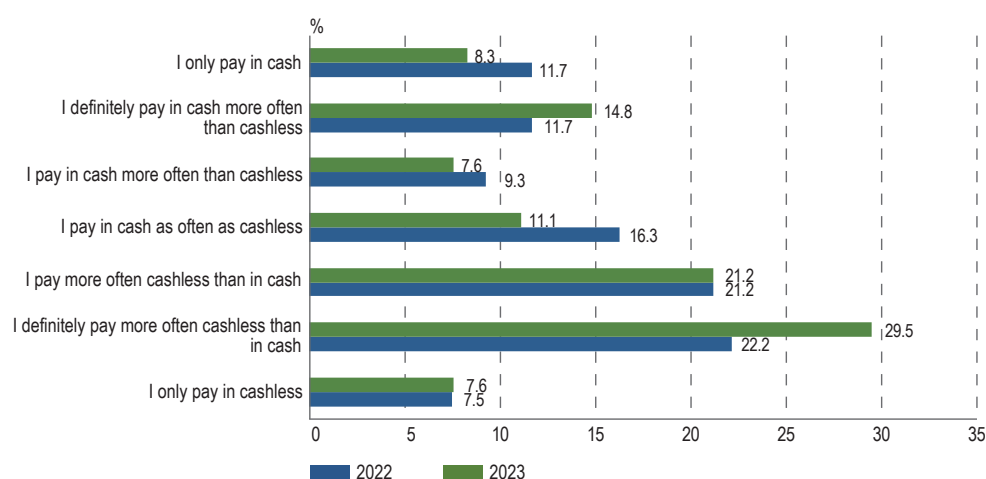
# Cash and cashless means of payment

## 3.1. Trends observed in Poland

Recent years demonstrated a high volatility and uncertainty, which has been reflected in both the demand for cash and the way it is used. In this context, 2023 can be regarded as a period of stabilisation. However, there is no doubt that past events, together with the accompanying sentiment, have reinforced and, in some areas, initiated certain trends, e.g. the growth in cashless payments and the role of cash as a store of value has increased.

A public opinion survey commissioned by NBP indicates that more than two-thirds of respondents have cash set aside just in case (68.8%). In the case of half of the respondents, this means an amount not exceeding PLN 10,000 (50.1%). Almost one in ten respondents keeps cash for precautionary purposes in the amount over PLN 10,000 to 20,000 (9.5%), and one of eleven in the amount exceeding PLN 20,000 (9.2%).<sup>10</sup>

**Figure 3.1.** Consumers' payment habits in 2022–2023 (in %)



Source: Report of the “Public opinion survey on cash in circulation”, BST Sp. z o.o. Group – IPC Sp. z o.o. Research Institute – Polska Agencja Ewaluacji Sektora Publicznego S.A. (Polish Agency for Public Sector Evaluation), 2023, p. 14.

With regard to payment preferences, according to the 2023 public opinion survey, the percentage of people declaring making payments using cash only fell by 3.4 percentage points compared to 2022 and stood at 8.3%. On the other hand, the percentage of people making transactions exclusively in a cashless form has slightly increased (0.1 percentage points y/y) and amounted to 7.6%. Although cash prevails over cashless transactions among persons using only one form of payment, in the broader context, the vast majority of respondents prefer cashless transactions (58.3% – an increase of 7.4 percentage points in relation to 2022). In the survey, less

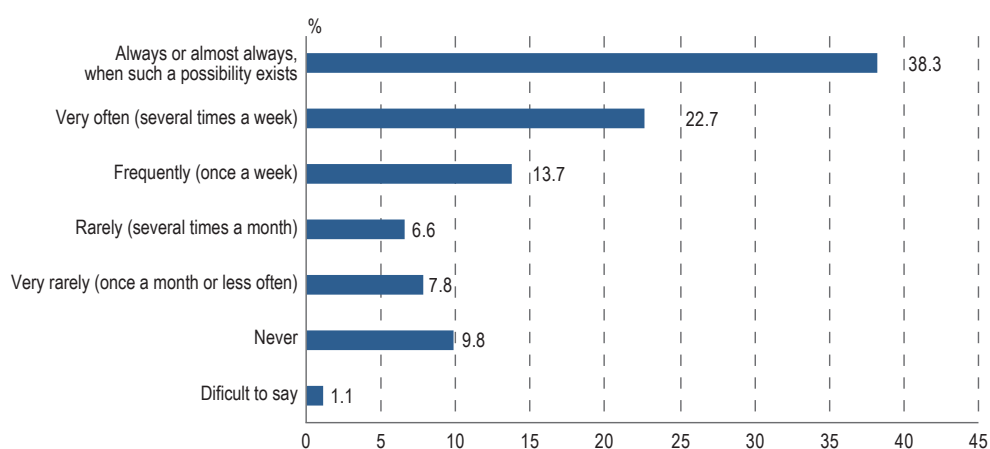
<sup>10</sup> Report of the “Public opinion survey on cash in circulation”, BST Sp. z o.o. Group – IPC Sp. z o.o. Research Institute – Polska Agencja Ewaluacji Sektora Publicznego S.A. (Polish Agency for Public Sector Evaluation), 2023, p. 16.

than a third of respondents (30.7% – a decrease of 2 percentage points) indicated that they used cash more often than cashless forms of payment. The analysis of these changes shows that the percentage of persons using various cashless forms of payment has increased over recent years<sup>11</sup> (Figure 3.1).

In 2023, 28.2% of respondents who use cash payments indicated that they preferred to make cash payments regardless of the amount, which means a decrease of 3 percentage points compared to 2022. People aged 65 and over account for almost two-thirds of this group. On the other hand, no significant differences are observed in the amounts constituting the limit to which cash payments are preferred depending on the demographic characteristics of the respondents. More than one quarter of respondents (27.5%) declare that the amount of the payment does not have an influence on the payment method they choose.<sup>12</sup>

Similar results were obtained in a survey on consumer payment preferences commissioned by Fiserv Polska S.A.: 9.8% of respondents declare that they never pay cashless (for comparison, 8.3% of respondents in the NBP survey declared that they paid only in cash), while 38.3% of respondents choose cashless payment methods always or almost always when they have such a possibility (for comparison, in the NBP survey, 37.1% of respondents declared that they paid definitely more often or only cashless) (Figure 3.2).

**Figure 3.2.** How often do Poles pay cashless? (in %)



Source: Report of the survey of payments among consumers "Payment preferences of Poles 2024", IBRiS, commissioned by Fiserv Polska S.A., 2024.

In the public opinion survey commissioned by NBP, respondents asked about the reasons for choosing cash payments most often indicated that it was not always possible to pay with a payment instrument other than cash (55.3%). In addition, an important aspect related to security issues – if cash is lost, losses are limited to the amount held and cash payments are accompanied by less concern about fraudulent transactions (46.2%). Among the reasons for reaching for cash, respondents also listed a feeling of more control over physical money than over virtual money (44.6%), as well as the assurance of anonymity (39.9%). On the other hand,

<sup>11</sup> Ibidem, p. 14.

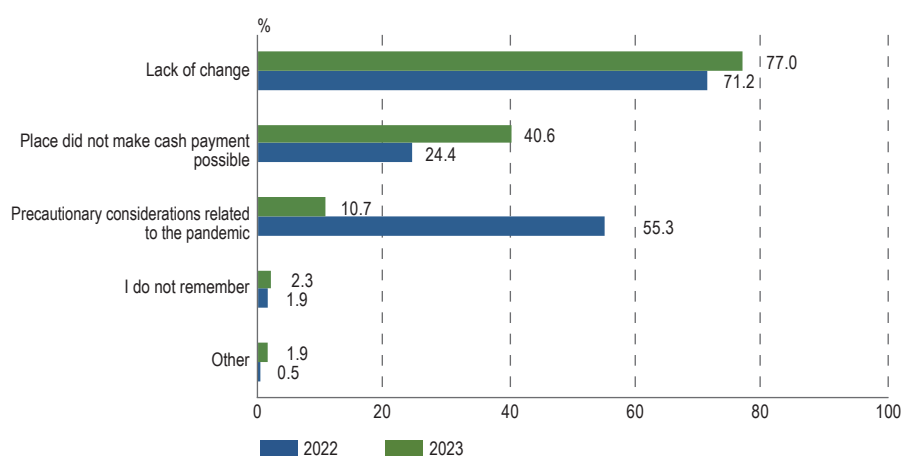
<sup>12</sup> Ibidem, p. 15.

supporters of cashless forms of payment appreciate the speed of transactions (54.8%), common acceptance (51.3%), and the ability to make payments remotely (42.4%). In this case, security issues were also indicated, such as the reluctance to carry large amounts of cash and limited losses after the loss of a payment card (36.7%).<sup>13</sup>

It is worth noting that according to the public opinion survey commissioned by NBP, consumer awareness of the obligation to accept cash has increased. A decline in the cases of refusal to accept cash is also noticeable. Eight out of ten (81.7%) respondents indicated that they were aware of the existing statutory obligation for cash acceptance in physical points of sale and the impossibility for retailers to refuse the acceptance of cash payments (with a few exceptions specified in the law).<sup>14</sup> In 2022, slightly over half of respondents (52.2%) did not have such knowledge.<sup>15</sup>

In 2023, the percentage of consumers who experienced a refusal to accept cash payments in the past 12 months was 10.4 percentage points lower than in 2022, affecting one in four respondents (24.4%). Residents of cities with a population from 200,000 to 500,000 (29.1%) were most likely to experience a refusal, while residents of rural areas were least likely (17.3%). As in the previous years, the most common reason for refusing to accept cash payments was the lack of coins to give change (Figure 3.3).<sup>16</sup>

**Figure 3.3.** Reasons for refusal to accept cash payments in 2022–2023 (in %)



Source: Report of the “Public opinion survey on cash in circulation”, BST Sp. z o.o. Group – IPC Sp. z o.o. Research Institute – Polska Agencja Ewaluacji Sektora Publicznego S.A. (Polish Agency for Public Sector Evaluation), 2023, p. 32.

Less than three quarters of all cases of cash acceptance refusal related to an amount below PLN 100 (74.3%), while one in five transactions ranged from PLN 100 to PLN 1,000 (21.5%). Respondents were most often refused cash acceptance in small or specialised grocery or convenience stores (36.4%), and less often in large retail outlets such as supermarkets (24.5%).

<sup>13</sup> Report of the “Public opinion survey on cash in circulation”, 2023, op. cit., p. 18–19.

<sup>14</sup> Ibidem, p. 34.

<sup>15</sup> Ibidem, p. 30.

<sup>16</sup> Ibidem, p. 32.

The inability to pay in cash also applied to some devices such as vending machines, ticket machines and parking meters (32.6%).

Almost nine in ten respondents who experienced a refusal to accept payment in cash opted to pay in a cashless form (87.4% – 12.1 percentage points more than a year earlier). The most common alternatives to cash payments included payment cards (92.1% of cases) and BLIK code (7.0%).<sup>17</sup>

Although a lack of change was the most frequently indicated reason for refusing to accept cash (77%), in 2023 only one in four respondents indicated that at least once a month the seller did not have the appropriate denomination to give several coins in change (26.1%), while a year earlier almost one in two respondents experienced such a situation once a month or more often (46.8%). Under the circumstances indicated, nine out of ten respondents agreed to no change being given (89.6%).<sup>18</sup>

Although the number of coins in circulation is significant, coins (especially low denominations) return to NBP extremely rarely, as confirmed by analyses of data carried out by NBP (see subsection “2.2. Frequency rate of return of banknotes and coins”). Public opinion surveys indicate that, on average, one in three respondents (31.3%) has a place at home where they collect coins. Among these people, two in five (42.1%) declare that they hold from 100 to 500 coins, while nearly one third (29.6%) hold coins above this number.<sup>19</sup> NBP provides customers with self-service coin exchange devices installed in regional branches located in all voivodship cities in the country. The results of the surveys have shown that one in four respondents heard of the possibility to use this solution to exchange coins into higher denominations or deposit the equivalent of deposited coins on a bank account using a BLIK code (26.6%). One fifth of respondents in this group (18.9%) has performed such an operation, with as many as 83.4% rating the quality of the coin-exchange service highly during their last use of the device. In almost half of the cases, the coins exchanged came from change received when shopping which has been kept at home (46.3%).<sup>20</sup> Due to the introduction of the self-service coin exchange service, more than 669 million coins were returned to NBP in the years 2021–2023 (see Box E).

In relation to the availability of cash, the survey results show that ATMs were the most common channel of access to cash chosen by respondents in 2023. Only one in twelve respondents did not use this channel at all (8.1%).<sup>21</sup> On an annual basis, in the years 2017–2022, the number of ATMs in Poland decreased steadily. On the other hand, in 2023, their number increased by 775 units compared to the previous year. At the end of 2023, almost 22,100 devices operated in Poland. Compared to 2022, the number of cash withdrawals from ATMs increased by 4.3% (21 million), i.e. from 494 million operations in 2022 to more than 515 million operations in 2023. The total value of ATM withdrawals also increased by 11.0% (PLN 42 billion), i.e. from PLN 379 billion to PLN 421 billion, respectively. The average value of cash withdrawn from ATMs increased from PLN 767 to PLN 816, i.e. by 6.5%. This situation differs from previous years when, with the number of

---

<sup>17</sup> Ibidem, p. 32.

<sup>18</sup> Ibidem, p. 37.

<sup>19</sup> Ibidem, p. 60.

<sup>20</sup> Ibidem, p. 47.

<sup>21</sup> Report of the “Public opinion survey on cash in circulation”, 2023, op. cit., p. 25.

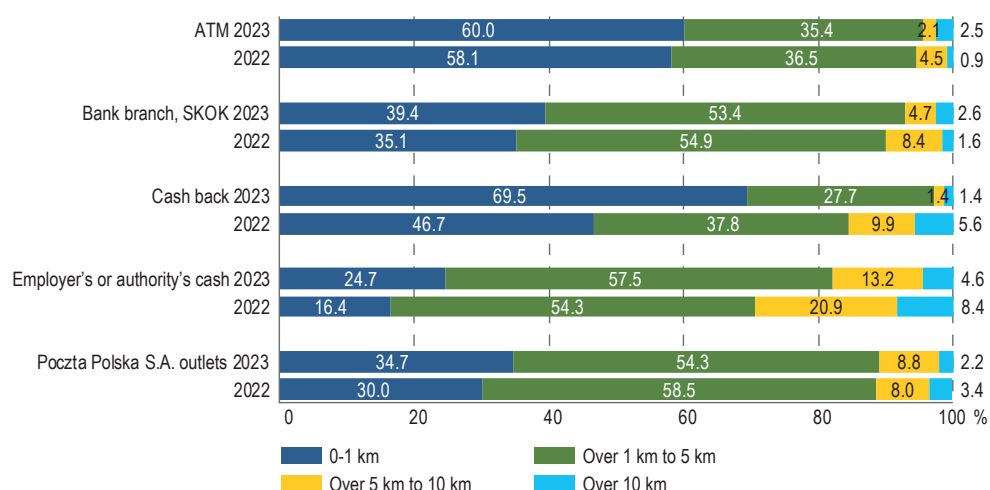
ATM withdrawals decreasing, the average withdrawal amount increased as a result of the rising total value of withdrawals.<sup>22</sup>

In a survey commissioned by NBP, nine in ten respondents indicated that, in their opinion, access to cash in Poland via ATMs was satisfactory or rather satisfactory (90.9% in total) (Figure 3.5).<sup>23</sup>

As many as 60% of respondents participating in the public opinion survey indicated that the distance between their place of residence and the nearest ATM was less than 1 km (Figure 3.4).

For 95.4% of respondents, this distance does not exceed 5 km, while the percentage of respondents declaring access to an ATM within 10 km is 97.5%.

**Figure 3.4.** Distance to the nearest cash access point from the place of residence in 2023 (%)



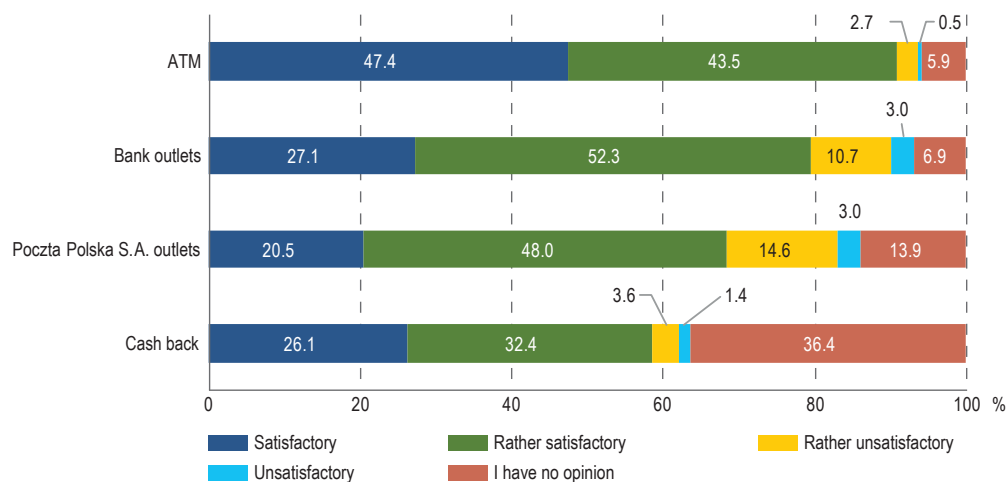
Source: Report of the “Public opinion survey on cash in circulation”, BST Sp. z o.o. Group – IPC Sp. z o.o. Research Institute – Polska Agencja Ewaluacji Sektora Publicznego S.A. (Polish Agency for Public Sector Evaluation), 2023, p. 22.

Distance from home is not the only criterion for respondents to select a particular cash access point. Most respondents (53.1%) admit that they usually decide to withdraw cash at a point located on the way from their workplace or other place of activity.

In this regard, one quarter of respondents are guided by habit (23.4%), while one in seven respondents choose a particular cash access point due to the absence of withdrawal fees (14.1%).

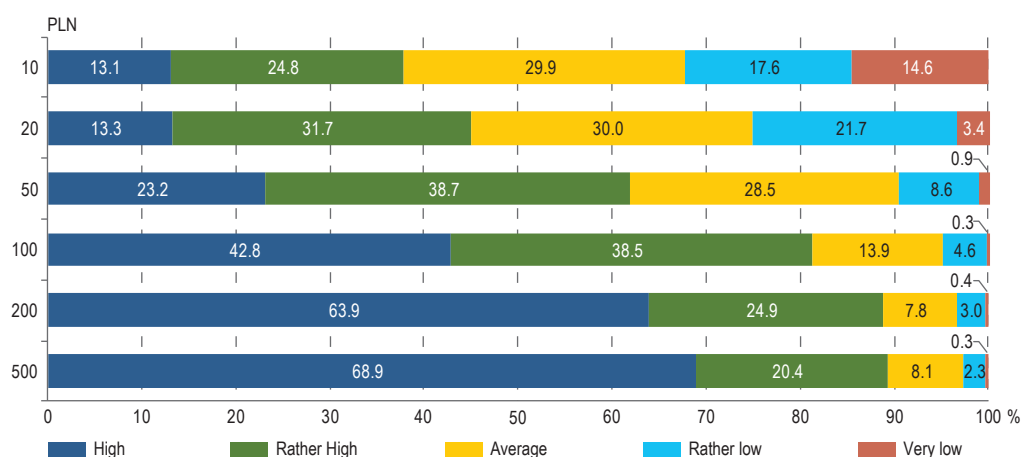
<sup>22</sup> NBP data: “Number of ATMs. Value and volume of ATMs transactions since 1999”, <https://nbp.pl/en/payment-system/statistical-data/payment-cards/> [accessed: 20 May 2024].

<sup>23</sup> Ibidem, p. 6.

**Figure 3.5.** Access to cash in the territory of Poland through individual channels in 2023 (%)

Source: Report of the “Public opinion survey on cash in circulation”, BST Sp. z o.o. Group – IP Sp. z o.o. Research Institute – Polska Agencja Ewaluacji Sektora Publicznego S.A. (Polish Agency for Public Sector Evaluation), 2023, p. 6.

Three in four respondents are satisfied with the quality of banknotes withdrawn from ATMs. As the banknote denomination increases, the percentage of respondents perceiving the quality of the banknotes in circulation as high or rather high increases: from 37.9% for the 10 zł banknote to 89.3% for the 500 zł banknote (Figure 3.6).

**Figure 3.6.** Quality of general circulation banknotes (%)

Source: Report of the “Public opinion survey on cash in circulation”, BST Sp. z o.o. Group – IPC Sp. z o.o. Research Institute – Polska Agencja Ewaluacji Sektora Publicznego S.A. (Polish Agency for Public Sector Evaluation), 2023, p. 52.

In the survey, respondents indicated that on average one in three had experienced problems when withdrawing cash in 2023 (32.9%). These problems were least common in villages (24.7% of affirmative responses), while they were most common in towns with a population of 200–500 thousand (40.7%). Half of these cases were caused by out-of-service ATMs (53.4%), while in two out of five cases the problem resulted from a long queue at the access point (42.0%). Other reasons indicated included the liquidation of an ATM (21.0%), a limit on the maximum cash withdrawal set by the operator (15.3%), insufficient cash at the cash desk during a cash back withdrawal (14.8%), and the closure of a bank outlet or its conversion to a cashless branch (11.4%).

The result of the public opinion survey confirms that cash is more than just a means of payment. Four in ten respondents have confirmed that they are emotionally attached to Polish banknotes (43.0%), while more than one in two respondents perceive the Polish banknote as a national symbol (55.8%). When asked to share their comments and considerations concerning cash in Poland, respondents have emphasised that cash represents freedom and autonomy, while the Polish zloty is a symbol of independence.<sup>24</sup>

The report on “Payment Preferences of Poles 2024” shows that almost half of respondents are interested in innovation in the scope of payment services. More than one in five respondents, when asked “what innovative payment methods would Poles use?”, indicated fingerprint payments. Solutions such as payment by palm print, iris or payment using voice<sup>25</sup> were also mentioned among the responses. Despite declarations of openness to technological innovations in payments, 22% of respondents still indicate that they pay for online purchases by cash on delivery and 10% by cash at the post office or with the courier. On the other hand, 9% of respondents say they pay their bills at the post office (a decline from 29% in 2016), 5% – at the institutional cash points (unchanged), and 7% at banks or credit union branches (a decline from 12% in 2016).<sup>26</sup>

The dynamic changes in payment methods in Poland reflect technological progress and the evolution of society’s preferences. The development of payment infrastructure and innovative digital solutions in the area of finance fosters the popularity of cashless payments. The trends observed create new challenges related to the security of transactions or the prevention of social exclusion. It is worth emphasising that the availability of cash in Poland is widespread and, compared to non-cash solutions, less dependent on the technological infrastructure, which shows the advantage of cash, especially among social groups using banking services to a lesser extent. Cash remains an essential element in the area of payments, satisfying the diverse needs of society, especially in periods of uncertainty.

---

<sup>24</sup> Report of the “Public opinion survey on cash in circulation”, 2023, op. cit., p. 20.

<sup>25</sup> Report of the survey “Payment preferences of Poles 2024”, op. cit. p. 13.

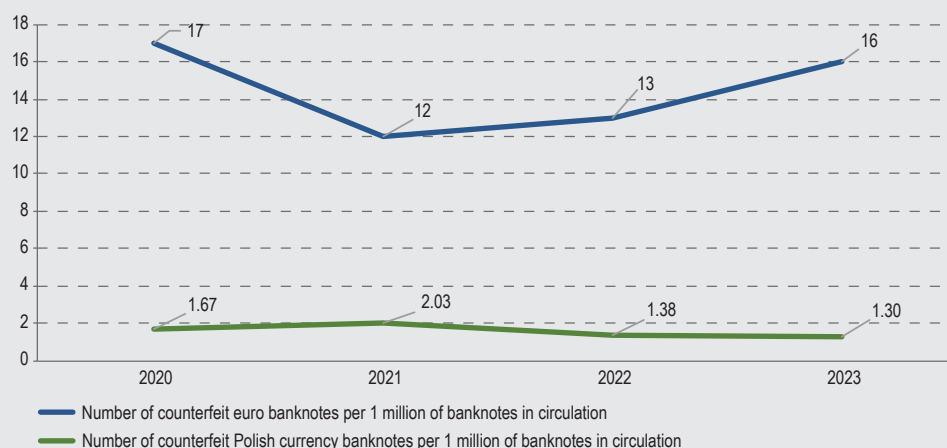
<sup>26</sup> Survey of attitudes and behaviours of Poles in the area of finance in 2017–2023, “Finance in times of inflation”, Autopay SA, March 2023, p. 79, <https://autopay.pl/storage/aktualnosci/finanse-w-czasach-inflacji---raport-z-badania-marzec-2023.pdf>.

### Box A. Trends in the scope of counterfeiting of the Polish currency

The security of coins and banknotes in circulation and, consequently, of all participants of this circulation is one of the priorities of the proper functioning of the cash cycle. NBP remains an active participant in the process aimed at counteracting banknote and coin counterfeiting. The role of specialists in this area is performed by experts from NBP which cooperates on an ongoing basis with law enforcement agencies to combat counterfeiting by analysing banknotes and coins of suspicious authenticity, monitoring the scale of counterfeit banknotes and coins discovered and assisting the police and prosecutors in providing these bodies with expert opinions.

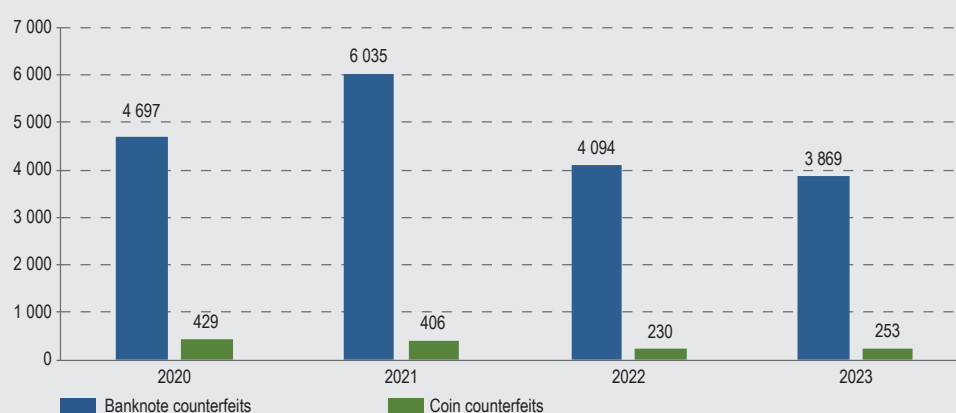
In Poland, a downward trend in the number of disclosed counterfeits of Polish currency has been observed in recent years. In 2023, the ratio of counterfeits disclosed per 1 million authentic banknotes and coins in circulation was 1.0. In the case of Polish cash circulation, the PPM (pieces per million) ratio, i.e. the number of counterfeits per 1 million banknotes in cash circulation, amounted to 1.30 (compared to 1.38 in 2022). Compared to euro banknotes, the recorded counterfeit rate per 1 million Polish currency banknotes is significantly lower. According to the information published by the European Central Bank, the number of counterfeit euro banknotes detected in 2023 reached 467,000 (compared to 376,000 in 2022), while the PPM ratio was 16. A year earlier, the European Central Bank reported 13 PPM, in 2021 – 12 PPM, in 2020 – 17 PPM (Figure A1).

**Figure A1.** Comparison of PPM ratios for Polish banknotes and euro banknotes in the years 2020–2023



Source: NBP data.

In 2023, Poland saw a decrease in the number of disclosed counterfeit Polish currency banknotes from 4,324 to 4,122 pcs and a decrease in the number of counterfeit banknotes from 4,094 to 3,869 pcs, compared to 2022. The number of counterfeit banknotes has remained low for several years. At the same time, an increase in the number of counterfeit coins revealed in 2023 – from 230 to 253 was recorded. However, the procedure of coin counterfeiting is marginal (Figure A2).

**Figure A2.** Number of counterfeit banknotes and coins in Polish currency in 2020–2023

Source: NBP data.

NBP preventive activities aimed at counterfeiting begin at the stage of designing banknotes and coins, implementing their advanced security features, through quality control of their supply from manufacturers – to ensure that the highest quality banknotes are put into circulation.

Nevertheless, it has recently become apparent that a significant phenomenon in the area of counterfeit banknotes and coins is the use of images of authentic banknotes and the modification of the banknote graphical design by including additional imprints, e.g. “counterfeit”, “Souvenir” and “not legal tender” or “prop”. These are counterfeits made according to the image of banknotes, which in many cases do not contain any imitation security features, but are similar to authentic banknotes in terms of dimensions, graphics and colours used.

Moreover, the protection of banknotes and coins against counterfeiting implements the tasks adopted in the National Strategy for Cash Circulation Security which takes into account the need to continue training activity in the scope of identifying the authenticity of banknotes and coins. In 2023, the employees of the Cash and Issue Department and NBP regional branches conducted training sessions attended by employees of, among others, bank branches, CIT companies<sup>27</sup>, retail chains, Poczta Polska S.A., fiscal administration and law enforcement agencies.

### 3.2. Trends in selected countries

As a consequence of changes in the payments landscape and the growing popularity of cashless payments, the role of cash in the economy has been changing. At the same time, since 2020, as a consequence of the COVID-19 pandemic and the full-scale military aggression of the Russian Federation against Ukraine, challenges have occurred related to the public response to the growing uncertainty. All these factors are reflected in, among others, changes

<sup>27</sup> CIT companies (cash-in-transit) – undertakings commissioned by banks to perform activities related to counting and sorting of banknotes and coins (entrusting actual activities in accordance with Article 6a(1)(2) of the Act of 29 August 1997 – Banking law) and transporting cash.

in circulation values or public attitude towards cash. This section of the report provides a summary – an overview of the global trends observed in the cash circulation market based on research and analysis that were conducted and published in 2023 and 2024 (until the time of drawing up this Report).

### 3.2.1. Cash circulation

Increased demand for cash was reported in 2023 in the United States where, as in other parts of the world, the COVID-19 pandemic contributed to rapid growth in the level of cash in circulation per capita. As a consequence of the outbreak of the pandemic, the United States saw an increase in cash holdings per person: from USD 241 in 2019 to USD 299 in 2020 and USD 408 in 2021. The highest level of cash holdings per capita was recorded in 2022, reaching USD 418. In 2023, this value dropped to USD 369 per capita.<sup>28</sup> The reasons for the significant rise in the value of cash circulation seen in the United States since 2020 included, among others, an increase in cash holdings for precautionary purposes. Consequently, in October 2023, the value of US dollars in circulation amounted to USD 2.33 trillion – a significant rise from USD 1.73 trillion four years earlier. However, compared to previous years, the growth rate of cash in circulation in the United States slowed down in 2023. The FED data shows that the total value of US dollars in circulation at the end of 2023 was 1.6% higher than at the end of 2022, when it amounted to USD 2.3 trillion.<sup>29</sup> Persons previously accumulating cash holdings were partially reducing them which, according to FED analysts, was associated with less uncertainty regarding the development of the pandemic, as well as with increased opportunity costs resulting from higher interest rates.<sup>30</sup>

The rapid rate of growth in the value of cash circulation in Romania continued in 2023. At the end of December 2023, the value of cash in circulation in Romania was 8.8% higher than at the end of 2022. The growth rate of cash in circulation was similar to 2019 and 2021, when it amounted to 9.5% and 9.0%, respectively, compared to the end of the previous year. Although it did not reach the record high recorded at the end of 2020 (18.9% compared to the end of 2019), it was significantly faster than in 2022 (the beginning of the Russian Federation full-scale military aggression against Ukraine). At that time, at the end of 2022, the value of Romanian lei in circulation was 5.4% higher than in the previous year.<sup>31</sup>

On the other hand, relative stabilisation of the value of cash in circulation was recorded in 2023, among others, in the euro area and in the United Kingdom. At the end of 2023, the number of euro banknotes in circulation reached 29.8 billion pcs, while their total value amounted to EUR 1.57 trillion. These developments were accompanied by a relatively low level of annual growth in the volume of banknotes in circulation (1.2%) and a decline in the value of euro circulation of 0.3%. The value of euro coins in circulation reached EUR 33.5 billion, 3.2% higher than a year earlier.<sup>32</sup>

<sup>28</sup> B. Bayeh, E. Cubides, S. O'Brien, *2024 Findings from the Diary of Consumer Payment Choice*, 2024, The Federal Reserve Financial Services, p. 10.

<sup>29</sup> Federal Reserve Bank St. Louis data, <https://fred.stlouisfed.org/series/CURRCIR> [accessed: 29 May 2024].

<sup>30</sup> B. Bayeh, E. Cubides, S. O'Brien *2024 Findings from the Diary...*, op. cit., p. 13.

<sup>31</sup> Banca Națională a României data, <https://www.bnr.ro/Press-Releases---Monetary-Indicators-4169.aspx> [accessed: 29 May 2024].

<sup>32</sup> *ECB Annual Report 2023*, European Central Bank, 2024, pp. 64–65.

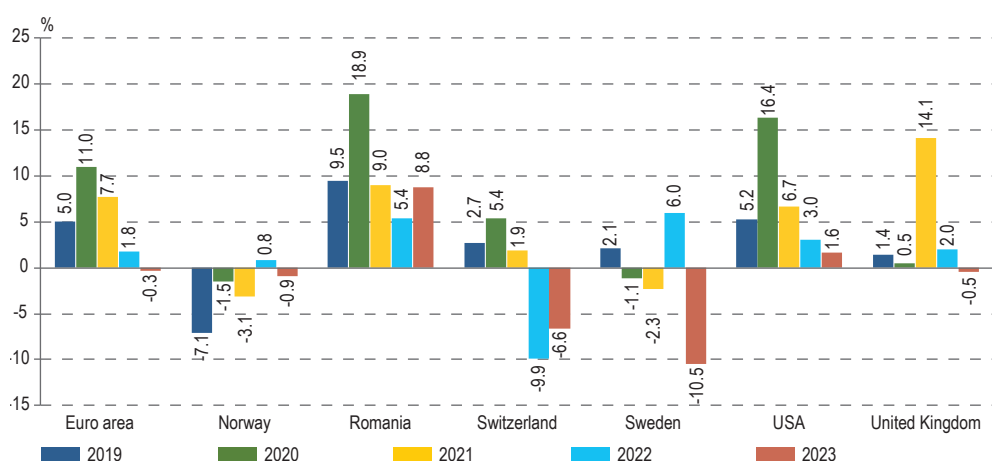
Similar changes in circulation values were also recorded in the United Kingdom. According to figures published by the Bank of England, the value of banknotes in circulation at the end of 2023 reached GBP 81.3 billion, i.e. 0.4 billion (0.45%) lower than a year earlier.<sup>33</sup>

Data of the Norges Bank shows that the value of cash in circulation in Norway has also decreased over recent years. Nevertheless, it is worth noting the short-term increase in demand for cash in Norway in 2022. Consequently, the value of cash circulation in Norway at the end of 2022 amounted to NOK 37.6 billion<sup>34</sup>, i.e. 0.8% higher than at the end of 2021. Cash demand decreased again in 2023 (by 0.83%). This means that the rate of decline in demand for cash in Norway in 2023, compared to 2019–2021, was significantly slower. At the end of December 2023, the value of Norwegian kroner banknotes and coins in circulation was NOK 39.7 billion.<sup>35</sup>

The decline in the value of cash in circulation in Sweden deepened in 2023: at the end of 2023, the value of Swedish krona in circulation amounted to SEK 55.3 billion and decreased by SEK 6.5 billion compared to the end of 2022.<sup>36</sup>

The year 2023 was the second consecutive year when the Bank of Switzerland recorded a decline in cash in circulation. At the end of December 2023, the value of Swiss francs in circulation was CHF 76.5 billion, down from 2021 and 2022, the record years in terms of cash in circulation. The circulation at the end of these years amounted to CHF 88.3 billion and CHF 87.2 billion, respectively.<sup>37</sup>

**Figure 3.7.** Annual changes in the value of banknotes in circulation in selected countries of the world in the years 2019–2023



Source: study of the NBP Cash and Issue Department based on the data of the ECB, FED, Norges Bank, Bank of England, Sveriges Riksbank, and Banca Națională a României.

<sup>33</sup> Bank of England data, <https://www.bankofengland.co.uk/statistics/banknote> [accessed: 29 May 2024].

<sup>34</sup> *Retail payment services 2022*, Norges Bank Papers no 1/2023, May 2023, Norges Bank, pp. 17–18.

<sup>35</sup> Statistics Norway data, <https://www.ssb.no/en/statbank/table/10946/tableViewLayout1/> [accessed: 29 May 2024].

<sup>36</sup> Sveriges Riksbank data, <https://www.riksbank.se/en-gb/statistics/statistics-on-payments-banknotes-and-coins/notes-and-coins/> [accessed: 29 May 2024].

<sup>37</sup> Data of Schweizerische Nationalbank (SNB), <https://www.ssb.no/en/statbank/table/10946/tableViewLayout1/> [accessed: 29 May 2024].

Figure 3.7 illustrates the annual changes in the value of banknotes in circulation in the countries described above.

### 3.2.2. Payment habits and precautionary role of cash

The market of payments is evolving, which is associated, among others, with the growing popularity of cashless payment methods. The use of cash as a means of payment has been declining for years in many countries worldwide, although for many societies cash plays a significant role in making payments. Historically, countries with a high share of cash in transactions include, for example, Spain and Switzerland. On the other hand, countries with low levels of cash use for transactional purposes include, for example, the Scandinavian countries. At the same time, observed changes in the role of cash in the economy indicate shifts from the trading function towards the precautionary and store of value function, while increased demand for cash during the periods of the last two crises triggered successively by the outbreak of the COVID-19 pandemic and the full-scale military aggression of the Russian Federation against Ukraine has shown that cash – in addition to serving as a store of value – is an important link for stabilising public sentiment in times of increased uncertainty.

In the area of the role of cash in transactions, a Banco de España study indicates that in 2023, cash remained the main method of payment at the point of sale for 60% of the Spanish population, while 65% of Spaniards used cash in their daily payments. As the authors of the survey acknowledge, after a rapid decline in cash use recorded in the early days of the COVID-19 pandemic, the 2022–2023 survey shows a “recovery” in cash use.<sup>38</sup>

The results obtained in Spain indicate that in 2023, 77% of survey respondents declaring a preference for cash payments for precautionary reasons had not changed their payment habits in the last year, 9% of respondents declared that they had increased and almost 14% that they had decreased their use of cash in the previous year.<sup>39</sup> Spanish respondents preferring cash payments used cash due to protection against electronic errors and fraud (42% of respondents), better control of spending (40% of respondents), privacy (39% of respondents) and protection against financial exclusion (18% of respondents).<sup>40</sup>

At the same time, 7 out of 10 respondents in a survey conducted by Ipsos for the Bank of Spain expressed the view that cash use would not change in the coming year, although in this case diversified responses were observed among respondents by age: younger respondents aged under 35 were more likely to believe that cash use would decrease than older respondents.<sup>41</sup>

Cash remains an important means of payment in Switzerland, as confirmed by the cyclical survey of payment habits conducted in May 2023. In terms of volume, 28.2% of total payment transactions in Switzerland in 2023 were cash transactions. In terms of value, the share of cash transactions reached 14.6%. The share of cash is higher for transactions carried out under conditions of physical presence at the place of purchase, amounting to 32.1% in terms of the number of transactions performed and 21.2% in terms of the value of transactions,

<sup>38</sup> L. Barreiro, F. Ferrando, D. Posada, *Cash use, access and acceptance in Spain: An analysis drawing on the 2023 Study on Cash Use Habits*. Economic Bulletin – Banco de España, 2024/Q1, 01, <https://doi.org/10.53479/35713>.

<sup>39</sup> Ibidem.

<sup>40</sup> *Study on cash use habits. 2023 Executive report*, Ipsos & Banco de España, October 2023.

<sup>41</sup> Ibidem.

respectively.<sup>42</sup> However, global trends indicating a decreasing share of cash in payments are also evident in this country. In comparison, in 2019, the share of cash in payments in Switzerland reached 47.7% by volume and 26.5% by value.<sup>43</sup>

In Switzerland, holding of cash in wallets has stabilised, while the group of respondents declaring that they did not carry cash in their wallet varied in the four successive editions of the survey of payment habits in the years 2021–2023 between 12.7% and 15.8%. At the same time, since 2021, the average amount of cash habitually kept in the wallet by an average Swiss has increased from CHF 84 to CHF 113. Although the share of respondents declaring keeping cash at home decreased from 41.3% to 37.3% in May 2023, the declared average amount kept by respondents increased significantly, from CHF 591 in 2021 to CHF 780, i.e. by almost a third.<sup>44</sup>

More than half (54%) of entrepreneurs in Switzerland declared keeping cash (40% of respondents have declared that they do not keep cash and 6% did not answer this question). They indicated precautionary considerations, i.e. ensuring continuity in the event of unforeseen acute events, as the main reason for keeping cash. At the same time, comparing the results of the previous edition of the survey conducted in 2021, it can be seen that respondents indicated precautionary factors more frequently than 2 years earlier: over the two years, the share of these responses increased from approximately 27% to 40%.<sup>45</sup>

The United States of America belong to countries with moderate use of cash in transactions. The annual diary survey conducted in the United States indicated that the average respondent conducted 46 payment transactions per month (i.e. seven more than in October 2022). The number of cash transactions amounted to 7 and did not change compared to 2022, but at the same time decreased by a half compared to 2016, from 14 transactions per month. Cash was the third most important payment method for consumers, following debit cards and credit cards. Since 2021, the share of consumers who made cash payments in their daily transactions at the point of purchase in the United States stabilised: one in five Americans chose cash payments. Cash was also the second most important means of payment chosen by consumers declaring a preference for cash payments: this group of consumers made 18% of their payments in cash during the study period, leading the authors of the study to conclude that, due to the size of the population, persons preferring card payments made more payments in cash than those declaring a preference for cash payments.<sup>46</sup>

Analysis of payment habits in Australia indicates that the share of so-called “frequent cash users”, i.e. people who use cash in at least 80% of point-of-sale transactions, reached 7% in November 2022. This means that the share of this user group has decreased by half over 3 years.<sup>47</sup> At the same time, nearly 30% of persons declaring that they keep cash just in case

---

<sup>42</sup> S. Graf, N. Heim, T. Truetsch, *Swiss Payment Monitor 2023. How does Switzerland pay?* Issue 2/2023 – Survey May 2023, Universität St. Gallen Center for Financial Services Innovation & ZHAW School of Management and Law, St. Gallen. Gallen/Winterthur, August 2023, pp. 6–8.

<sup>43</sup> S. Graf, N. Heim, T. Truetsch, *Swiss Payment Monitor 2023...*, op. cit., pp. 6–8.

<sup>44</sup> S. Graf, N. Heim, T. Truetsch, *Swiss Payment Monitor 2023...*, op. cit., pp. 21–22.

<sup>45</sup> *Payment Methods Survey of Companies in Switzerland 2023*, Schweizerische Nationalbank, Zurich, February 2024.

<sup>46</sup> B. Bayeh, E. Cubides, S. O'Brien, 2024 *Findings from the Diary...*, op. cit., p. 4.

<sup>47</sup> J. Mulqueeney, T. Livermore, *Cash Use and Attitudes in Australia*, Reserve Bank of Australia, Bulletin – June 2023, pp. 30–37.

(so-called out of wallet) answered that they did so in case of sudden unforeseen transactions caused, for example, by natural disasters.<sup>48</sup>

In 2022, in the United Kingdom the share of cash in all payments was 14%, which means a significant decrease of 20 percentage points compared to the share recorded in 2017 (34%) and as much as 40 percentage points compared to 2012.<sup>49</sup>

In terms of the share of cash payments in total transactions in the country, the Scandinavian countries, especially Norway and Sweden demonstrate particularly low levels of cash use in payments. In Norway, the share of cash in the number and value of transactions has remained relatively stable since 2020. Cash transactions account for 3% of the volume of transactions and 2% of the value of transactions in Norway.<sup>50</sup> At the same time, Norway is the Scandinavian country with the lowest use of cash for payment purposes and the highest use of payment cards.

Sweden has a similar level of cash use for payment purposes. At the same time, the survey indicates that Swedes do not want to resign from cash. A survey of payment habits conducted in September 2023 showed that 49% of respondents had used cash as a means of payment at least once during 30 days preceding the survey, but only 3% of respondents said they had used cash to pay bills.<sup>51</sup> At the same time, the Riksbank believes that the 2023 survey suggests an increased interest in cash payments: compared to the results of the previous 2022 edition, the share of respondents saying they used cash in the 30 days preceding the survey was 15 percentage points higher than in the survey conducted a year earlier.<sup>52</sup> In the Riksbank survey on payment habits in 2023, one in three respondents said they had reduced their use of cash and one in ten respondents said they had increased their use of cash; 57% of respondents said their use of cash had not changed. Respondents declaring increased use of cash indicated security issues (65%), the ability to control their own finance more easily (46%), anonymity (26%) or the lack of possibility to make cashless payments (8%) as the main reasons. Persons declaring a reduction in cash payments were most likely to justify this change by restrictions on cash acceptance (56%), the ease and flexibility of cashless payments (46%), increased online shopping (33%) or the difficulty of using cash (32%).

The use of cash for trading purposes was accompanied by a noticeable increase in the hoarding role of cash in Sweden. Although one in four respondents to the Swedish survey declared that they did not carry any cash, at the same time two-thirds of respondents declared that they had savings in cash. Almost one in ten respondents (9%) declared cash savings of at least SEK 10,000.<sup>53</sup>

---

<sup>48</sup> J. Mulqueeney, T. Livermore, *Cash Use...*, op. cit., pp. 30–37.

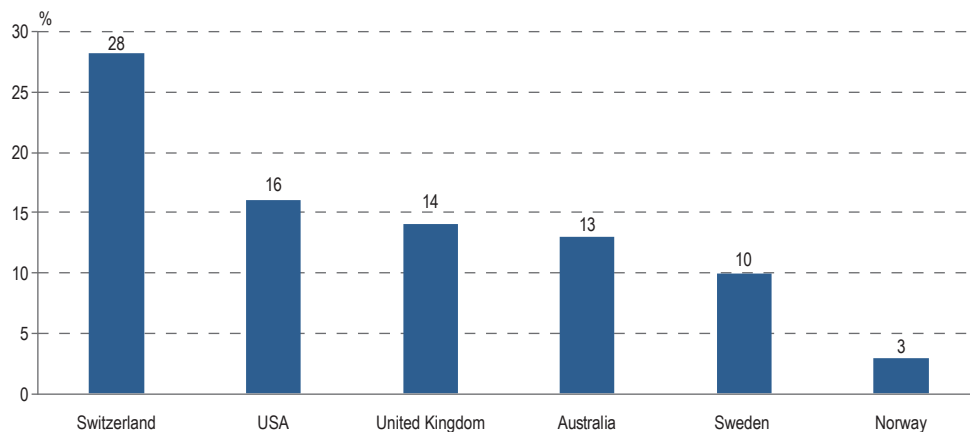
<sup>49</sup> *UK Payment markets Summary 2023*, UK Finance, September 2023.

<sup>50</sup> *Retail payment ...*, op. cit., p. 19–20.

<sup>51</sup> Data of Sveriges Riksbank, <https://www.riksbank.se/globalassets/media/statistik/betalningsstatistik/2023/numerical-data-payments-patterns-in-sweden-2023.xlsx> [accessed: 29 May 2024].

<sup>52</sup> *Payments Report 2024*, Sveriges Riksbank, p. 10.

<sup>53</sup> Data of Sveriges Riksbank, <https://www.riksbank.se/globalassets/media/statistik/betalningsstatistik/2023/numerical-data-payments-patterns-in-sweden-2023.xlsx> [accessed: 29 May 2024].

**Figure 3.8.** Share of cash in the number of payments in selected countries worldwide in 2023

Source: study of the NBP Cash and Issue Department based on the publication: University of St. Gallen, FED, Norges Bank, Bank of England, Sveriges Riksbank on payment habits in 2023.

Figure 3.8 illustrates the share of cash in payments in the selected countries described above.

Examples from European countries and the United States indicate the growing importance of cash as a means of storing value held for precautionary purposes, primarily in crisis and contingency situations.

### 3.2.3. Access to cash

From the perspective of cash users, the network of points where they can obtain cash is important. In various countries around the world, the general trend shows a shrinking network of traditional cash access points (ATMs, bank branches, in some countries also post offices), with the emergence of “modern” forms of cash withdrawal (cash back, cash in store). However, the popularity of various outlets where an individual can withdraw cash is largely dependent on market structure and cultural issues.

In 2023, three quarters of respondents to the Banco de España’s survey<sup>54</sup> and two thirds of respondents to the Reserve Bank of Australia’s survey<sup>55</sup> declared they most often withdrew cash from an ATM. The results of the Spanish survey also indicate a low awareness of cash back services: only 14% of respondents-natural persons were aware of this service, while only 3% of respondents to the 2023 survey declared that they had used this service in the previous year. Only 2% of Spanish shopkeepers surveyed said they offered such a service, and the percentage interested in offering such a service in the future was only 5%. Even lower levels of use of cash services were characterised by withdrawals at post offices: although 22% of respondents-natural persons were aware of such a service, only 2% had used it in the previous year.<sup>56</sup>

<sup>54</sup> L. Barreiro, F. Ferrando, D. Posada, *Cash use, access and acceptance...*, op. cit.

<sup>55</sup> J. Mulqueeney, T. Livermore, *Cash Use and Attitudes...*, op. cit.

<sup>56</sup> *Study on cash use habits. 2023 Executive report*, Ipsos & Banco de España, October 2023.

Although Norway is the country with the lowest use of cash for payment purposes, an increase in ATM withdrawals has occurred in recent years. In terms of volume, there were 17 million ATM withdrawals in Norway in 2022 and 11.5 million withdrawals at cash back and other points offering similar methods of cash acquisition (cash in store). However, when comparing the results of 2021 and 2022, it should be noted that, despite the short period, the number of ATM withdrawals in Norway increased by 8% compared to 2021, while the number of withdrawals at cash back points increased by 4% compared to 2021.<sup>57</sup>

The decreasing use of cash in transactions results in a relatively rapid reduction in the network of cash access points in Norway. The number of bank branches with cash desk service in Norway decreased from 87 at the end of 2021 to 56 a year later. At the same time, the multi-year downward trend in the number of bank branches with cash desk service and ATMs in Norway continued in 2022. The network of machines allowing cash depositing and withdrawal was also relatively limited: at the end of 2022, there were 878 ATMs, 98 deposit machines and 353 machines combining depositing and withdrawal functions in Norway.<sup>58</sup>

Trends towards reducing the cash access network are also observed in Sweden. By the end of 2023, Sweden's main commercial banks have ceased providing cash services in their branches. Cash withdrawal and depositing services at the bank's branches are only offered by so-called savings banks in 126 branches. The possibility to withdraw cash is offered by approximately 3,300 withdrawal points, including ATMs and a chain of shops offering cash withdrawals through so-called cash in store.<sup>59</sup>

When planning travel to countries recognised as cashless, it should be taken into account that in these countries access to and acceptance of cash may be limited.<sup>60</sup>

#### 3.2.4. The future of cash

Crisis events and increased uncertainty in the social and economic environment have driven societies to redirect their attention towards cash over recent years. Consequently, negative opinions on the potential withdrawal of cash from circulation prevail in the majority of countries, regardless of the role of cash in payments or the cultural attachment to cash in a given country.

In Switzerland, in May 2023, the percentage of people negatively assessing the resignation from cash reached 67.1%, i.e. 5.1 percentage points higher than in the previous survey. At the same time, only 17% of respondents supported restrictions in cash transactions, while 16% had no opinion.<sup>61</sup> Respondents from Germany present a similar opinion. The results of the Deutsche Bundesbank survey have confirmed that for 7 out of 10 respondents it was important that they, and society as a whole, continue to have the option of paying in cash

---

<sup>57</sup> *Retail payment...*, op. cit., pp. 13–15.

<sup>58</sup> *Retail payment...*, op. cit., pp. 13–15.

<sup>59</sup> *Payments Report 2024*, Sveriges Riksbank, pp. 16–17.

<sup>60</sup> Central bank announcements: <https://www.norges-bank.no/en/news-events/news-publications/News-items/2023/2023-06-08-exchange-nok/>, <https://www.riksbank.se/sv/press-och-publicerat/nyheter-och-pres-smeddelanden/nyheter/2023/vaxling-av-svenska-sedlar-utomlands/>, <https://www.nationalbanken.dk/en/frequently-asked-questions/exchange-of-danish-cash/>, [accessed: 23 May 2024].

<sup>61</sup> S. Graf, N. Heim, T. Truetsch, *Swiss Payment Monitor 2023...*, op. cit., pp. 6–8.

in the future. Only approximately 17% of respondents had a positive opinion about the vision of a world without cash.<sup>62</sup>

In some countries, particularly where cash acceptance is not a legal obligation for entrepreneurs, the limitation of the network of cash acceptance points can be an impediment for cash users. This is indicated by the result of the Sveriges Riksbank's survey, in which respondents were asked if they had wanted to pay cash in a shop in the month preceding the survey, but had been refused. In the month under review, 51% of respondents experienced at least one refusal to accept payment in cash, of which 8% experienced this refusal at least once a week. At the same time, respondents were asked about their opinion on the decline in the use of cash in Sweden: 44% of respondents negatively assessed this phenomenon (as very negative or rather negative) and only 27% recognised it as positive (rather positive or very positive). Concerns about the elimination of cash from the economy are also worth mentioning: 31% of respondents to the Swedish survey answered that they would not manage without cash.<sup>63</sup>

Questions about the future of cash, its form and its role remain on the agenda of many central banks, while surveys conducted in various countries around the world indicate that cash will remain an important element in economies. Analyses carried out in the United States led their authors to conclude that the number of cash payments has stabilised at the level of seven payments per month. According to the authors, such stabilisation supports the hypothesis of a cash base level in the economy, resulting from the fact that consumers wish or need to make certain specific payments using cash. It also turns out that American society is not determined to eliminate cash. When asked whether they plan to abandon using cash, respondents in the major part (92%) declare that they do not plan to cease using cash, with only 5% of respondents saying they had already stopped using cash.<sup>64</sup>

Respondents to the Deutsche Bundesbank survey also do not anticipate abandoning cash. While approximately 70% of respondents expect an overall decline in the use of cash in the economy, only approximately 28% of respondents expect that their own cash use will decrease in the future.<sup>65</sup> The analysis conducted by Deutsche Bundesbank also referred to potential changes in the role of cash in the economy of the future, and the results indicate that the vision of a world without cash in 15-20 years' time is unrealistic. The simulation conducted in three variants, involving various actors including cash users, considers scenarios of a return to cash, the hyper-digitisation of payments and the hybrid co-occurrence of different means of payment. Importantly, in each of these scenarios, cash will continue to be present in the economy in 2037, although its share of payments will vary significantly.<sup>66</sup> The analyses and simulations undertaken regarding the future of cash are intended to determine hypothetical scenarios for cash evolution and do not constitute forecasts, in particular, in relation to the abandoning of cash.

---

<sup>62</sup> *The outlook for cash – a systematic look at the future of cash*, Deutsche Bundesbank Monthly Report, January 2024, pp. 31–49.

<sup>63</sup> Data of the Bank of Sweden (Sveriges Riksbank) <https://www.riksbank.se/globalassets/media/statistik/betalningsstatistik/2023/numerical-data-payments-patterns-in-sweden-2023.xlsx> [accessed: 29 May 2024].

<sup>64</sup> B. Bayeh, E. Cubides, S. O'Brien, 2024 *Findings from the Diary...*, op. cit., p. 10.

<sup>65</sup> *The outlook for cash...*, op. cit.

<sup>66</sup> *The outlook for cash...*, op. cit.

### 3.3. Overview of regulatory activities in the area of cash acceptance and availability in selected countries<sup>67</sup>

In an era of the declining role of cash in payment transactions, the decreasing number of bank branches, with, however, the steadily increasing value of cash in circulation and people's belief expressed in surveys that the ability to continue using cash freely is essential, the need to ensure the acceptance and availability of cash has been recognised in many countries. Besides measures or initiatives based on cooperation between market stakeholders, e.g. in the form of agreements with professional cash market participants, measures of a regulatory nature are more and more frequently proposed or implemented in the area of cash availability or acceptance.

Legislative work is in progress in the euro area to strengthen the role of euro banknotes and coins as legal tender and to ensure acceptance and access to cash. In June 2023, a *Draft Proposal for a Regulation of the European Parliament and of the Council on the legal tender of euro banknotes and coins* was presented.<sup>68</sup> The draft aims to strengthen the status of euro banknotes and coins as legal tender as defined in Article 128(1) of the Treaty on the Functioning of the European Union. The status of cash as legal tender means that in accordance with the aforementioned draft, it must be accepted at a full face value, with the power to redeem monetary liabilities. The draft regulation provides for the prohibition of imposing additional charges for the settlement of liabilities using euro banknotes and coins or the refusal of acceptance of euro cash transferred to a payee within the payment unless the parties have agreed on a different means of payment or an exemption applies. The draft also defines the conditions under which a refusal to accept euro cash would be possible in legal terms – it must take place in good faith, result from legitimate reasons and be compliant with the principle of proportionality in light of the specific circumstances under which the payment shall be made. The burden of proof that these conditions have been met in the case of good faith shall be borne by the payee. Two legitimate reasons were identified when it would be possible to refuse the acceptance of euro cash, namely in the case of offering banknotes with a value clearly disproportionate to the value of the amount to be settled and in exceptional cases where the company does not have enough cash at a certain time to give change as part of its standard transactions. The draft also provides for monitoring by euro area Member States of the acceptance of cash payments and the level of unilateral refusals to accept cash payments on an *ex ante* basis across their respective territories on the basis of common indicators adopted by the Commission, the presentation of an annual assessment of cash acceptance and availability to the Commission and the European Central Bank, as well as the introduction of potential remedial measures.

As part of the country-specific legislative measures, it should be noted that in 2023, the central bank of Hungary introduced by way of a decree<sup>69</sup> the obligation for credit institutions to maintain a network of ATMs across the country. This obligation shall not apply to those

<sup>67</sup> Information presented in this section as at May 2024.

<sup>68</sup> Proposal for a Regulation of the European Parliament and of the Council on the legal tender of euro banknotes and coins, COM(2023) 364, 28.06.2023, <https://eur-lex.europa.eu/legal-content/ENG/TXT/PDF/?uri=CELEX:52023PC0364>.

<sup>69</sup> MNB Decree No 1/2023 (I. 17.) of the Governor of the Magyar Nemzeti Bank on the processing and distribution of banknotes and on technical tasks relating to the protection of banknotes against counterfeiting, decree available at the MNB website: <https://www.mnb.hu/en/banknotes-and-coins/regulatory-environment/banknote-and-coin-decrees>.

institutions where the share in the number of payment cards with a cash withdrawal function issued in the previous year did not exceed 1%. For institutions exceeding this threshold, the Hungarian central bank defined four categories depending on the number of payment cards issued (up to 600,000, above 600,000 to 1.2 million, above 1.2 million to 2.4 million and above 2.4 million cards issued). For each category, the expected average number of ATMs that should be available was broken down by three groups of settlements: capital districts, county seat cities, other settlements in the county. In addition, the regulations introduced provide that major credit institutions issuing payment cards must operate ATMs in a certain percentage of urban settlements other than county seats on a mandatory basis. According to the turnover-based condition, the average annual turnover of cash withdrawals per ATM and the average annual turnover of cash deposits per ATM with a deposit function must not exceed the thresholds set by the central bank of Hungary. If the average turnover exceeds the threshold, the ATM network must be expanded.

Also in Ireland, a draft regulation on cash availability has been developed. In January 2024, Ireland's Minister for Finance published<sup>70</sup> the *Access to Cash Bill 2024 General Scheme* adopted by the Government. The regulation aims to maintain a reasonable level of access to cash within the country at a level not worse compared to 2022, to develop a framework to manage changes in access to infrastructure in a fair and transparent manner, and to bring ATM operators and CITs under the regulation of the central bank of Ireland as part of protecting access to cash.<sup>71</sup> The criteria for access to cash shall be set by way of regulations issued by the Irish Minister of Finance as:

1. the recommended percentage of the population within a 10 km distance of an ATM where cash withdrawals can be made,
2. the number of ATMs per 100,000 inhabitants,
3. a recommended percentage of the population within a 10 km distance of a cash access point (cash deposits and withdrawals).

Other provisions of the aforementioned regulations are intended to provide the central bank of Ireland with the power to adopt regulations on matters such as reporting, setting service standards and, for example, maintaining stocks in different denominations. The central bank of Ireland will also be granted powers to protect the resilience of the cash system, including the powers to authorise and supervise cash-in-transit companies in the scope of their activity related to cash handling and financial services.<sup>72</sup>

In order to improve customer access to cash in Belgium, another agreement on ATM access was concluded in spring 2023 between the Belgian Federal Government, represented by the Minister of Economy, the Minister of Finance, the Secretary of State for Consumer Protection and the Belgian federation of the financial sector, Febelfin and Batopin. This agreement provides for, among others<sup>73</sup>:

---

<sup>70</sup> <https://www.gov.ie/en/press-release/43af7-minister-mcgrath-secures-government-approval-for-access-to-cash-legislation/>.

<sup>71</sup> *Access to Cash Bill 2024 General Scheme*, <https://www.gov.ie/en/publication/377b2-access-to-cash-general-scheme/>.

<sup>72</sup> *Ibidem*.

<sup>73</sup> <https://economie.fgov.be/fr/themes/services-financiers/services-de-paiement/acces-aux-distributeurs>.

- installing 207 additional ATMs across the country by the end of 2025,
- maintaining or improving ATM deployment rates in certain regions compared to 2021,
- maintaining or creating a total of 80 ATMs in strategic locations to provide easier access to cash for residents in the most populated municipalities,
- maintaining 24 free transactions of cash withdrawal transactions from ATMs per year for each consumer, regardless of the ATM network affiliation,
- the availability of at least one ATM in each municipality, accessible 24 hours a day, 7 days a week, including to people with disabilities,
- equipping at least every second ATM with a cash deposit function to ensure that at least 85% of the population has access to an ATM within a maximum distance of 5 km.

In the Netherlands, in April 2022, stakeholders in the payment industry<sup>74</sup> agreed to conclude a five-year cash covenant which determines voluntary measures to improve the quality of cash services.<sup>75</sup> However, a May 2023 report commissioned by the Dutch central bank (DNB) and the Ministry of Finance indicated that voluntary agreements are not sufficient and regulations are necessary. Consequently, after the consultations in the first half of 2023, a draft of the Act on cash payments was prepared. The regulations drafted are intended to ensure that cash is available and determine its adequate cost. To that end, the following measures have been proposed<sup>76</sup>:

- the largest banks in the Netherlands (those with more than 50,000 accounts) would be required to provide the basic cash infrastructure within the country<sup>77</sup>,
- rules would be determined for the fees that the bank charges customers or the conditions that the bank may impose on customers (resident or established in the Netherlands) for the use of basic cash facilities,
- DNB would be obliged to monitor cash transport in order to mitigate the risk of interruption of the provision of cash services in connection with the transportation of cash mainly by one service provider,
- DNB would be responsible for supervising the compliance with the obligations set out in the Act, including the imposition of sanctions, together with monetary fines.

In Sweden, which has seen a trend of declining cash circulation over the past two decades and where the public is increasingly using digital payments, the need to provide access to

---

<sup>74</sup> 23 payment industry institutions – including major banks, the Dutch Payments Association, consumer representatives, retailers, the hospitality industry and petrol stations, as well as cash service providers and De Nederlandsche Bank (DNB).

<sup>75</sup> <https://www.dnb.nl/en/general-news/press-release-2022new-covenant-lays-down-agreements-on-proper-functioning-of-cash/>.

<sup>76</sup> <https://cashpaymentnews.com/news/2024/feb/20/2024-year-protecting-cash/>.

<sup>77</sup> The largest Danish banks (ABN AMRO, ING and Rabobank) are already implementing this through the Geldmaat joint venture.

cash for citizens has also been recognised. Since January 2021, regulations<sup>78</sup> have been in force committing the largest banks in Sweden<sup>79</sup> providing consumers with payment account services with core functions to ensure cash withdrawal facilities from these accounts, i.e. cash withdrawal locations in sufficient numbers throughout the country. The obligation to provide cash services does not extend to the provision of deposit services to consumers. On the other hand, banks providing payment account services to companies are required to ensure deposit facilities for daily receipts. The Swedish Post and Telecommunications Authority (Post- och telestyrelsen) supervises banks' compliance with their obligations in this regard. If banks fail to comply with these obligations, Finansinspektionen (the Swedish Financial Supervision Authority) can order the institution concerned to take remedial measures and impose a fine.

In order to continue the strengthening of cash access efforts in Sweden, the role of the state in the payments market in the period from 2020 to 2023 was analysed in the context of significant changes that took place in the past and may take place in the future. In March 2023, the Payments Commission presented its report "The State and the Payments", which proposed that the role of the Swedish krona as legal tender should be strengthened in legislation by, among other things:

- introducing the principle that a creditor or other payee should be obliged to accept means of payment that are recognised as legal tender, unless otherwise agreed or required by law;
- committing public institutions or publicly funded service providers to accept legal means of payment as part of the fees and tributes they collect, provided that the legal relationship between the parties is of a public law nature and applying a threshold of up to 0.25 of the base amount<sup>80</sup> and a maximum of 50 coins per transaction.<sup>81</sup>

In October 2023, the central bank of Sweden (Sveriges Riksbank) presented its consultative response to the aforementioned report, indicating that there were already problems with cash and cash handling prompting an immediate tightening of the regulations to protect the cash position and access to cash services.<sup>82</sup> The Riksbank's position is that the state should play a more active role in the payment system and that cash regulations should be tightened immediately. In justifying its position, the Riksbank indicated that cash is an important link in the state's area of preparedness for emergencies, such as power or telecommunications network shutdown. It is therefore important that retailers are committed to accept cash as a form of payment for necessities such as pharmacy products, fuel, food or beverages.<sup>83</sup> The Riksbank also recognises the role of cash as an important element in preventing digital and financial exclusion.

---

<sup>78</sup> Chapter 9 of the Act on Payment Services: <https://www.riksbank.se/en-gb/payments--cash/notes--coins/obligation-for-major-banks-to-provide-certain-cash-services/>.

<sup>79</sup> Holding more than SEK 70 billion in deposits from the general public on 1 July of the preceding year.

<sup>80</sup> For 2024, this is SEK 57,300, Sweden Statistics: <https://www.scb.se/en/finding-statistics/statistics-by-subject-area/prices-and-consumption/consumer-price-index/consumer-price-index-cpi/pong/tables-and-graphs/price-basic-amount/price-base-amount/>.

<sup>81</sup> *The state and the payments*, Summary of the report of Betalningsutredningen, Swedish Government Official Reports SOU 2023:16, Stockholm 2023.

<sup>82</sup> <https://www.riksbank.se/en-gb/payments--cash/the-riksbanks-task-in-relation-to-payments/payments-inquiry--the-states-role-in-the-payment-market/>.

<sup>83</sup> <https://www.riksbank.se/en-gb/press-and-published/notices-and-press-releases/press-releases/2023/political-decisions-needed-urgently--so-that-everyone-can-pay/>.

On the other hand, in the United Kingdom, through amendments to the Financial Services and Capital Markets Act introduced in 2023, Parliament strengthened the legal framework for the Financial Conduct Authority (FCA), the body responsible for supervising and regulating firms offering financial services of all kinds to UK citizens. The strengthening covered the area of efforts to ensure reasonable availability of cash depositing and withdrawal services for personal and corporate current accounts in the United Kingdom or parts thereof.<sup>84</sup>

The FCA has proposed new rules to ensure reasonable access to cash for personal and business customers across the United Kingdom. In accordance with the FCA proposals, designated banks and building societies will have to identify gaps in access to cash. These assessments will need to take into account local factors such as demographics and the transport network. Where companies identify gaps in this area, they will need to take action to ensure that these needs are satisfied. In the United Kingdom, more than 3 million consumers and many small businesses still rely on cash which, as payment innovations develop, creates the need to support these groups.

In accordance with the aforementioned proposals, designated companies would be required to:

- carry out cash access assessments when introducing changes to cash access services to understand whether additional services are needed to address local gaps,
- respond to requests from local residents, community organisations and local authority representatives to consider, assess and fill gaps,
- provide reasonable additional cash services where a significant local gap is identified,
- ensure that they maintain cash facilities, including bank branches, until the additional cash services necessary are available.

The FCA's new powers do not block the closure of bank branches. However, the rules will have an impact where branches are a key local source of cash. The FCA will supervise the convergence of these rules with the existing guidelines on bank branch closures. The market consultation in the scope of new rules was carried out until 8 February 2024. The FCA has announced the finalisation of the rules by Q3 2024.<sup>85</sup>

Referring to the efforts undertaken in other countries, it should also be pointed out that in the United States of America, the Payment Choice Act of 2023 was resubmitted<sup>86</sup> to Congress in June 2023. If the bill is passed, the role of the US currency will be strengthened, which should be treated as legal tender throughout the country, while every consumer will have the right to use cash as a form of payment at retail outlets which will be required to accept cash payments at locations with services provided by the personnel.<sup>87</sup> The draft indicates that any such payment, including but not limited to transactions initiated by phone, email

---

<sup>84</sup> <https://www.fca.org.uk/news/press-releases/fca-sets-out-new-rules-maintain-access-cash-increasingly-digital-world>.

<sup>85</sup> <https://www.fca.org.uk/news/press-releases/fca-sets-out-new-rules-maintain-access-cash-increasingly-digital-world>.

<sup>86</sup> <https://www.atlantafed.org/blogs/take-on-payments/2022/10/24/payment-choice-act-and-what-it-means-for-cash>.

<sup>87</sup> <https://www.congress.gov/bill/118th-congress/senate-bill/1984/text>.

or online with personal service at a physical location may be made in cash up to the amount of USD 500 and will not be subject to an additional fee. The draft provides for exemptions to the cash acceptance obligation, which include, among others, the inability to accept cash due to a temporary system failure, a temporary lack of sufficient cash, or the provision by the entrepreneur of a device that converts cash to a prepaid card (free of charge, non-expiring, ensuring consumer anonymity, with a minimum deposit amount of more than USD 1). At the same time, according to the draft, a provision will be introduced 5 years after the law comes into force that exempts from the obligation to accept banknotes with a face value of USD 50 or more as part of a cash payment.<sup>88</sup> After two readings, the draft was referred to the *Committee on Banking, Housing, and Urban Affairs*.<sup>89</sup>

In terms of cash access infrastructure, it is also worth noting the efforts undertaken in New Zealand. In December 2023, the Federal Reserve Bank of New Zealand, as part of its efforts to ensure the availability of cash announced pilot projects (the so-called cash trials) in rural communities with a deficit of cash services (cash branches or ATMs) from commercial banks. The aim of the pilot projects is to identify new forms of support for individuals and retail businesses in accessing and depositing cash.<sup>90</sup> The Federal Reserve Bank of New Zealand will cover the cost of the pilot projects which are expected to cover four areas:<sup>91</sup>

- centres (hubs) for cash recirculation, equipped with ATM machines for banknotes and coins,
- centres (hubs) not intended for cash recirculation but for cash supply, fed by CIT companies,
- a service of a bulk safe installed in the back office for use by multiple retailers,
- a dedicated CIT company service, in the case of individual vendor contracts with CIT companies.

The Federal Reserve Bank collected requests from municipalities to launch pilot projects until 11 June 2024.<sup>92</sup> The launch of pilot projects is expected between September 2024 and February 2025 in approximately 6–9 municipalities located in 2–3 different parts of the Aotearoa region. The selection of municipalities will be performed after the applications have been reviewed and the so-called shortlist has been defined. The project is designed for municipalities with a population from 1,000 to 10,000 inhabitants, where residents have lost access to most or all cash services offered by banks.

---

<sup>88</sup> The draft was first submitted on 9 July 2021 and sponsored by Congress Representative, Donald M. Payne Jr. (D-New Jersey). It aimed to “prohibit retail businesses from refusing to accept cash payments”. The bill was passed twice by the House of Representatives: first on 21 June 2022 as an amendment to the Financial Services Racial Equity, Inclusion, and Economic Justice Act and on 14 July 2022 as an amendment to the National Defence Authorization Act. The draft did not go through further legislative process.

<sup>89</sup> <https://www.congress.gov/bill/118th-congress/senate-bill/1984/all-actions>.

<sup>90</sup> <https://www.rbnz.govt.nz/hub/news/2023/11/reserve-bank-community-cash-trials-to-start-next-year>.

<sup>91</sup> <https://cashpaymentnews.com/news/2024/feb/20/2024-year-protecting-cash/>.

<sup>92</sup> <https://www.rbnz.govt.nz/money-and-cash/future-of-money/cash-system-redesign/community-cash-service-trials> [access: 20 June 2024].

## Chapter 4

---

# Characteristics of cash circulation in Poland

# Characteristics of cash circulation in Poland

## 4.1. Cash circulation and its participants

Cash circulation means monetary settlements performed using banknotes and coins. Cash circulation in Poland is regulated by law and created by entities that play different roles therein. The main participants of cash circulation include: NBP, banks and producers of banknotes and coins, CIT companies processing banknotes and coins on behalf of banks, ATM network operators, retail chains and customers, including natural persons (consumers).

NBP, as a participant that plays a significant role in cash circulation, in particular, organises the management of banknotes and coins of the Republic of Poland, including placing orders for the production of banknotes and coins with manufacturers, supplies banks with Polish currency banknotes and coins, exchanges banknotes and coins that, due to wear and tear or damage, cease to be legal tender in the territory of the Republic of Poland, and destroys Polish currency banknotes and coins unfit for circulation. The Governor of NBP issues regulations concerning cash circulation addressed to banks, as well as regulations concerning the putting of banknotes or coins of the Polish currency into circulation or concerning their withdrawal from circulation.

Banks accept cash deposits from customers to bank accounts and make cash withdrawals from these accounts. Moreover, banks exchange coins and banknotes which, due to wear and tear or damage, cease to operate as legal tender in the territory of the Republic of Poland.

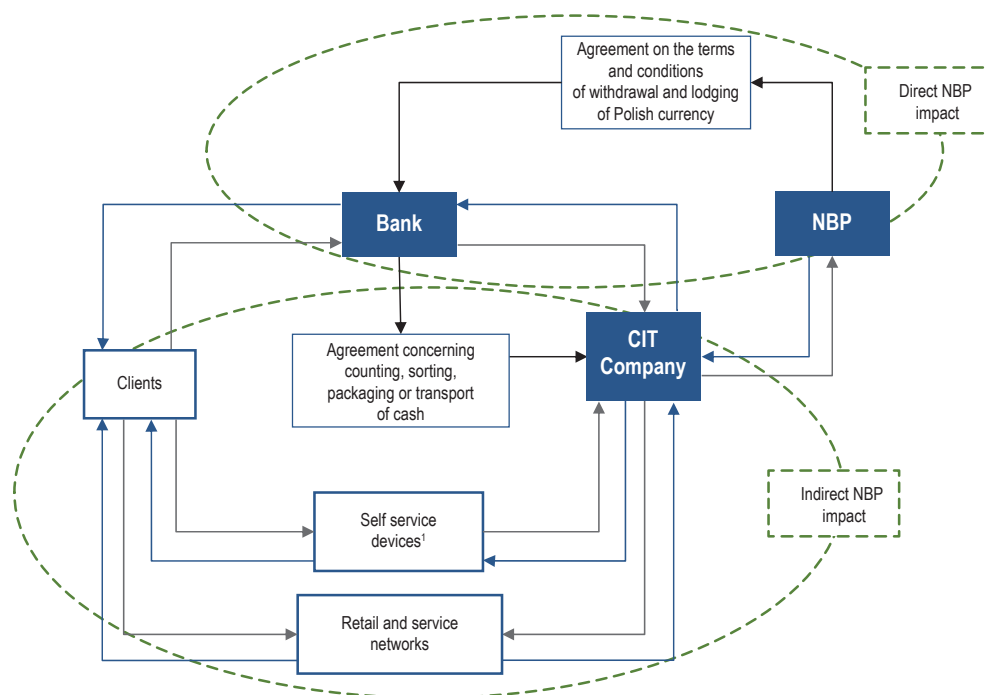
CIT companies process banknotes and coins on behalf of banks when a bank has outsourced counting, sorting, packaging and labelling the packages of banknotes and coins. These are real activities related to banking activities within the meaning of Article 6a(1)(2) of the Act on Banking Law.

Banknotes and coins in Polish currency withdrawn from NBP by banks or CIT companies operating on their behalf are supplied to cash centres of banks or CIT companies processing banknotes and coins on behalf of banks and subsequently delivered to consumers via bank branches, ATM networks and retail chains.

From customers, via large retail chains and self-service machines, Polish currency banknotes and coins are delivered to the cash centres of banks or CIT companies that process banknotes and coins on behalf of the banks, and subsequently the banks or CIT companies acting on their behalf lodge them with NBP.

A graphical cash cycle is shown in Diagram 1.

**Diagram 1.** Cash cycle in Poland



<sup>1</sup> Devices for depositing and withdrawal of cash.

Source: study of the NBP Cash and Issue Department.

## 4.2. Legal framework of cash circulation

The most important legal acts regulating cash circulation in Poland include:

- Constitution of the Republic of Poland – Article 227(1),
- Act on Narodowy Bank Polski – Article 4, Articles 31–37,
- Act on Banking Law – Article 6a(1)(2), Article 63, Articles 65 and 66 and Article 68(2),
- Act on Payment Services – Article 59(ea),
- Regulation of the Minister of Interior and Administration of 7 September 2010 concerning the requirements to be met by the protection of monetary values stored and transported by entrepreneurs and other organisational entities (Journal of Laws of 2016, item 793, as amended),
- Regulation of the Minister of Justice of 7 April 2022 on banknotes and coins of suspicious authenticity and counterfeit banknotes and coins (Journal of Laws, item 776),

- Ordinance No. 19/2016 of the Governor of Narodowy Bank Polski of 17 August 2016 on the method and procedure to be used in counting, sorting, packaging and labelling packages of banknotes and coins, and in conducting activities related to the supply of banknotes and coins to the banks (Official Journal of NBP of 2020, item 28, as amended),
- Ordinance No. 31/2013 of the Governor of Narodowy Bank Polski of 17 December 2013 amending the ordinance on detailed rules and procedures for the replacement of coins and banknotes which, due to wear and tear or damage, cease to operate as legal tender in the territory of the Republic of Poland (Official Journal of NBP of 2022, item 23, as amended).

### 4.3. Obligation to accept cash payments

Since 5 November 2021, a statutory obligation for universal cash acceptance has been in force in Poland. Earlier legal regulations did not define the unconditional obligation to accept cash payments by entities conducting business in the territory of the Republic of Poland.

This obligation was introduced in Article 59(ea) of the Act on Payment Services of 19 August 2011. In accordance with it, a merchant (a payee other than a consumer to whom a settlement agent provides a payment service) may not make the conclusion of a sales or service agreement with a consumer conditional on payment being made exclusively in non-cash form or refuse to accept payment from a consumer with banknotes and coins issued by NBP. Consequently, on the territory of the Republic of Poland, any consumer can pay in cash, i.e. by banknotes and coins. However, the inability of a merchant to refuse cash acceptance is not unconditional, since appropriate exemptions are foreseen on that matter, i.e.:

- in the case of online activities carried out by a merchant,
- in the case of activities carried out on site without the presence of staff,
- during a mass event, provided that this is specified in its regulations,
- in respect of a one-off transaction whose value is equal to or greater than the average wage in the corporate sector.

At the same time, a prohibition was introduced on merchants imposing additional charges for the obligation to accept cash payments and a prohibition on differentiating the price of goods or services offered on the basis of the form of payment (cashless or cash).

In implementing the National Strategy for Cash Circulation Security, NBP monitors the effects of the adopted regulation with a view to taking potential further action (see subsection “3.1. Trends observed in Poland” and “4.6.1. National Strategy for Cash Circulation Security”).

### 4.4. Amendments to cash circulation regulations in 2023

The most important regulations that entered into force in 2023 or were initiated in the area of cash circulation are presented below by topic.

#### 4.4.1. Cash payments

The Act of 16 June 2023 amending the Act amending the Act on Personal Income Tax, the Act on Corporate Income Tax and Certain Other Acts and the Act on Flat Rate of Income Tax on Certain Income Earned by Natural Persons (Journal of Laws, item 1414) repealed the provisions that, as of 1 January 2024, were to introduce a limit on cash payments between a consumer and an entrepreneur (PLN 20,000) or change the limit on cash payments between entrepreneurs (from PLN 15,000 to PLN 8,000).

From 1 January 2024, consumers will still be able to carry out transactions with businesses in cash, regardless of the amount, while the cash payment limit of PLN 15,000 in business-to-business transactions has been retained.

#### 4.4.2. Protection of monetary values

In 2023, the Minister of Interior and Administration amended the regulation amending the regulation concerning the requirements to be met by the protection of monetary values stored and transported by entrepreneurs and other organisational entities twice:<sup>93</sup>

1. in September 2023,<sup>94</sup> it extended to 1 January 2024 *vacatio legis* for legislation introducing additional requirements related to the IBNS; these requirements were due to enter into force on 24 September 2023;
2. in December 2023,<sup>95</sup> it permitted the continued use of specialised containers meeting the technical conditions for the transport of banknotes and coins under the existing regulations, using the existing limits of the calculation units and the required documentation.

#### 4.4.3. Replacement of banknotes and coins

In the second half of 2023, work was commenced on an amendment to Ordinance No. 31/2013 of the Governor of Narodowy Bank Polski of 17 December 2013 concerning detailed rules and procedures for the replacement of coins and banknotes which cease to operate as a legal tender on the territory of the Republic of Poland (Official Journal of NBP of 2022, item 23), among others, to further improve the process of replacing banknotes damaged in a way that indicates that the banknote neutralisation system has been triggered.

---

<sup>93</sup> Regulation of the Minister of Interior and Administration of 15 September 2021 amending the regulation concerning the requirements to be met by the protection of monetary values stored and transported by entrepreneurs and other organisational entities (Journal of Laws, item 1739).

<sup>94</sup> Regulation of the Minister of Interior and Administration of 14 September 2023 concerning the requirements to be met by the protection of monetary values stored and transported by entrepreneurs and other organisational entities (Journal of Laws, item 1947).

<sup>95</sup> Regulation of the Minister of Interior and Administration of 12 December 2023 concerning the requirements to be met by the protection of monetary values stored and transported by entrepreneurs and other organisational entities (Journal of Laws, item 2762).

On 9 April 2024, Ordinance No. 9/2024 of the Governor of Narodowy Bank Polski of 9 April 2024 amending the ordinance on detailed rules and procedures for the replacement of coins and banknotes which, due to wear and tear or damage, cease to operate as legal tender in the territory of the Republic of Poland was published in the Official Journal of Narodowy Bank Polski.

Since 1 May 2024, banknotes damaged in a way that indicates that the intelligent banknote neutralisation system has been triggered are treated as follows:

1. banknotes disclosed in lodgements from banks are transferred by NBP Regional Branches to the NBP Head Office for replacement,
2. banknotes accepted for replacement from professional cash handlers are replaced by NBP Regional Branches and, after the replacement is completed, the equivalent amount resulting from the replacement is transferred to the bank account of the entity presenting the banknotes for replacement,
3. banknotes accepted by NBP Regional Branches for replacement from customers other than professional cash handlers are forwarded by the branches for replacement to the NBP Head Office, which performs the exchange and notifies the Police Headquarters of the Capital City of a suspected offence,
4. banknotes paid in the form of a closed deposit or deposited in an ATM are transferred to the NBP Head Office for replacement.

#### **Box B. Examples of banknotes damaged by the banknote neutralisation system**

In December 2023, in view of the possibility of the appearance of banknotes in circulation with features indicating that they have been damaged by the banknote neutralisation system, NBP supplemented the information on the replacement of worn or damaged banknotes and coins posted on its website with the material “Examples of banknotes damaged by the banknote neutralisation system”. This material is intended to inform and educate, with the aim of mitigating the risk of the appearance of banknotes stained through the banknote neutralisation systems in the cash circulation market and of unauthorised circulation of these banknotes. The material also defines the method of proceeding by natural persons if they come into possession of the banknotes concerned and includes illustrative photos of banknotes stained by banknote neutralisation systems.

**Drawing B1.** Examples of stained banknotes posted on the NBP website



Source: Examples of banknotes damaged by the banknote neutralisation system, <https://nbp.pl/banknoty-i-monety/wymiana-zuzytych-lub-uszkodzonych-znakow-pienieznych/>.

#### 4.4.4. Counting, sorting of banknotes and coins

In the second half of 2023, the legislative work was also commenced in relation to the amendment to Ordinance No. 19/2016 of the Governor of Narodowy Bank Polski of 17 August 2016 on the method and procedure to be used in counting, sorting, packaging and labelling packages of banknotes and coins, and in conducting activities related to the supply of banknotes and coins to the banks (Official Journal of NBP of 2020, item 28), among others, to enhance cash circulation security.

On 9 April 2024, Ordinance No. 10/2024 of the Governor of Narodowy Bank Polski of 9 April 2024 amending the ordinance on the method and procedure to be used in counting, sorting, packaging and labelling packages of banknotes and coins, and in conducting activities related to the supply of banknotes and coins to the banks was promulgated in the Official Journal of Narodowy Bank Polski under item 3.

From 1 May 2024, customer-operated devices, as well as staff-operated devices, should be adjusted in such a way that banknotes with features indicating that they have been damaged by the banknote neutralisation system deposited into the device or withdrawn by the device

are qualified as either non-recognisable items as Polish currency banknotes or as banknotes suspected with regard to authenticity. If these banknotes are not recognised by a staff member as suspicious in terms of their authenticity, they are forwarded to NBP.

From 1 January 2025, customer-operated devices should be adapted to handle banknotes of all denominations (10, 20, 50, 100, 200 and 500 zł) to ensure that banknotes of all denominations can be withdrawn.

## 4.5. Reporting in the scope of cash circulation

Since 1 July 2018, banks with which NBP had concluded an agreement specifying the terms and conditions for the withdrawal and lodgement of Polish currency pursuant to the Ordinance No. 19/2016 have been obliged to submit quarterly reports to NBP, containing information on the counting and sorting of banknotes and coins and their subsequent recirculation, the number of devices operated by customers (e.g. cash deposit machines, recyclers) and devices operated by the bank's staff or by the staff of the entrepreneur to whom the bank has entrusted the processing of banknotes and coins (e.g. sorters).

### 4.5.1. Legal framework

As part of the guidelines defining the rules for accurate filing of reports, the "Guidelines concerning quarterly reporting related to the number of devices, counting and sorting of banknotes and coins and their recirculation" are available on the NBP website.

In accordance with the aforementioned instructions, banks:

- since 1 July 2018, have been obliged to include in their reports information on banknotes and coins:
  - put into circulation,
  - processed by devices, in the bank's sorting rooms and in sorting rooms of the undertakings commissioned by the bank for processing of banknotes or coins,
  - held on the last day of a given quarter: in the bank's cash desks, in the vaults of a bank and undertakings (including those received from another bank or from NBP) commissioned by the bank for the processing of banknotes or coins as well as in the bank's devices and equipment of independent operators;
- since 1 January 2020, in addition to the above information, banks have been obliged to include in the reports data on banknotes and coins processed at the bank's cash desks and subsequently put into circulation;<sup>96</sup>
- since 1 January 2022, they have been additionally obliged to report the share of manually processed banknotes in the total number of banknotes processed by the bank in a given quarter.

---

<sup>96</sup> The exceptions include the operations of the records of denomination of suspicious banknotes in terms of authenticity, exchanges and replacements carried out at partner establishments; data on operations carried out at banks' partner establishments are reported in value terms, according to a separate procedure.

The reports are submitted to NBP on a quarterly basis, by electronic means, via the Reporting Information System (SIS) Internet portal. The first report was submitted by the banks for 2018 Q3.

NBP uses the quarterly reporting, among others, to monitor market trends in the area of putting banknotes and coins into circulation by banks without the participation of NBP. The interpretation of data received within the reporting framework allows, among others, to assess the scale of recirculation of banknotes and coins, i.e. putting them back into circulation by banks without the participation of NBP. The trends in the scope of processing of banknotes and coins by market participants and the use of specialised equipment for this purpose is also analysed.

#### 4.5.2. Statistical data

The analysis of the data reported by banks in 2023<sup>97</sup> indicates a decline in the number of banknotes and coins processed and recirculated by cash circulation participants.

In 2023, the banks counted, sorted and checked for authenticity 8.4 billion banknotes, i.e. 5.8% less than in 2022. In 2023, the banks processed on average 2.1 billion banknotes per quarter – for comparison, the figure amounted to 2.2 billion pcs in 2022 (Table 4.1).

**Table 4.1.** Volume of banknotes processed in 2022 and 2023 in quarterly terms

Denomination	2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	2	3	4	5	6	7	8	9
500 zł	17 850 477	17 609 683	19 099 878	19 376 548	17 511 850	17 108 551	18 506 816	17 109 842
200 zł	360 003 357	414 758 769	446 448 586	456 600 568	421 429 794	451 263 029	476 433 991	458 431 254
100 zł	1 255 811 432	1 337 307 077	1 337 941 371	1 296 069 471	1 159 012 200	1 216 854 875	1 202 331 886	1 162 203 137
50 zł	288 924 475	300 610 956	289 879 190	276 331 619	251 841 193	260 467 308	266 785 687	261 423 067
20 zł	90 221 434	100 380 714	104 414 952	92 891 008	90 348 386	92 265 151	95 456 358	87 335 430
10 zł	110 769 687	114 017 750	111 599 395	109 285 951	103 169 494	108 136 370	105 924 496	102 569 690
Total	2 123 607 862	2 284 684 949	2 309 383 372	2 250 555 165	2 043 312 917	2 146 095 284	2 165 439 234	2 089 072 420
	8 968 231 348				8 443 919 855			

Source: study of the NBP Cash and Issue Department.

In parallel, a decline in the number of banknotes recirculated by banks was recorded. In 2023, this figure amounted to almost 6.0 billion pieces and fell by 7.6% compared to the previous year. The share of banknotes recirculated in the number of banknotes processed by banks in 2023 amounted to 70.9% (Table 4.2). In annual terms, a slight decline in this share of approx. 1.3 percentage points was noted.

<sup>97</sup> The Bank may at any time adjust its report for the selected quarter.

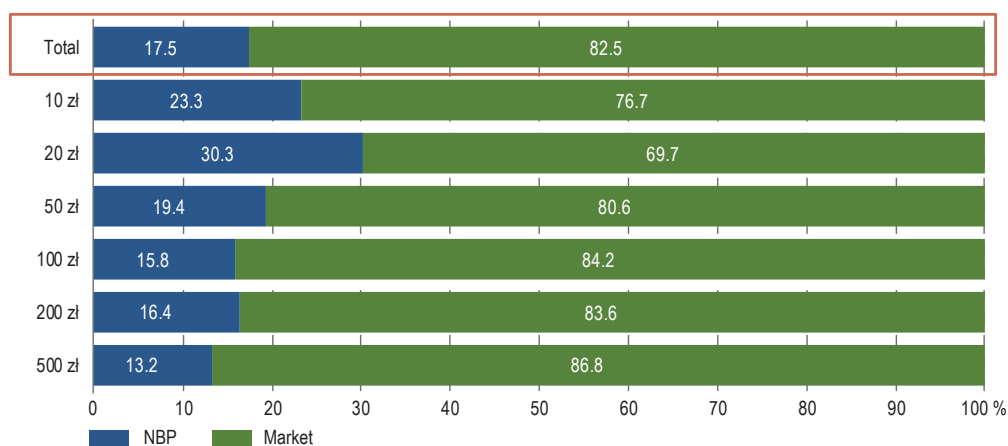
**Table 4.2.** Volume and share of banknotes recirculated in 2022 and 2023 based on quarterly data

Denomination	2022		2023	
	Number of banknotes recirculated	Ratio of the number of banknotes recirculated to the number of banknotes processed	Number of banknotes recirculated	Ratio of the number of banknotes recirculated to the number of banknotes processed
1	2	3	4	5
500 zł	49 987 151	67.61%	47 658 885	67.85%
200 zł	1 194 423 584	71.19%	1 222 422 743	67.63%
100 zł	3 959 822 432	75.76%	3 572 978 135	75.37%
50 zł	773 271 188	66.91%	700 652 011	67.34%
20 zł	269 994 148	69.60%	243 550 979	66.65%
10 zł	228 032 611	51.16%	197 455 406	47.04%
<b>Total</b>	<b>6 475 531 114</b>	<b>72.21%</b>	<b>5 984 718 159</b>	<b>70.88%</b>

Source: study of the NBP Cash and Issue Department.

In 2023, among all banknote denominations, 100 zł banknotes accounted for the highest volume of processed and recirculated banknotes (respectively: 56.1% and 59.7%). The subsequent most frequently processed and recirculated denominations included the following banknotes: 200 zł (21.4% and 20.4%, respectively) and 50 zł (12.3% and 11.7%, respectively). This means that 100 zł, 200 zł and banknotes with the denomination of 50 zł circulate, to a major extent, among market participants and are used for trading purposes. At the same time, 100 zł, 200 zł and 500 zł banknotes fulfil a store of value function.

Aggregate figures indicate that the processing of banknotes is largely carried out by the commercial sector. In 2023, its share of banknote processing reached 82.5% and was similar to 2022, when it amounted to 83.1%. The level of this share depends on the denomination (Figure 4.1).

**Figure 4.1.** Processing of banknotes in 2023 by denomination structure broken down into NBP and other market participants

Source: study of the NBP Cash and Issue Department.

The number of coins processed remains stable. In 2023, the volume of coins that banks counted, sorted and checked for authenticity remained at a level similar to 2022, i.e. close to 2.6 billion pcs. In 2023, banks processed an average of 0.6 billion coins per quarter (Table 4.3).

**Table 4.3.** Volume of coins processed in 2022 and 2023 in quarterly terms

Denomination	2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	2	3	4	5	6	7	8	9
5 zł	54 327 475	59 522 791	63 615 151	66 521 829	61 181 757	65 044 262	61 919 075	60 496 559
2 zł	92 826 088	100 888 322	97 897 035	98 680 617	100 485 443	100 025 178	95 365 015	93 677 063
1 zł	107 618 808	118 356 578	114 757 522	114 987 595	118 089 069	119 403 003	108 155 703	106 410 233
50 gr	53 993 392	58 471 383	56 074 720	56 960 670	60 277 631	62 352 073	60 916 099	56 497 740
20 gr	39 457 848	42 276 107	42 158 645	39 694 326	43 303 686	43 445 126	39 498 224	39 172 981
10 gr	60 163 708	63 348 585	58 330 933	56 569 240	67 795 569	67 026 779	62 895 631	61 194 272
5 gr	41 228 090	44 526 126	42 725 070	48 431 563	53 425 936	51 147 496	41 571 749	38 568 557
2 gr	49 161 005	55 757 292	53 467 618	55 793 653	63 895 575	59 713 095	45 409 491	44 548 746
1 gr	116 617 971	121 020 467	115 207 591	91 401 961	121 346 693	110 598 300	94 169 105	91 946 379
<b>Total</b>	<b>615 394 385</b>	<b>664 167 651</b>	<b>644 234 285</b>	<b>629 041 454</b>	<b>689 801 359</b>	<b>678 755 312</b>	<b>609 900 092</b>	<b>592 512 530</b>
	<b>2 552 837 775</b>				<b>2 570 969 293</b>			

Source: study of the NBP Cash and Issue Department.

On the other hand, in the case of recirculated coins, a slight decline in their volume can be noted. In 2023, this figure amounted to 1.3 billion pcs and was 8.3% lower compared to the previous year. The reports submitted show that at the end of 2023, 51.7% of processed coins were recirculated by banks, whereas a year earlier this figure was 56.8% (Table 4.4).

**Table 4.4.** Volume and share of coins recirculated in 2022 and 2023 based on quarterly data

Denomination	2022		2023	
	Number of coins recirculated	Ratio of number of coins recirculated to the number of coins processed	Number of coins recirculated	Ratio of number of coins recirculated to the number of coins processed
1	2	3	4	5
5 zł	134 778 563	55.24%	131 997 743	53.09%
2 zł	214 024 888	54.84%	199 828 013	51.30%
1 zł	267 781 593	58.76%	246 102 933	54.44%
50 gr	129 613 042	57.48%	121 689 655	50.69%
20 gr	91 420 187	55.88%	83 484 672	50.47%
10 gr	146 138 770	61.30%	159 922 504	61.77%
5 gr	105 863 096	59.84%	90 068 682	48.76%
2 gr	106 776 199	49.85%	80 222 611	37.56%
1 gr	254 016 119	57.18%	216 235 770	51.72%
<b>Total</b>	<b>1 450 412 457</b>	<b>56.82%</b>	<b>1 329 552 583</b>	<b>51.71%</b>

Source: study of the NBP Cash and Issue Department.

Out of all coin denominations in 2023, the volume of processed coins with the denomination of 1 zł (17.6%, previously – 17.9%) and 1 gr (16.3%, previously – 17.4%) was the highest. In the case of coins recirculated in 2023, like in the case of coins processed, the 1 zł coins (18.5%, previously – also 18.5%) and 1 gr (16.3%, previously – 17.5%) had the highest share.

## 4.6. Cash Circulation Council

The Cash Circulation Council is a consultative and advisory body to the Management Board of NBP, unique on a European scale, functioning pursuant to Resolution No. 4/2019 of the Management Board of Narodowy Bank Polski of 21 February 2019 on the appointment of the Cash Circulation Council and determination of the procedure of its operation (as amended).<sup>98</sup> The Council was established to take measures with the aim to improve and standardise the functioning of the cash circulation market and to enhance its efficiency and safety by also involving other cash circulation market participants (in addition to banks). Motivating entities operating in the cash circulation market to cooperate in this respect is of key importance for maintaining the security and quality of cash circulation.

Representatives of NBP and stakeholders of the cash circulation market, including banks, Poczta Polska S.A., organisations associating the banking sector and the retail sector, the Polish Organisation of Cash Handling Companies and CIT companies, have participated in the work of the Council since its establishment.

In connection with the development of the National Strategy for Cash Circulation Security, as a result of the amendment of Resolution No. 4/2019 carried out in February 2021, representatives of the following authorities were included as members of the Council: the Ministry of Finance, the Ministry of the Interior and Administration, the Ministry of Justice, the National Police Headquarters, the Office of the Polish Financial Supervision Authority, the National Association of Cooperative Banks and representatives of the market of independent ATM network operators as well as additional NBP representatives.

It is worth pointing out that the Council is the only forum of this kind bringing together representatives of different areas of the cash circulation market, including the institutions regulating its operation and the commercial sector.

The Council's main task in 2023 was to analyse the implementation of the National Strategy for Cash Circulation Security. At the same time, the Council carried out, among others, activities related to analysing cash circulation in Poland and analysing legal regulations in this area, recommending proposals for measures to mitigate systemic risk, enhancing the security of cash circulation and integrating the functioning of the market.

### 4.6.1. National Strategy for Cash Circulation Security

In 2023, the implementation of the National Strategy for Cash Circulation Security was continued, developed as part of the work of the task forces set up at the Cash Circulation

---

<sup>98</sup> Hereinafter referred to as Resolution no. 4/2019.

Council during 2021 and then approved by the Council at its meeting on 29 October 2021 and recommended to the NBP Management Board, which adopted the Strategy on 22 November 2021. The implementation of the actions defined in the National Strategy for Cash Circulation Security has become one of the priorities of Narodowy Bank Polski for the coming years and has been included in the Plan of activity of NBP. The National Strategy for Cash Circulation Security focuses on supporting further sustainable development of the cash circulation market while maintaining a high level of its security.

The analytical, legislative, self-regulatory and recommendation measures planned in the National Strategy for Cash Circulation Security are implemented in 4 thematic pillars:

- Pillar I – availability and acceptance of cash,
- Pillar II – smooth cash supply,
- Pillar III – cyber-security of the IT systems used in cash supply processes,
- Pillar IV – physical security of cash.

As part of the ongoing work carried out under Pillar I in 2023, a survey was prepared and conducted among merchants concerning the impact of the introduction of mandatory cash acceptance on businesses. At the beginning of 2023, the results of the survey carried out in 2022 presenting an assessment of the impact of the amendment of the Act on Payment Services (which entered into force on 5 November 2021) on market participants requiring payment card merchants (with exceptions specified in the Act) to accept payment in cash (see subsection “4.3. Obligation to accept cash payments”). On the other hand, in 2023 Q4, the compliance with the cash availability criterion adopted in the Strategy was positively verified.<sup>99</sup> The results of the conducted survey on cash availability in Poland in 2023 are presented in Box C.

As part of its activities in the legislative area, NBP was involved in legislative work related to the issuance by the Minister of Finance of the regulation specifying the procedure for the fulfilment of the obligation to provide NBP, on a quarterly basis, with statistical data on ATMs and cash deposit machines, including the number and value of transactions performed therein, resulting from the Act on Payment Services of 19 August 2011 (Journal of Laws 2024, item 30). The issued Regulation of the Minister of Finance of 22 December 2023 on the provision of information to Narodowy Bank Polski by payment service providers and other obligated entities (Journal of Laws 2023, item 2808) was promulgated on 29 December 2023.

As part of increasing the availability of cash, the use of Assisted Self Service devices and the MultiCash Branch solution were explored, including increasing the use of so-called mobile ATMs in Poland. In the survey conducted by NBP, the majority of market participants identified the benefits associated with the use of ASS devices, and information on undertaking works on the design of a service incorporating the use of these devices also appeared.

<sup>99</sup> I.e. ensuring that 90% of the population in Poland has access to a bank branch with a cash desk service or an ATM within a distance shorter than 10 km. The results of the 2023 survey indicate that 98.1% of the population in Poland have access to a bank branch with a cash desk service or an ATM within a distance shorter than 10 km, 54.8% within a distance shorter than 1 km, 30% within a distance from 1 km to 5 km from their place of residence, and less than 2% — within a distance over 10 km from their place of residence.

At the same time, opinions were reported that the costs of projects based on ASS devices were disproportionate to the benefits gained. The survey indicated that market participants were not interested in setting up a MultiCash Branch in Poland due to the high investment and operating costs associated with its construction. The cost factor was also a significant barrier to increasing the use of the so-called mobile ATMs – banks and operators of ATMs providing this service emphasised that the cost of maintaining mobile devices was higher than for ATMs at a fixed location, making this service unprofitable in the absence of external funding.

Under Pillar I, market monitoring is also carried out on a continuous basis in terms of Cash Tech solutions – modern cash availability solutions and technologies, regulatory changes in the area of providing payment services worldwide and information activities carried out in Poland in terms of popularising in-store withdrawal services, i.e. cash back.

The activities included in Pillar II, concerning the smooth supply of cash to the market, are focused on ensuring a steady, uninterrupted and efficient supply of cash, as well as raising public awareness of the role of cash and confidence in cash as a secure form of payment settlement.

In 2023 Q4, the next edition of the survey was conducted among cash circulation market participants cooperating with NBP in the scope of cash supply, regarding the fulfilment of the recommendations provided in writing in 2022 on key aspects of ensuring business continuity in emergency situations, including the resumption of IT systems used in cash handling, increased staff absenteeism, access to other cash resources, cash conversion services, provision of alternative cash transportation and communication between participants in the process. A comparison of results of the 2022 and 2023 editions of the survey does not indicate any significant changes in the scope concerned.

In 2023, another edition of the public opinion survey on cash in circulation, prepared in NBP and commissioned for implementation, was carried out. It covered, among others, the issues of availability and acceptance of cash, the use and withdrawal of cash, the quality of banknotes and coins and their images and the collection of banknotes and coins. The most significant results of the survey are presented in subsection “3.1. Trends observed in Poland”.

In addition, analytical work was carried out in 2023 in terms of the feasibility and scope of introducing changes to the supply of Polish currency in the deposit system. As part of this work, consultations were undertaken with representatives of the cash circulation market.

The next edition of the survey of banks and independent ATM operators on the adaptation of customer-operated machines (cash deposit machines, ATMs and recyclers) to handle banknotes in circulation was carried out in order to develop solutions to increase the flexibility of adaptation of machines to handle banknotes in circulation. The information gathered allowed for an analysis of the directions for further work to be undertaken in this area, among others, in the legislative formula (see subsection “4.4.4. Counting, sorting of banknotes and coins”).

In 2023, as part of legislative work at NBP, further amendments were initiated to Ordinance No. 31/2013 of the Governor of NBP concerning detailed rules and procedures for the replacement of coins and banknotes which cease to operate as legal tender in the territory of the Republic of Poland and Ordinance No. 19/2016 of the Governor of Narodowy Bank Polski of 17 August 2016 on the method and procedure to be used in counting, sorting, packaging and

labelling packages of banknotes and coins, and in conducting activities related to the supply of banknotes and coins to the banks. In addition to the amendments related to improving the processes for replacing used and damaged banknotes and coins, based on the experience gained, it was proposed, among others, to adapt ATMs to the processing of banknotes of all denominations in circulation and the classification of banknotes in the machines was detailed to include banknotes damaged by the banknote neutralisation system.

Moreover, in 2023, work was carried out in cooperation with the market, on the draft position of NBP concerning encouraging non-bank entities to use on a voluntary basis the tested devices converting or sorting banknotes and coins as well as accepting and dispensing cash included in the list published by NBP. In November 2023, the Cash Circulation Council passed a resolution to this effect.<sup>100</sup>

In the area of raising public awareness and confidence in cash, as part of Pillar II, training sessions provided by NBP employees in the scope of recognising the authenticity of banknotes and coins were continued in 2023.

In pursuit of Pillar III objectives on the cyber security of IT systems used in cash supply processes, such as identifying these systems and covering them with special protection and improving the exchange of information between cash market participants in the field of cyber security, in 2023, a proposal for the selection of a set of good practices in the field of ICT security was provided to market participants while, in terms of enhancing the professional qualifications of employees of entities involved in cash circulation, training was provided in the area of the ISO/IEC 27001 standard.

As part of the activities under Pillar IV, dedicated to the physical security of cash, work was continued on preparing good practices and procedures related to the cash handling process in the market. Following an internal verification in NBP completed in 2022, this task was included in the scope of work of the Task Force for the transport and processing of cash in the market established on 31 March 2023. In addition to the aforementioned good practices, the Task Force, consisting of representatives of the main actors involved in cash circulation and representatives of the regulators, deals with analysing the possibilities and developing concepts for solutions in the scope of cash transport and, in particular, the transport of cash to banking facilities and ATMs.

### Box C. Summary of the results of the 2023 cash availability survey

The cyclical cash availability survey is one of the measures provided for in the National Strategy for Cash Circulation Security (NSCCS) under Pillar I – Cash Availability and Acceptance (Objective 2 – Identifying the criteria and monitoring cash availability; Priority 4 – Development of cash availability criteria). The survey aims to verify whether the condition defined in the NSCCS is met, i.e. that 90% of the population in Poland have access to the nearest bank branch with cash desk services or an ATM within a distance of 10 km from their place of residence.<sup>101</sup>

<sup>100</sup> Consequently, the NBP position paper on the subject had been drafted and adopted by the NBP Management Board in early 2024, which was subsequently published.

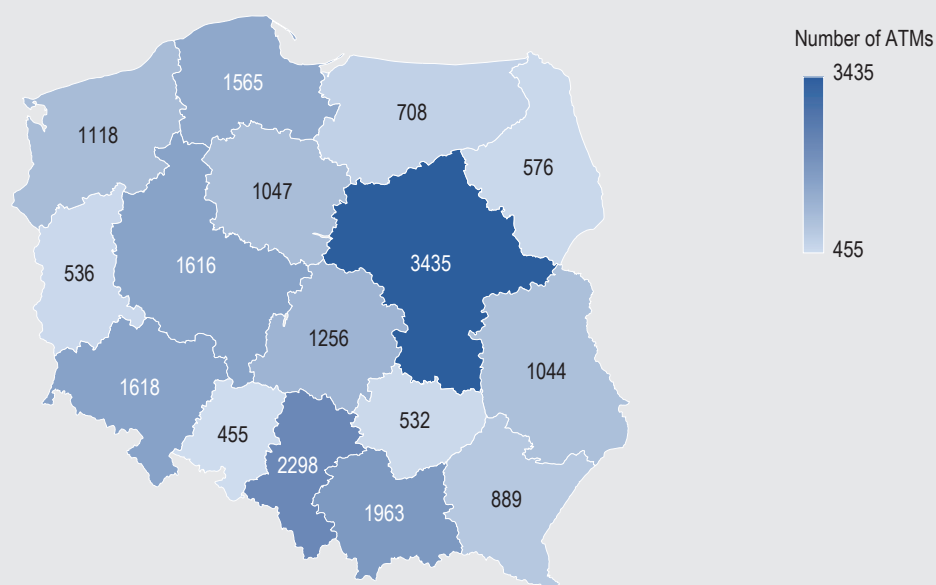
<sup>101</sup> National Strategy for Cash Circulation Security, Narodowy Bank Polski, 2021.

The aim of the cash availability survey conducted in 2023 was primarily to determine the percentage of the Polish population that in 2023 had access to the nearest ATM or bank branch with cash desk services within a distance of maximum 10 km. Due to the specific nature of the services offered, the analysis also covered Poczta Polska S.A. branches offering cash withdrawal services, but did not cover cash back points.

Data on the location of ATMs in Poland as at 15 December 2023, as well as data on branches of Poczta Polska S.A. offering cash withdrawal services and data on bank branches with cash desk services were used to conduct the cash availability analyses. The data used was obtained directly from 16 banks, 2 non-bank ATM operators and Poczta Polska S.A. The analyses also used Statistics Poland (GUS) data from the 2021 Population and Housing Census, in particular the spatial distribution of residents, presented on a kilometre grid.<sup>102</sup>

ATMs remain the primary channel for access to cash in Poland and, contrary to European trends, their number has been increasing since 2022 Q4, after a steady decline recorded from 2017 Q2 to 2022 Q3. According to the NBP data, 22,085 cash dispensers (ATMs and recyclers) operated in Poland at the end of 2023 Q4. In 2023 Q4, 122.3 million cash withdrawal transactions with a total value of PLN 101.5 billion were carried out in ATMs and recyclers. The total value of ATM cash withdrawal transactions in 2023 Q4 was PLN 7.3 billion (i.e. 7.8%) higher than in the corresponding quarter of 2022.<sup>103</sup>

**Drawing C1.** Number of ATMs by voivodeship as at 15 December 2023



Source: NBP study based on data collected for the 2023 cash availability survey.

Finally, 20,657 ATMs across the country, representing 93.5% of all ATMs, were included in the 2023 cash availability survey.

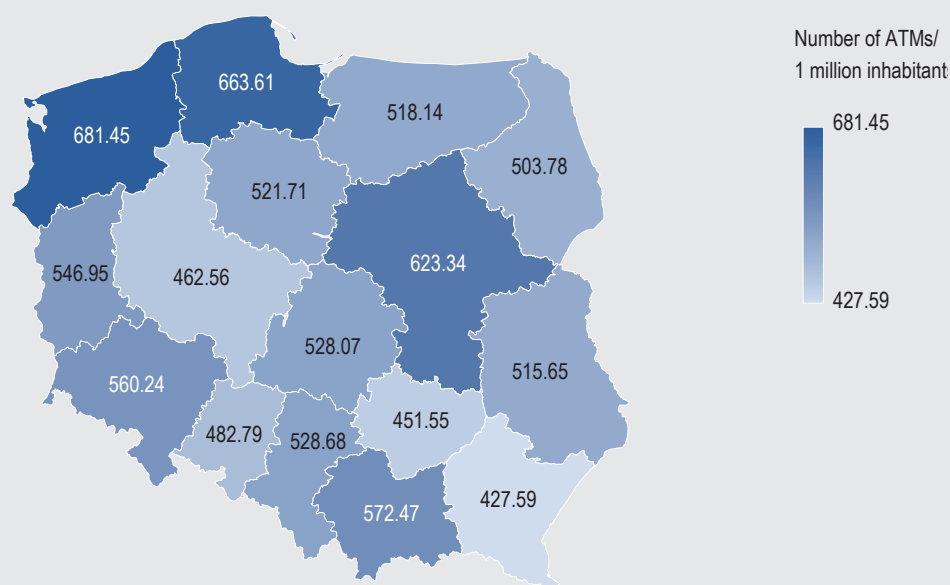
<sup>102</sup> Resident data on a kilometre grid 2021, GUS Geostatistical Portal, <https://geo.stat.gov.pl/app/cat/org/gus/mapa/3ed98504-d55b-4fab-1ca5-b22358e66966?lang=PL> [accessed: 28 February 2024].

<sup>103</sup> Own calculations of the NBP Cash and Issue Department on the basis of transmitted data published at: <http://nbp.pl/en/payment-system/statistical-data/payment-cards/> [accessed: 21 May 2024].

The results obtained in the 2023 edition of the survey indicate that there were 557.98 ATMs per 1 million inhabitants across the country. This means a slight increase in the number of ATMs per capita compared to the cash availability survey, 2022 edition, when the ratio of ATMs per 1 million inhabitants was 550.5.<sup>104</sup>

In regional terms, the highest number of ATMs per 1 million inhabitants as at 15 December 2023 was recorded in the Zachodniopomorskie (681.45) and Pomorskie (663.61) voivodeships, which may be related to border trade or the popularity of these voivodeships among foreign tourists. The lowest number of ATMs per 1 million inhabitants was recorded in the Podkarpackie (427.59) and Świętokrzyskie (451.55) voivodeships.

**Drawing C2.** Number of ATMs per 1 million inhabitants by voivodeship



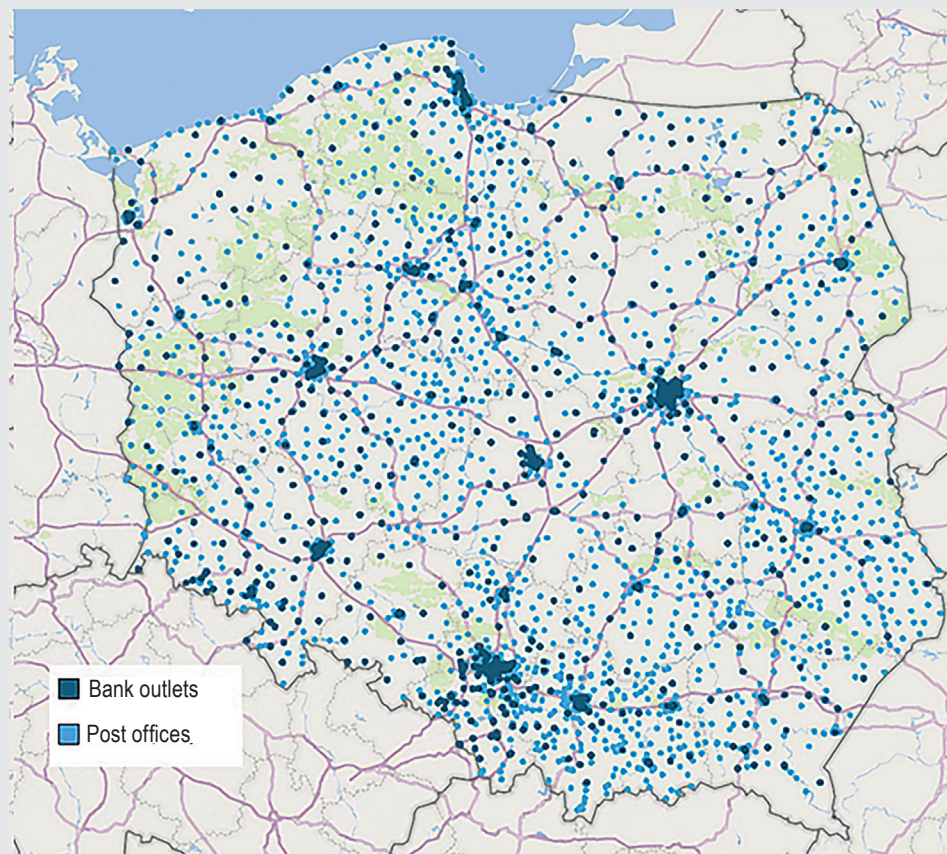
Source: NBP study based on data collected for the 2023 cash availability survey.

The analyses performed show that for more than half of Polish residents the nearest ATM was located within a distance smaller than 1 km from their place of residence. The share of residents who had to cover a distance smaller than 5 km to the nearest ATM was 83.96%. An analysis of cash availability shows that only 2.35% of Poland's residents had to cover a distance of more than 10 km to use an ATM.

Although ATMs are the most popular places among users to acquire cash, they are not its only source. The network of cash access points, formed by ATMs, is supplemented by outlets of Poczta Polska S.A. and commercial banks (branches offering a cash desk service).

<sup>104</sup> Both in 2022 and in 2023, only ATMs for which information was obtained from the banks and operators providing data for the cash availability survey were included in the calculation of the indicator.

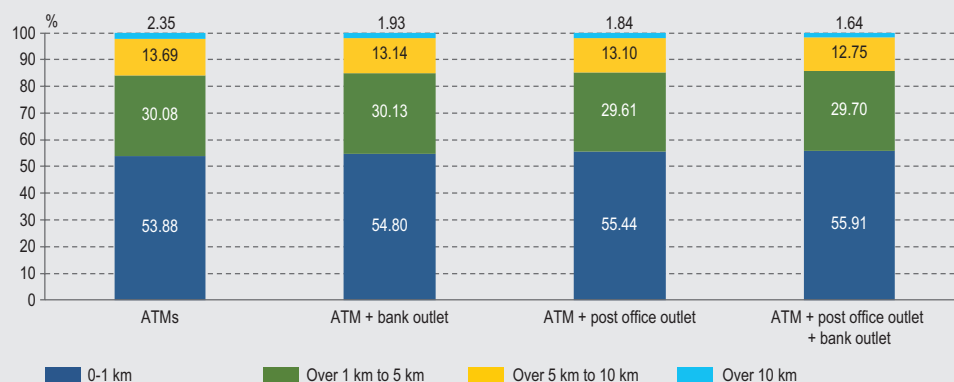
**Drawing C3.** Distribution of bank branches and Poczta Polska S.A. branches with a cash desk service in the country



Source: NBP Cash and Issue Department study based on data collected for the 2023 cash availability survey.

The results of the cash accessibility analysis indicate that although Poczta Polska S.A. branches and bank branches offering a cash desk service are not as numerous as ATMs, they are an important addition to the network of cash access points, especially in small towns and in rural areas (see Drawing C3). Thus, when analysing access to cash taking into account the network of bank branches and post office branches with cash desk services, the results show that 56% of residents have a cash access point (ATM, bank branch, post office branch with cash desk services) within a distance of 1 km from their place of residence. When analysing the size of the group of residents who have access to a cash access point no more than 5 km from their residence, this group, after taking into account the three types of points, represents 86% of residents. On the other hand, 98.4% of residents have access to cash within a distance of up to 10 km from their place of residence (see Drawing C4).

**Drawing C4.** Share of residents depending on the distance to a cash access point and the scope of analysis



Source: NBP study based on results of the cash availability survey in 2023.

The results of the cash availability survey confirm that the cash availability criterion set out in the NSCCS is met. Cash availability in Poland is also highly rated by its users. According to 90.9% of respondents to the 2023 public opinion survey commissioned by NBP,<sup>105</sup> access to cash via an ATM is satisfactory or rather satisfactory. In the group of 10 respondents, on average, 8 of them believe that access to cash via a bank branch is satisfactory or rather satisfactory. Taking into account the role of cash in the economy, its availability will be analysed and monitored in the subsequent years as well.

<sup>105</sup> Public opinion survey on cash in circulation. Report of the survey. Grupa BST sp. z o.o. – IPC Sp. z o.o. Research Institute – Polska Agencja Ewaluacji Sektora Publicznego S.A. (Polish Agency for Public Sector Evaluation), Warsaw 2023.



# Cooperation with banks in the scope of Polish currency supply

## Cooperation with banks in the scope of Polish currency supply

### 5.1. Polish currency supply in 2023

The supply of banks with Polish currency by NBP stems from Article 68(2) of the Act of 29 August 1997 – Banking Law and it implements Article 37 of the Act of 29 August 1997 on Narodowy Bank Polski. In accordance with Article 37 of the Act of 29 August 1997 on Narodowy Bank Polski, NBP organises the management of banknotes and coins of the Republic of Poland.

When organising the Polish currency management pursuant to § 4 of Ordinance No. 19/2016 of the Governor of Narodowy Bank Polski of 17 August 2016 on the method and procedure to be used in counting, sorting, packaging and labelling packages of banknotes and coins, and in conducting activities related to the supply of banknotes and coins to the banks (Official Journal of Narodowy Bank Polski of 2020 item 28, as amended), NBP concludes agreements with banks defining the conditions of withdrawal and lodging of Polish currency (supply agreements). Banks acquire Polish currency from NBP under the basic and depository system.<sup>106</sup>

Sixteen regional branches supplying Polish currency to banks pursuant to the aforementioned agreements operate within the organisational structure of NBP. Four of them act as cash supply centres for other regional branches of the central bank.

As at 31 December 2023, 18 supply agreements were concluded, regulating the cooperation of the NBP regional branches with 265 organisational units of banks operating under the basic system and 42 organisational units operating under the depository system.

In the area of supplying Polish currency banknotes and coins, 2023 was characterised by:

- a stable level of the value of withdrawals from NBP – banks withdrew PLN 760 million on average per day; no sudden demand for cash occurred; the highest daily value of withdrawals amounted to PLN 2.2 billion and its level was due to the accumulation of benefit payments (Figure 5.1);
- a stable level of lodgements to NBP – banks lodged PLN 724 million on average per day (Figure 5.1);
- similar levels of withdrawals and lodgements – the average daily value of withdrawals was 4.9% higher than the corresponding average for lodgements (Figure 5.1);

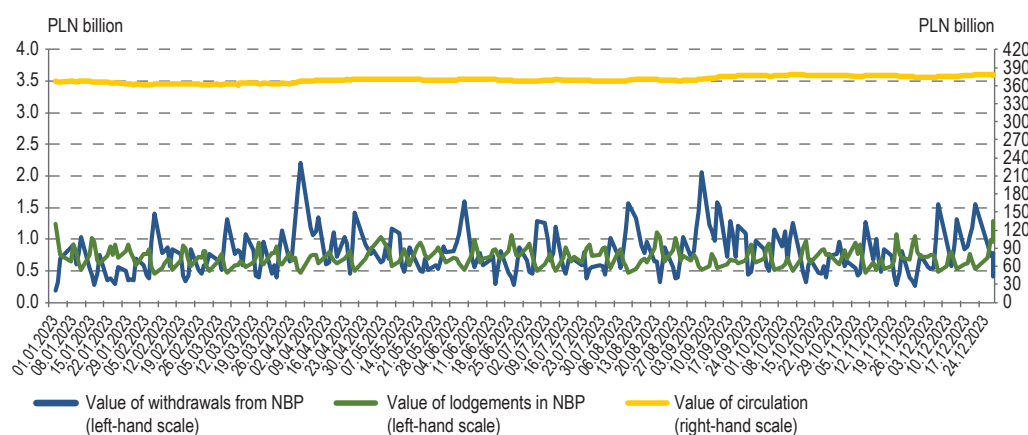
---

<sup>106</sup> Polish currency lodged as an NBP deposit is the property of NBP and it is stored in vault rooms of the bank's organisational unit, subject to the condition that the NBP deposit is adequately secured and separated from banknotes and coins owned by this bank. Some banks use the deposit system. Limits of amounts related to storage of NBP deposits are set out with banks on a case by case basis in the supply agreements.

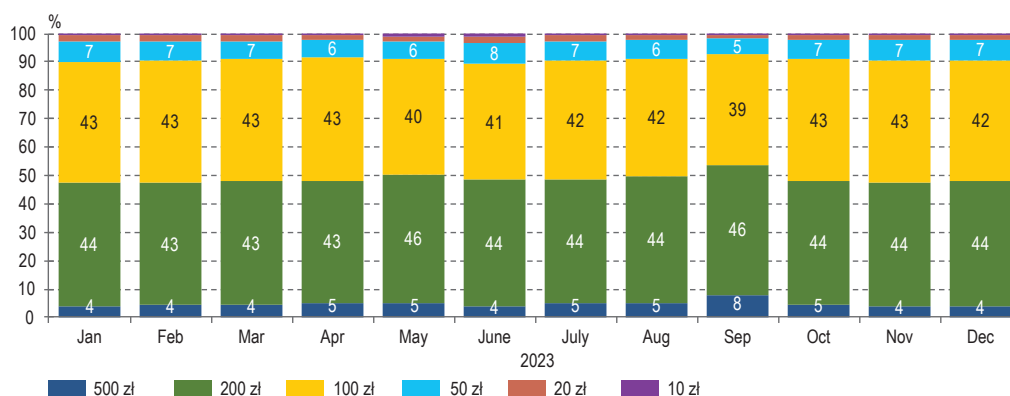
- the 200 zł denomination acquiring a dominant role in the value of banknotes withdrawn, with a 43–44% share, depending on the month (Figure 5.2);
- a decrease in the share of 100 zł banknotes in the value of withdrawals – their share, depending on the month, ranged between 39% and 43%, while in 2022, 100 zł banknotes dominated in the value of withdrawals (Figure 5.2);
- the continuing demand for the highest denomination, i.e. 500 zł – the share of this banknote in the aforementioned structure of withdrawals from NBP, depending on the month, stood at a level of 4–5%, while in September 2023, due to seasonal increases in demand for cash (e.g. the beginning of the school year, payment of pension benefits), the share of this denomination increased periodically to 8% (Figure 5.2);
- an increase in the importance of the share of the 200 zł denomination in the value of banknotes lodged – although 100 zł banknotes continued to have a dominant share, at a level of 48–50% from January to December 2023, the 200 zł denomination remained at a higher level (38–40%) than in the previous year (Figure 5.3);
- the continuing disproportion between the number of coins withdrawn and lodged – depending on the month, the number of coins withdrawn from NBP was up to 6 times higher than the number of coins lodged in NBP (Figure 5.4).

In 2023, as a result of the NBP's cooperation with banks, CIT companies and other market participants, the supply of Polish currency to the cash circulation market proceeded smoothly and uninterrupted.

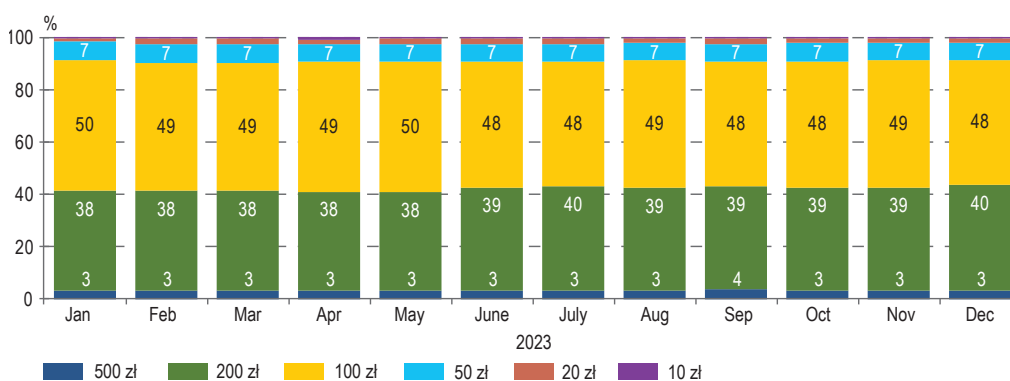
**Figure 5.1.** Value of banknotes and coins withdrawn and lodged from/in NBP and value of circulation in 2023 (PLN billion)



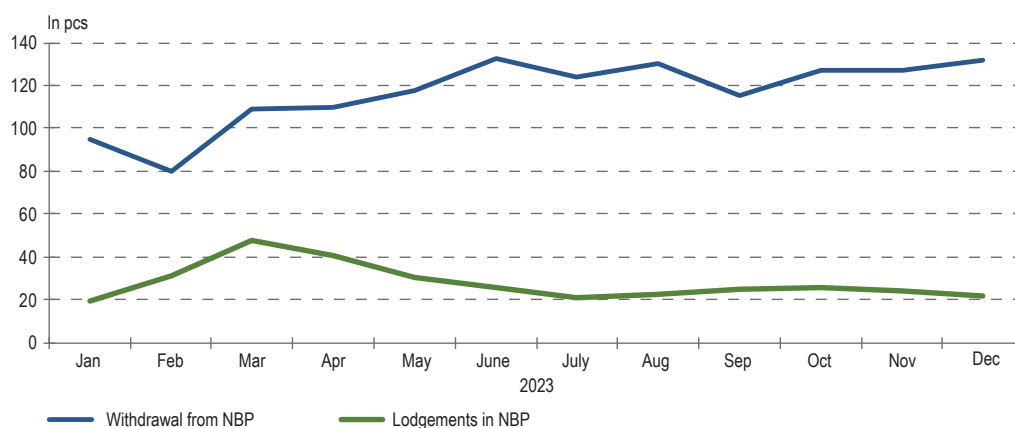
Source: study of the NBP Cash and Issue Department.

**Figure 5.2.** Denomination structure of the value of banknotes withdrawn from NBP in 2023

Source: study of the NBP Cash and Issue Department.

**Figure 5.3.** Denomination structure of the value of banknotes lodged in NBP in 2023

Source: study of the NBP Cash and Issue Department.

**Figure 5.4.** Volume of coins withdrawn and lodged from/in NBP in 2023

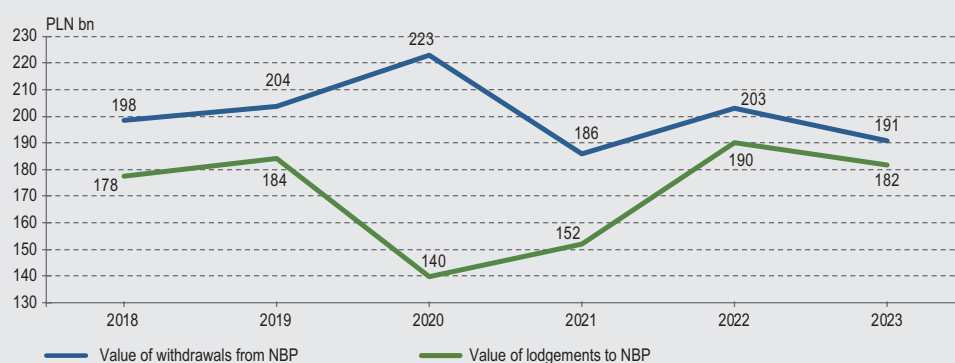
Source: study of the NBP Cash and Issue Department.

**Box D. Tendencies in supplying Polish currency to banks in 2018–2023**

Analysing the levels of the value of banknotes and coins withdrawn and lodged from/in NBP over several years (Figure D1), it can be concluded that:

- these levels were particularly affected by the increase in cash demand recorded in the years 2020–2021 in connection with the COVID-19 pandemic; on an annual basis, not only was the increase in withdrawals from NBP in 2020 particularly evident, but also the occurrence of a surplus of withdrawals over lodgements, which amounted to 59% in 2020 and 22% in 2021;
- this surplus decreased from 7% in 2022 to 5% in 2023; this phenomenon is in line with the trend in the years before the COVID-19 pandemic – the surplus of withdrawals over lodgements amounted to 12% in 2018 and 10% in 2019;
- the sudden several-day rise in daily withdrawals from NBP that occurred in February 2022 due to the outbreak of the full-scale military aggression of the Russian Federation against Ukraine, did not affect the total level of the value of withdrawals and lodgements throughout 2022, as the level was similar to the values recorded during the stable period of 2018–2019;
- in 2023, the value of withdrawals was lower than in each of the stable years of 2018 and 2019, while the value of lodgements was similar to the level occurring in the aforementioned period.

**Figure D1.** Value of banknotes and coins withdrawn and lodged from/in NBP



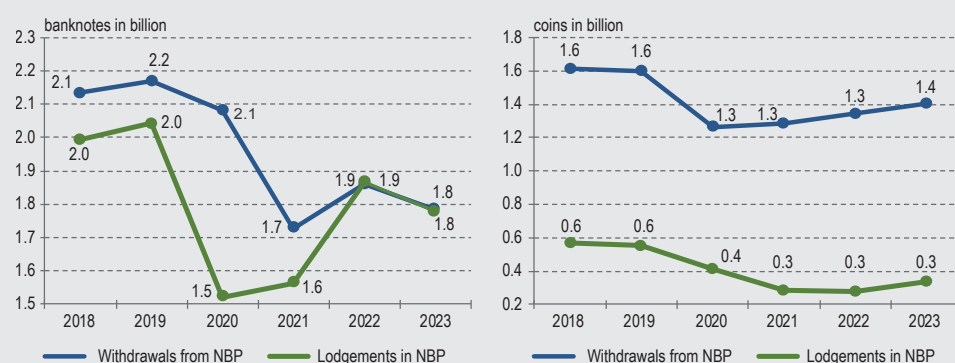
Source: study of the NBP Cash and Issue Department.

When analysing the levels of withdrawals and lodgements from/to NBP in terms of the volume of banknotes and coins (Figure D2), it can be concluded that:

- in the case of banknotes:
  - in 2023, as in the previous year, the number of banknotes withdrawn from NBP remained at the same level as the number of banknotes lodged in NBP;
  - both the number of banknotes withdrawn from NBP and the number of banknotes lodged in NBP follow a downward trend;

- the increase in cash demand in 2020 in terms of value did not translate into a rise in the volume of banknotes withdrawn from NBP;
- in the case of coins, in 2023, as in the previous year, a significant imbalance between the number of coins withdrawn from NBP and lodged in NBP still existed; in 2023, as in the years 2021–2022, approximately four times more coins were withdrawn than lodged, compared to approximately three times more in 2018–2020.

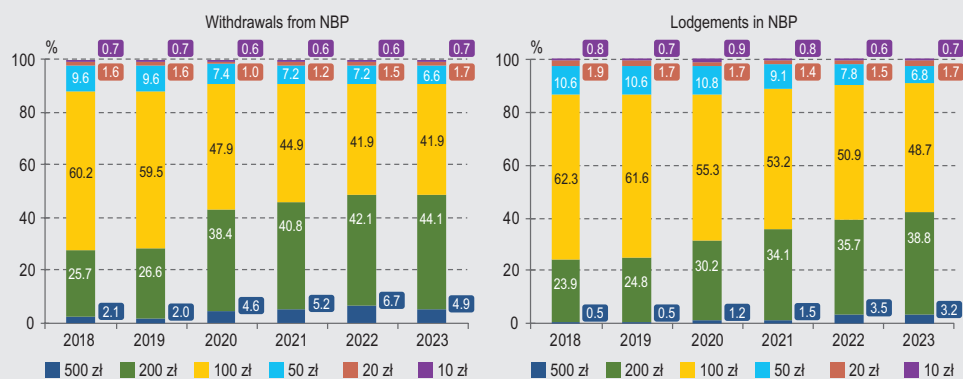
**Figure D2.** Number of banknotes and coins withdrawn and lodged from/in NBP



Source: study of NBP Cash and Issue Department.

The 100 zł and 200 zł denominations account for the main share in the structure of banknote withdrawals and lodgements. In total, in 2023, these shares amounted to 86% for withdrawals and 88% for lodgements. In previous years, the total share of these denominations stood at a similar level. Fundamental changes occurred within these two denominations. In 2022, the 100 zł banknote lost its dominant role in withdrawals from NBP compared to the 200 zł banknote, and subsequently, in 2023, the 200 zł banknote strengthened its dominating role in withdrawals from NBP. In the case of lodgements to NBP, a gradual increase in the share of the 200 zł banknote was observed, but the 100 zł banknote continued to play a dominant role in 2023.

**Figure D3.** Denomination structure of the value of banknotes withdrawn and lodged from/in NBP



Source: study of NBP Cash and Issue Department.

## 5.2. Withdrawing Polish currency from NBP by banks

The value of banknotes and coins collected by banks from NBP in 2023 was 6.1% lower than in 2022 (Table 5.1).

**Table 5.1.** Value of banknotes and coins withdrawn from NBP in PLN million

Value	2022	2023	Change (col. 3 – col. 2)	Change in % (col. 3 / col. 2 – 100%)
1	2	3	4	5
Value	203 115.5	190 642.7	-12 472.8	-6.1

Source: study of NBP Cash and Issue Department.

Among all banks supplied with cash by NBP, a group of so-called key banks can be distinguished, consisting of 5–6 banks (out of 18 banks) generating over 80% of the value of banknote and coin withdrawals (Table 5.2).

**Table 5.2.** Number of banks that have withdrawn at least 80% of the value of banknotes or coins from NBP

Number	2022		2023	
	Total share	Number of banks	Total share	Number of banks
1	2	3	4	5
Number	87.8%	6	83.4%	5

Source: study of the NBP Cash and Issue Department.

### 5.2.1. Banknotes

The value of banknotes withdrawn by banks in 2023, compared to 2022, was 6.2% lower, while their number was 4.1% lower than in 2022 (Table 5.3).

**Table 5.3.** Value (PLN million) and number (million) of banknotes withdrawn from NBP

Value or number	2022	2023	Change (col. 3 – col. 2)	Change in % (col. 3 / col. 2 – 100%)
1	2	3	4	5
Value	202 320.4	189 782.4	-12 538.1	-6.2%
Number	1 858.6	1 782.1	-76.5	-4.1%

Source: study of the NBP Cash and Issue Department.

The highest share in banknote withdrawals in 2023 in terms of volume was recorded in the case of the 100 zł denomination. In 2022, it was also the banknote most frequently withdrawn from NBP. In 2023, in numerical terms banknotes with the denomination of 500 zł were withdrawn least frequently (1.0%). Nevertheless, due to its high face value, this banknote had a share of 4.9% in the value of banknote withdrawals (Table 5.4).

In 2023, compared to 2022, both the value and the number of withdrawals decreased for the following banknote denominations: 500 zł, 200 zł, 100 zł and 50 zł (in the case of value of withdrawals, respectively by: PLN 4,322.0 million, PLN 1,362.0 million, PLN 5,243.5 million, and PLN 2,045.0 million, and in the case of the number of withdrawals, respectively by: 8.6 million pcs, 6.8 million pcs, 52.4 million pcs, and 40.9 million pcs). On the other hand, the value and number of 20 zł and 10 zł banknotes withdrawn increased (in the case of the value of withdrawals, respectively, by: PLN 223.9 million, PLN 210.6 million, while in the case of the volume of withdrawals, respectively by: 11.2 million pcs and 21.1 million pcs.).

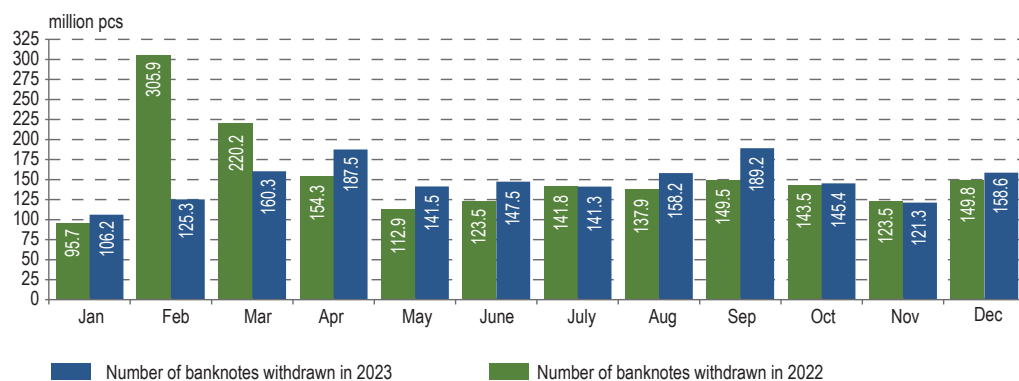
**Table 5.4.** Value (PLN million), number (million pcs) and structure of banknotes withdrawn by banks from NBP

Denomination	Value		Number		Structure by value		Structure by number	
	2022	2023	2022	2023	2022	2023	2022	2023
1	2	3	4	5	6	7	8	9
500 zł	13 604.5	9 282.5	27.2	18.6	6.7%	4.9%	1.0%	1.0%
200 zł	85 082.0	83 720.0	425.4	418.6	42.1%	44.1%	22.9%	23.5%
100 zł	84 853.0	79 609.5	848.5	796.1	41.9%	41.9%	45.7%	44.7%
50 zł	14 611.3	12 566.3	292.2	251.3	7.2%	6.6%	15.7%	14.1%
20 zł	3 034.4	3 258.3	151.7	162.9	1.5%	1.7%	8.2%	9.1%
10 zł	1 135.3	1 345.8	113.5	134.6	0.6%	0.7%	6.1%	7.6%
Łącznie	202 320.4	189 782.4	1 858.6	1 782.1	100.0%	100.0%	100.0%	100.0%

Source: study of the NBP Cash and Issue Department.

In 2023, banks withdrew the lowest volume of banknotes in January (106.2 million pcs) and the highest volume in September: 189.2 million pcs and in April: 187.5 million pcs (Figure 5.5). Pension and retirement benefit payments (the so-called 13th and 14th pensions) represented the factor contributing to the trend of increased banknote withdrawals in these two periods.

**Figure 5.5.** Number of banknotes withdrawn from NBP by banks in 2023, compared to the number of banknotes withdrawn from NBP in 2022 (in million pieces)



Source: study of the NBP Cash and Issue Department.

### 5.2.2. Coins

The value of coins withdrawn by banks in 2023 was 8.2% higher than the value of withdrawals in 2022, amounting to PLN 860.3 million, while the volume of coins withdrawn was 4.0% higher and amounted to 1.4 billion (Table 5.5).

**Table 5.5.** Value (PLN million) and number (million pcs) of coins withdrawn from NBP

Value or number	2022	2023	Change (col. 3 - col.2)	Change in% (col. 3 / kol.2 - 100 %)
1	2	3	4	5
Value	795.1	860.3	65.2	8.2%
Number	1 346.7	1 400.4	53.7	4.0%

Source: study of the NBP Cash and Issue Department.

When analysing the denomination structure of coin withdrawals in 2023, it should be indicated that the highest share in terms of volume was recorded in the case of 1 gr denomination, as in 2022 and the previous years. In terms of volume, both in 2023 and in 2022, coins with the denomination of 5 zł were withdrawn least frequently (Table 5.6).

In 2023, compared to 2022, both the value and the number of withdrawals of all coins increased, respectively by: 65.2 million for the value of withdrawals and by 53.7 million pcs for the volume of coins withdrawn. This is due, among others, to the fact that in 2023 banks withdrew more coins than in 2022 for the following denominations: 5 zł, 2 zł, 1 zł, 50 gr, 5 gr and 1 gr (respectively, by: 7.1 million pcs, 5.1 million pcs, 17.1 million pcs, 8.1 million pcs, 25.2 million pcs, and 16.5 million pcs).

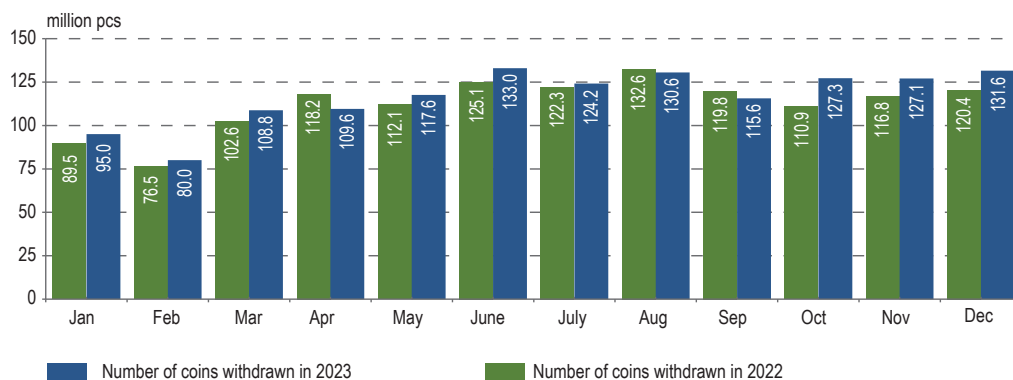
**Table 5.6.** Value (PLN million), number (million) and structure (%) of coins withdrawn from NBP

Denomination	Value		Number		Structure by value		Structure by number	
	2022	2023	2022	2023	2022	2023	2022	2023
1	2	3	4	5	6	7	8	9
5 zł	338.3	373.6	67.7	74.7	42.5%	43.4%	5.0%	5.3%
2 zł	238.9	249.2	119.4	124.6	30.0%	29.0%	8.9%	8.9%
1 zł	117.0	134.1	117.0	134.1	14.7%	15.6%	8.7%	9.6%
50 gr	45.7	49.7	91.3	99.5	5.7%	5.8%	6.8%	7.1%
20 gr	23.6	21.9	117.8	109.6	3.0%	2.5%	8.7%	7.8%
10 gr	19.1	17.9	191.5	179.2	2.4%	2.1%	14.2%	12.8%
5 gr	6.1	7.3	121.5	146.7	0.8%	0.9%	9.0%	10.5%
2 gr	2.6	2.5	128.9	124.0	0.3%	0.3%	9.6%	8.9%
1 gr	3.9	4.1	391.6	408.0	0.5%	0.5%	29.1%	29.1%
<b>Total</b>	<b>795.1</b>	<b>860.3</b>	<b>1 346.7</b>	<b>1 400.4</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: study of the NBP Cash and Issue Department.

In the consecutive months of 2023, the volume of coins withdrawn from NBP by banks showed an upward trend. Banks withdrew the lowest number of coins in February – 80.0 million pcs, and the highest number in June – 133.0 million pcs (Figure 5.6). A similar trend and a similar monthly distribution of coin withdrawals were observed in 2022.

**Figure 5.6.** The number of coins withdrawn from NBP by banks in 2023, compared to the number of coins withdrawn from NBP in 2022 (in million pcs)



Source: study of the NBP Cash and Issue Department.

### 5.3. Lodging Polish currency in NBP by banks

In 2023, in relation to the previous year, the value of banknotes and coins lodged in NBP by banks decreased by PLN 8,328.4 million, i.e. by 4.4% (Table 5.7).

**Table 5.7.** Value of banknotes and coins lodged in NBP (PLN million)

Value	2022	2023	Change (col. 3 - col. 2)	Change in % (col. 3 / col. 2 - 100%)
1	2	3	4	5
Value	190 035.8	181 707.4	-8 328.4	-4.4%

Source: study of the NBP Cash and Issue Department.

In 2023, a group of five banks lodged more than 80% of the value of banknotes and coins in NBP. The composition of this group did not change during the year (Table 5.8).

**Table 5.8.** Number of banks whose total share in the value of banknotes and coins lodged in NBP reached at least 80%

Number	2022		2023	
	Total share	Number of banks	Total share	Number of banks
1	2	3	4	5
Number	81.7%	5	84.0%	5

Source: study of the NBP Cash and Issue Department.

### 5.3.1. Banknotes

In 2023, banks lodged banknotes in NBP with a total value of PLN 181,269.6 million. In terms of value and volume, in 2023, banks lodged fewer banknotes than in the previous year, respectively, by PLN 8,367.9 million, i.e. 4.4% and by 87.2 million pieces., i.e. 4.7% (Table 5.9).

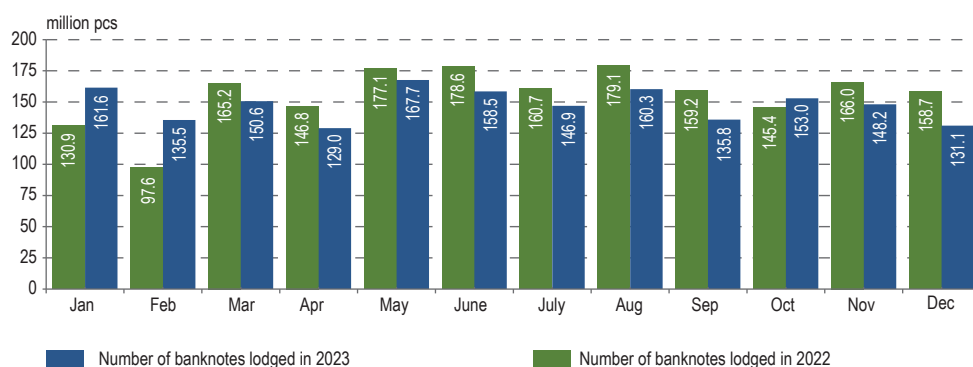
**Table 5.9.** Value (PLN million) and number (million pcs) of banknotes lodged in NBP

Value or number	2022	2023	Change (col. 3 – col. 2)	Change in % (col. 3 / col. 2 – 100%)
1	2	3	4	5
Value	189 637.5	181 269.6	-8 367.9	-4.4%
Number	1 865.4	1 778.2	-87.2	-4.7%

Source: study of the NBP Cash and Issue Department.

When analysing the number of banknotes lodged in NBP by banks in consecutive months of 2023, a downward tendency was observed. Banks lodged the lowest number of banknotes in April – 129.0 million pcs, in December – 131.1 million pcs, in February – 135.5 million pcs, and in September – 135.8 million pcs, while the highest number was in May – 167.7 million pcs, in January – 161.6 million pcs, and in August – 160.3 million pcs (Figure 5.7).

**Figure 5.7.** Number of banknotes lodged in NBP by banks in 2023, compared to the number of banknotes lodged in NBP in 2022 (in million pcs)



Source: study of the NBP Cash and Issue Department.

The highest share in banknotes lodged in 2023, both in terms of value and volume, was recorded in the case of the 100 zł denomination (it was also the banknote most frequently lodged in NBP in 2022). In terms of volume, banknotes with the denomination of 200 zł and 50 zł were the most frequently lodged banknotes in 2023, while banknotes with the denomination of 500 zł, 20 zł and 10 zł were lodged least frequently (Table 5.10).

**Table 5.10.** Value (PLN million) and volume (million pcs) and structure of banknotes lodged in NBP in 2022 and 2023 by denomination

Denomination	Value		Volume		Structure by value		Structure by volume	
	2022	2023	2022	2023	2022	2023	2022	2023
1	2	3	4	5	6	7	8	9
500 zł	6 560.0	5 836.5	13.10	11.7	3.5%	3.2%	0.7%	0.7%
200 zł	67 785.5	70 322.0	338.90	351.6	35.7%	38.8%	18.2%	19.8%
100 zł	96 523.4	88 325.5	965.20	883.3	50.9%	48.7%	51.7%	49.7%
50 zł	14 831.3	12 370.0	296.60	247.4	7.8%	6.8%	15.9%	13.9%
20 zł	2 845.4	3 146.5	142.30	157.3	1.5%	1.8%	7.6%	8.8%
10 zł	1 091.9	1 269.1	109.20	126.9	0.6%	0.7%	5.9%	7.1%
Łącznie	189 637.5	181 269.6	1 865.4	1 778.2	100.0%	100.0%	100.0%	100.0%

Source: study of the NBP Cash and Issue Department.

### 5.3.2. Coins

The value and volume of coins lodged by banks in NBP in 2023 decreased, respectively, by PLN 39.5 million, i.e. 9.9% and by 58.3 million pieces, i.e. 21.0%, compared to 2022 (Table 5.11).

**Table 5.11.** Value (PLN million) and volume (million pieces) of coins lodged in NBP in 2022–2023

Value or volume	2022	2023	Change (col. 3 – col. 2)	Change in % (col. 3 / col. 2 – 100%)
1	2	3	4	5
Value	398.4	437.8	39.4	9.9%
Volume	277.7	336.0	58.3	21.0%

Source: study of the NBP Cash and Issue Department.

As in 2022, the denominations of 5 zł, 2 zł and 1 zł had the highest share in the value structure of the coins lodged in 2023 (in total, 94.4% of all coins lodged in 2023).

In terms of the volume of coins lodged in NBP, the following denominations prevailed: 5 zł, 2 zł, 1 zł, 50 gr and 1 gr (in total, 78.4% of all coins lodged). The lowest volume of coins lodged was recorded for coins with the face value of 20 gr, 10 gr, 5 gr and 2 gr (21.6% in total).

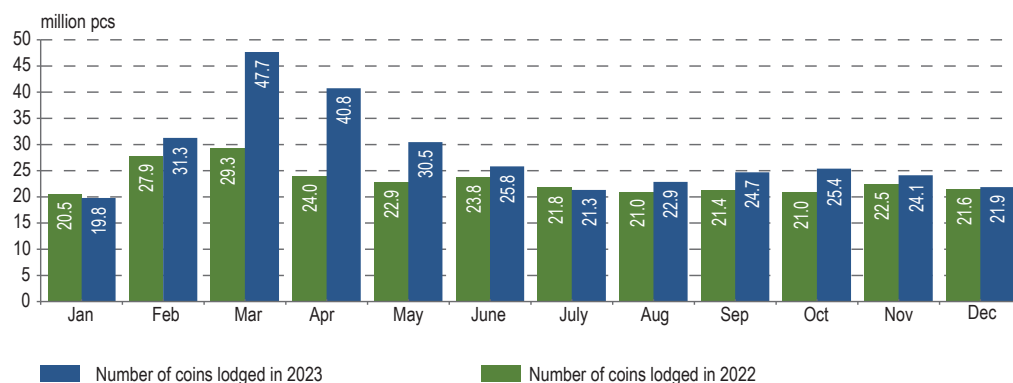
In terms of value, in 2023, denominations with the highest number of coins lodged were 5 zł and 2 zł (in total, 76.8% of the value of all coins lodged), while the lowest number of coins lodged was recorded for low denominations, i.e. 5 gr, 2 gr, 1 gr – 0.4% in total (Table 5.12).

**Table 5.12.** Value (PLN million) and number (million pcs) and structure of coins lodged in NBP in 2022–2023

Denomination	Value		Number		Structure by value		Structure by number	
	2022	2023	2022	2023	2022	2023	2022	2023
1	2	3	4	5	6	7	8	9
5 zł	167.6	183.2	33.5	36.7	42.1%	41.9%	11.7%	10.9%
2 zł	143.2	152.7	71.6	76.4	35.9%	34.9%	24.9%	22.7%
1 zł	68.4	77.2	68.4	77.2	17.2%	17.6%	26.4%	23.0%
50 gr	13.5	17.5	26.9	35.1	3.4%	4.0%	11.1%	10.5%
20 gr	3.3	3.6	16.3	17.8	0.8%	0.8%	6.1%	5.3%
10 gr	1.4	1.9	13.8	18.6	0.4%	0.4%	5.5%	5.5%
5 gr	0.5	0.9	10.7	17.7	0.1%	0.2%	3.8%	5.3%
2 gr	0.3	0.4	16.1	18.5	0.1%	0.1%	4.4%	5.5%
1 gr	0.2	0.4	20.3	38.0	0.0%	0.1%	6.1%	11.3%
<b>Total</b>	<b>398.4</b>	<b>437.8</b>	<b>277.6</b>	<b>336.0</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: study of the NBP Cash and Issue Department.

In the case of coins lodged in NBP by banks in individual months of 2023, a downward tendency has been observed since Q2. Banks lodged the lowest volume of coins in January – 19.8 million pcs and the highest number in March – 47.7 million pcs and April – 40.8 million pcs (Figure 5.8).

**Figure 5.8.** Number of coins lodged in NBP by banks in 2023, compared to the number of coins lodged in NBP in 2022 (in million pcs)

Source: study of the NBP Cash and Issue Department.

Alongside the decrease in the stream of coins lodged by banks in NBP, the acquisition of coins from citizens through the self-service coin exchange service, made available in January 2021 at all NBP regional branches, is gaining importance (See Box E).

### Box E. Self-service coin exchange

The coin exchange service in self-service devices was made available in 2021 at all 16 NBP regional branches, where one device was installed at that time in each branch. As at the end of 2023, a total of 32 self-service devices were made available to customers. From the day the service was launched until the end of 2023, customers exchanged over 669 million coins worth PLN 367 million through the devices. In 2023, more than 157,000 transactions were processed in the devices, in which 265.4 million pcs of coins worth PLN 151.7 million were exchanged. Low-denomination coins (i.e. 1 gr, 2 gr, 5 gr) accounted for approx. 50% of all coins exchanged through the devices in 2023. In May 2022, the coin exchange service in self-service devices was extended to include the possibility of crediting the customer's bank account with the equivalent of the deposited coins using the BLIK mobile payment system.

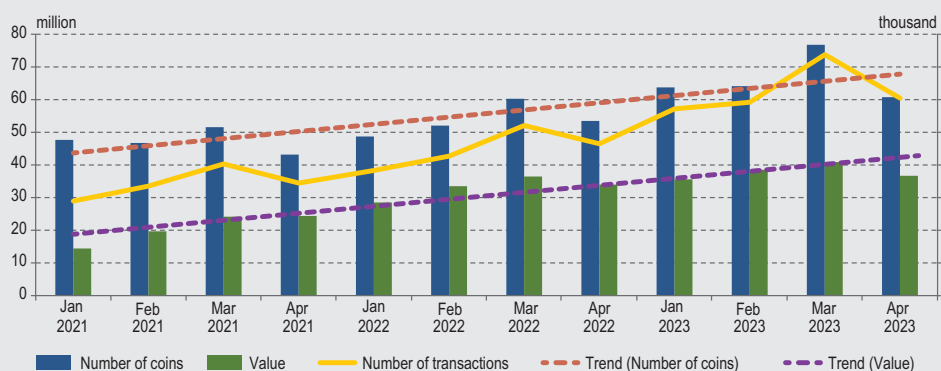
**Table E1.** Number (million pcs) and value (million PLN) of coins exchanged in self-service devices in NBP regional branches in 2021–2023

Value or number	2021	2022	2023
1	2	3	4
Value	189.17	214.48	265.39
Number	82.60	132.46	151.67

Source: study of the NBP Cash and Issue Department.

Since the first day of making the self-service coin exchange service available to customers in 2021, the solution has gained a continuously growing interest. The increase in the volume of coins accepted in 2022 compared to 2021 amounted to 13.4%, while the increase in 2023 compared to 2022 reached 23.7%.

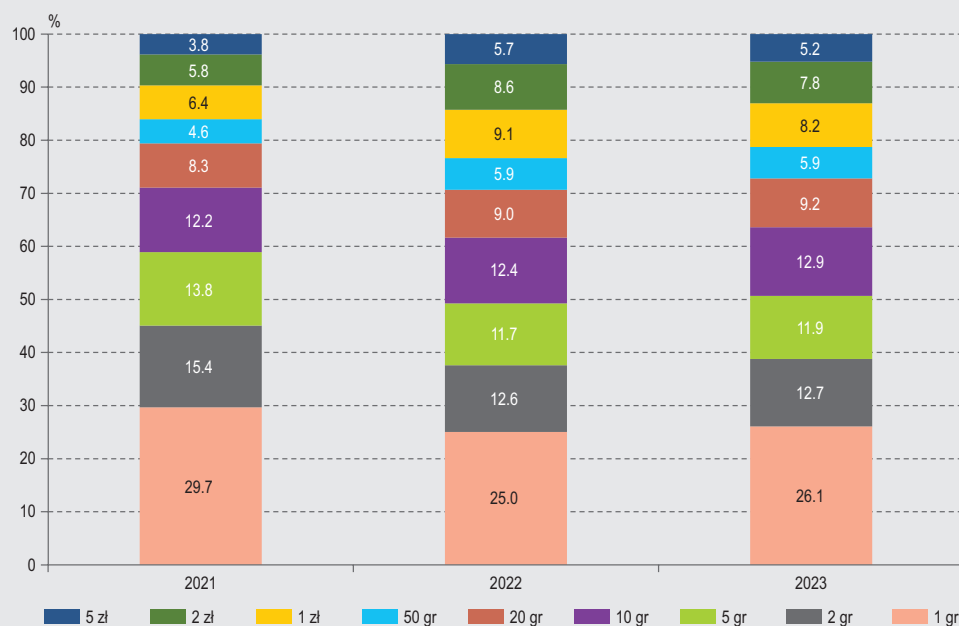
**Figure E1.** Number of transactions (thousand), number of coins (million pcs) and value (million PLN) of coins exchanged in self-service devices in NBP regional branches in 2021–2023



Source: study of the NBP Cash and Issue Department.

Since the launch of the service, the denomination structure of the coins exchanged by customers has remained similar. Low denomination coins (i.e. 1 gr, 2 gr, 5 gr) in 2021–2023 accounted for an average of 52.5% of all coins deposited (in 2021 – 58.9%, in 2022 – 49.3% and in 2023 – 50.7%).

**Figure E2.** Percentage share of individual denominations of coins exchanged in self-service devices in NBP regional branches in 2021–2023



Source: study of the NBP Cash and Issue Department.

**Table E2.** Number (million pcs) and value (million PLN) of coins by denomination exchanged in self-service devices in NBP regional branches in 2021–2023

Denomination	2021		2022		2023	
	Number of pcs	Value	Number of pcs	Value	Number of pcs	Value
1	2	3	4	5	6	7
1 gr	56.13	0.56	53.69	0.54	69.22	0.69
2 gr	29.13	0.58	26.97	0.54	33.73	0.67
5 gr	26.16	1.31	25.03	1.25	31.47	1.57
10 gr	23.06	2.31	26.53	2.65	34.34	3.43
20 gr	15.74	3.15	19.38	3.88	24.44	4.89
50 gr	8.65	4.33	12.76	6.38	15.74	7.87
1 zł	12.03	12.03	19.55	19.55	21.84	21.84
2 zł	11.01	22.03	18.41	36.81	20.76	41.52
5 zł	7.26	36.31	12.17	60.86	13.83	69.17
<b>Total</b>	<b>189.17</b>	<b>82.60</b>	<b>214.48</b>	<b>132.46</b>	<b>265.39</b>	<b>151.67</b>

Source: study of the NBP Cash and Issue Department.



# Glossary of terms

## Glossary of terms

**Cash back** – the service consisting in cash withdrawal while paying for shopping in a retail establishment by payment card, cf. *Assessment of the Polish payment system functioning in the second half of 2021*, NBP Payment System Department, April 2022

**Circulation** – the volume (or value) of general circulation banknotes and coins remaining in cash circulation, less the volume (or value) of banknotes and coins at NBP cash desks and vaults, deposited by NBP in vaults of other banks, and withdrawn from circulation by NBP due to being worn out or damaged.

**CIT companies** (cash-in-transit) – undertakings commissioned by banks to perform activities related to counting and sorting of banknotes and coins (entrusting actual activities in accordance with Article 6a(1)(2) of the Act of 29 August 1997 – Banking law) and transporting cash.

**Collector coins and banknotes** – gold and silver collector coins, collector banknotes, numismatic items (i.e. banknotes and coins which were not put into circulation as well as banknotes and coins withdrawn from circulation) as well as gold ounce coins issued by NBP.

**Polish currency** – banknotes and coins within the meaning of Article 2(1)(7) of the Act of 27 July 2002 – Foreign Exchange Law.

**Processing of banknotes and coins** – counting, sorting and checking banknotes or coins in terms of authenticity.

**Recirculation** (also referred to as turnover or recycling) – means putting into circulation banknotes fit for circulation via banks' cash points, devices operated by their clients (i.e. ATMs) formerly processed by the bank or on its behalf by an undertaking. This process takes place without the participation of NBP. Coins undergo a similar process.

**Supply** – number (or value) of banknotes or coins which were lodged in NBP or were withdrawn from NBP by banks. Supply of banks by NBP stems from Article 68(2) of the Act of 29 August 1997 – Banking Law and it implements Article 37 of the Act of 29 August 1997 on Narodowy Bank Polski.

---

[www.nbp.pl](http://www.nbp.pl)

