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THE IMPACT OF INFLATION ON THE CHOICE OF FINANCIAL INSTRUMENTS IN WHICH POLISH HOUSEHOLDS INVESTED THEIR SAVINGS

Jacek Rodzinka[1], Piotr Rodzinka[2]

Abstract Households store their savings in various types of financial assets. The value and composition of these assets has changed significantly over time. The study demonstrates a statistically significant relationship between the inflation rate and the value of certain financial assets in which Poles invested their savings. During periods of increased inflation (quarterly inflation rate hovered around 2%), Poles increased their cash and deposit holdings, while during periods of high inflation (quarterly inflation rate hovered around 5%), Polish citizens reduced their cash and other holdings. The analysis was based on data from the National Bank of Poland's quarterly reports data for the period of 2004-2025 as well as data from the Central Statistical Office.

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Keywords: Household Savings, Personal Finance, The Impact of Inflation on Savings

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[1] Department of Financial Markets and Consumer Finance, University of Rzeszow, Poland, e-mail: jrodzinka@ur.edu.pl, ORCID: https://orcid.org/0000-0002-4003-0891.
[2] AGH University of Krakow, e-mail: piotrrodzinka@gmail.com, ORCID: https://orcid.org/0009-0007-8276-7270.

Introduction

Household savings are seldom a topic of interest in economic theory as they are crucial to the decisions these entities make regarding the allocation of income between current and future consumption. This issue has a significant impact on financial security, the ability to achieve short- and long-term goals, and resilience to unexpected events.

The current economic environment is becoming increasingly complex and uncertain. The changing geopolitical situation, which is causing high inflation, the volatility and complexity of financial markets, and the deepening demographic challenges, all contribute to the growing importance of household savings. It is undeniable that the scale and structure of household savings play a fundamental and significant role in the economy. They are a crucial channel for raising capital for the corporate sector, especially financial institutions, and a resource used to finance investments.

In an uncertain, increasingly complex market, households face the growing challenge of choosing the right financial instruments to store their wealth. Savings guarantee the household's functioning, providing stability and a sense of security, but can also be used to meet a wide variety of future needs.

Given the above, it seems reasonable to find answers to questions which are the goal of this study: how the level of savings among Polish households has changed over recent years and in what kind of financial instruments they have been accumulated. Over the past two decades, both globally and in Poland, we have often experienced economic turmoil, one of the primary consequences of which has been increased inflation. The goal of this study is to demonstrate the relationship between the value of the financial instruments in which Polish households store their savings and changes in the inflation rate.

The study hypothesizes that Polish households change the value of individual financial instruments in response to rising inflation. During periods of increased inflation, they shift their financial assets from cash to instruments that guarantee a stable income.

Answering this question seems justified, given that the period under review saw an increase in average wages and GDP growth, which may indicate improved living conditions and increased wealth. At the same time, the period was marked by periods of dynamic changes in the socioeconomic environment, resulting in periods of increased inflation. These economic and geopolitical fluctuations include financial and economic crises, the COVID-19 pandemic, and the outbreak of war in Ukraine. Analyzing changes in the structure of financial instruments held by households will determine whether periods of higher inflation influenced household savings decisions.

Literature review

According to Article 3, point 5 of the Act of 2 December 1999 on the National Census of Population and Housing in 2001 (Journal of Laws of 2000, No. 1, item 1), a household is defined as a group of people living and maintaining themselves together, or a single person maintaining themselves independently. The key aspect of a household is not the fact of kinship, but rather living together and sharing a budget and/or needs.

From an economic point of view, a household is a basic entity functioning in the economic system, a unit making decisions regarding the allocation of its resources, especially income, in order to maximize the utility of its members (Bywalec, 2012).

Households perform numerous functions in the economy, the most important of which are: income, production, savings, and investment. Income, savings, and investment are closely intertwined, as these are the three basic financial activities performed by households (Bywalec, 2012).

Savings are the portion of income that is not allocated to current consumption (Samuelson & Nordhaus, 2012). Household savings motives depend on many factors, but it is undeniable that they can be used to financially secure the future through investment, which leads to economic development (Thaler & Ganser, 2015).

Throughout history, economic theory has explored household savings. One of the earliest, classic concepts is the absolute income hypothesis, formulated by John Maynard Keynes. It explains household saving behavior by arguing that the level of consumption and saving depends on current disposable income. An increase in income leads to an increase in both consumption and saving, but the latter increases faster (Shefrin & Thaler, 1988).

In the mid-20th century, Milton Friedman proposed a slightly different approach. He argued that decisions regarding consumption and savings do not depend on current income, but rather on permanent income, i.e., the average income an individual expects to achieve throughout their lifetime. People are reluctant to give up their achieved standard of living, so in times of crisis, they use savings to maintain this level, while unexpected increases in income (temporary bonuses, profits) are saved (Friedman, 2018).

F. Modigliani and A. Ando published their theory around the same time. The life-cycle hypothesis posited that households plan their spending and savings over their entire lives. They strive to maintain a relatively stable level of consumption throughout their lives, thus saving a significant portion of their in-

come during periods of high income, while borrowing or depleting their savings during periods of low income (youth, retirement).

Classical theories of household behavior have been criticized as they assumed rational attitudes. The behavioral approach takes into account psychological factors such as emotions, self-control, habits, and social context. The behavioral life-cycle hypothesis, developed by H. Shefrin and R. Thaler, among others, was a modification of the traditional hypothesis. The authors argued that the temptation of higher income and self-control issues lead people to increase consumption levels, so an increase in income does not necessarily lead to an increase in savings. People divide their income into various "accounts" e.g., current consumption, savings, and future spending, approaching each of these "accounts" differently. According to this theory, saving results from psychological traits, not income level (Shefrin & Thaler, 1988).

Household savings have also been a subject of scholarly interest in contemporary times. Economists have studied the relationship between interest rates and savings levels, demonstrating that the propensity to save is positively correlated with real interest rates (McKinnon, 2010). Byrne explored the impact of fiscal factors on savings levels. Taxes, financial relief, and tax preferences are not considered tools that can significantly influence savings levels. Taxes reduce disposable income, and relief or preferences cannot radically offset this effect. Furthermore, these instruments lead to unfavorable trends in income distribution (Byrne, 1976).

Higher income is positively correlated with greater savings (Tsai et al., 2000). The influence of psychological factors on household financial behavior, including savings, has been discussed by Kantona (1975) and Kozielecki (1975), among others. Two factors are crucial in this regard: the functioning value system and the household's attitudes and expectations about the future. Demographic factors, such as the number of people under 18 and the share of low-income individuals, are also important. This is confirmed by research (Mapa, 2008) conducted in the Philippines, where population growth has led to an increase in the percentage of young people, leading to a decline in savings.

Household savings are influenced by a multitude of factors that impact them in multiple ways. As Nowak and Ryć (2002) point out, economic, social, psychological, and even political factors can hinder the growth of domestic savings in a given country. They point out that in Poland, an adequate supply of foreign capital can positively influence the growth of savings.

Among the factors influencing savings, Frączek (2012) listed: income, interest rate, fiscal policy, demographic factors, economic situation, psychological, social and cultural factors. Białowąs and Olejnik (2015) investigated the impact of the economic cycle phases on savings levels. Their research, conducted between 2007 and 2013 on a sample of 25 European countries, demonstrated a link between these variables. They observed the highest savings rates during the economic crisis phase, and the lowest during the final stage of the economic boom phase.

Rozmus and Trzęsiok (2017) focused on analyzing demand factors such as household income source, place of residence class, biological family type, and subjective assessment of income level. The study results showed that larger savings were reported by households of the self-employed, those living in large cities, married couples without children, and those with a better perception of their financial situation. In turn, a positive relationship between the level of financial knowledge and the propensity to save was demonstrated by Kłopocka's (2018) study. Interestingly, the level of financial knowledge was not identical to the level of education.

A. Wołoszyn and R. Głowicka-Wołoszyn examined the relationship between income, education level, and savings rate. Their research showed that the savings rate of Polish households increases in both periods of prosperity and recession. Increases in the income and education level of the household head are positively correlated with increases in the savings rate. Their study was conducted on a sample of approximately 35,000 households (Wołoszyn & Głowicka-Wołoszyn, 2015).

Rogowski and Lipski conducted a study of the relationship between the level and form of savings and the scale of household debt. During the period they analyzed, household deposits grew at a faster rate than loans, despite low interest rates and a rapidly growing economy. (Rogowski & Lipski, 2019)

Bretyn (2014) analyzed the structure of household savings in Poland for the period between 2005 and 2012. She found that significant changes occurred during the analyzed period. While bank deposits remained the dominant savings item among Poles, other financial instruments available on the market were becoming increasingly important. As Anioła and Gołaś (2013) pointed out, the largest increases in value were observed in mandatory savings (OFE), although voluntary savings still lagged. An interesting aspect of the the decline in value of the funds invested by households in funds and shares listed on the WSE is the fact that the majority of the decline as a result of the global financial crisis in 2008 may have been due to the decline in the value of these assets and, consequently, the withdrawal of investors from the stock market and the transfer of this capital to bank deposits or treasury securities.

Rudnicki (2018) studied the topic of household financial management, citing planning, financial deci-

sion-making, income accumulation, managing funds, saving, borrowing, and investing among its most important aspects. The study revealed that most households do not pay much attention to planning their expenses, both daily and investment-related, making it difficult to conduct a regular savings program. According to him, the most preferred methods of managing financial surpluses by Polish households are those that allow for immediate disposal of funds, which often do not compensate for the decline in purchasing power, ultimately resulting in a decline in the real value of accumulated savings. This behavior can be explained to some extent by insufficient risk analysis conducted by households, as discussed in more detail by Niedziółka (2022), who also points out that risk analysis should be an integral part of all financial decisions made by households.

A different approach to this issue is presented by Kłopocka (2013), who identified trends and determinants related to changes in household savings in Poland and the United States and pointed to the characteristics that connect these two environments. A similar study, limited to the domestic market, was conducted by Białowąs (2013).

Savings decisions are made at the micro level; there is a significant link between expectations regarding the financial and professional future, such as unemployment, and household financial demands. A well-implemented policy aimed at maintaining a low unemployment rate would have a significant impact on household savings decisions and reduce the volatility of household savings rates. These are the conclusions drawn from research on consumer confidence indicators and their impact on savings, conducted across 14 European countries (Kłopocka & Górska, 2021).

The literature review demonstrated that the topic of savings is frequently addressed. However, this issue is significantly broad, and therefore individual authors approach it differently, examining behaviors, motives, reasons for creating savings, and factors influencing the propensity to save. However, research to date has rarely examined households' responses to phenomena occurring in the world around them. This study will fill this gap, as the authors focus on examining whether and how households change the structure of their financial savings instruments in response to changes in inflation.

Gap identified under literature review

A review of the literature indicates that the issue of household savings is a topic frequently addressed by researchers. Authors have examined the relationships between savings and the life cycle, income, interest rates, and fiscal factors such as taxes, financial incentives, and tax preferences. Many authors have examined the influence of psychological factors, such as the functioning value system and attitudes, and household expectations about the future on households' approach to saving. Economic, social, psychological, and even political factors have been analyzed. Some authors have examined the relationships between savings and income, interest rates, fiscal policy, and even demographic factors, the economic situation, social, and cultural factors. Authors have focused on the rationale for saving, household sources of income, and ways of managing financial surpluses. Studies on the structure of household savings have also been identified. However, no studies have been found on the impact of inflation on changes in the savings structure of Polish households. At first glance, this may seem strange, given that inflation is a widely known phenomenon, relatively easy to explain and understand even by those without a high level of economic knowledge. Furthermore, households associate inflation (especially high inflation) with something bad negatively impacting the value of money and savings. Research indicates that approximately 60% of Polish citizens rate their financial knowledge as average, while approximately 20% rate it as high or very high (KRD Report, 2024). Furthermore, the results of the "Level of Financial Knowledge of Poles 2023" study, conducted by CBM Indicator for the Warsaw Stock Exchange and the Warsaw Institute of Banking, indicate a certain contradiction: the vast majority of Poles experience the negative effects of inflation, while their theoretical knowledge of inflation mechanisms is low, and financial concepts are often puzzling (Level of Financial Knowledge of Poles 2023, 2023).

The impact of inflation on household savings behavior has also been studied. Most studies have focused on aspects related to a more economical approach to spending. Barszcz's research focused on the impact of inflation on the average consumer's basic spending (Barszcz, 2022).

High inflation causes consumers to pay more attention to product prices and price-to-quality ratios. They avoid purchasing unnecessary products, take advantage of promotions more often, and limit spending on entertainment, culture, and leisure. Research conducted at the end of 2022 showed that most respondents indicated that they were moderately (29%) or very (64.5%) affected by the current inflation (Zulczyk et al., 2023).

A study titled "Poles on Inflation," conducted in 2023 by the Public Opinion Research Center, found that poorer households were forgoing unnecessary purchases, limiting certain expenses, postponing them, and were more likely to go into debt. Wealthier households, on the other hand, invested their savings to prevent them from depreciating. Approximately 16% of households used this strategy (CBOS, 2023). Research

by A. Gas, A. Kawa, and K. Kleszcz confirmed that in times of inflation, households, particularly those with larger portfolios, aim to protect their financial resources from depreciation by investing them in riskier financial instruments (Gas et al., 2023).

Based on the literature review, it can be concluded that the topics of inflation and savings have been discussed, but the authors focused on other aspects related to these issues. The fact that households, during periods of inflation, attempt to protect their financial assets against depreciation by investing them in more effective financial instruments was only marginally addressed, but the directions of financial flows were not indicated. In this study, the authors will attempt to determine whether and how the structure of household savings changed during periods of elevated inflation. Data on Poles' savings will be derived from the National Bank of Poland (NBP) quarterly financial accounts reports.

Methodology

In 2013, the European Central Bank (ECB) introduced guidelines for central banks of EU member states whose currency is the euro. This document required financial institutions to collect, compile, and submit quarterly financial account statistics to the ECB (Guideline ECB/2013/24). Although Poland has not adopted the euro as its currency, the National Bank of Poland (NBP) has been preparing such reports covering the period from the fourth quarter of 2003 for financial balance sheets and from the first quarter of 2004 for transactions (NBP Explanations).

Financial accounts are a statement presenting the financial assets and liabilities of separate groups of domestic entities classified into 5 resident sectors:
- non-financial enterprises,
- financial institutions,
- central and local government institutions,
- households,
- non-profit institutions serving households, the foreign sector.

Sectors are further divided into subsectors. These financial assets and liabilities include the following financial instruments:
- monetary gold and special drawing rights (SDRs),
- cash and deposits,
- debt securities,
- credits and loans,
- equity shares and shares/units in investment funds,
- insurance, pension and standardized guarantee schemes,
- derivatives and employee stock options,
- other amounts receivable/payable.

The listed instruments are divided into subcategories, as outlined in Annex 2 to the NBP Explanatory Notes. The instruments are classified according to their economic nature. Only some of the financial instruments mentioned above apply to households, which for the purposes of this study have been divided into the following 9 groups, which include the subgroups mentioned:

1. Cash - (A)F.21 - (Cash).
2. Deposits - (A)F.2 - (Deposits):
   A) Current settlement deposits (A)F.22.
   B) Other deposits (A)F.29.
3. Debt securities - (A)F.3 - (Debt securities):
   A) Short-term debt securities (A)F.31.
   B) Long-term debt securities (A)F.32.
4. Credits and loans - (A)F.4 - (Credits and loans):
   A) Short-term credits and loans (A)F.41.
   B) Long-term credits and loans (A)F.42.
5. Shares and equity participations - (A)F.51 – (Shares and equity participations):
   A) Listed shares (A)F.511.
   B) Unlisted shares (A)F.512.
   C) Other equity participations (A)F.519.
6. Investment fund shares or units - (A)F.52 - (Investment funds):
   A) Money market fund shares or units (A)F.521.
   B) Non-money market fund shares or units (A)F.522.
7. Insurance, pension, and standardized guarantee schemes - (A)F.6 - (Insurance):
   A) Technical reserves for other personal and property insurance and reserves to cover payment demands under standardized guarantees (A)F.61 + (A)F.66.
   B) Entitlements under life insurance and annuities (A)F.62.
   C) Pension and pension entitlements, receivables of pe-nsion funds from entities managing them, and entitlements to benefits other than pensions (A)F.63+(A)F.64+(A)F.65.
8. Derivatives and employee stock options (A)F.7 - (Derivaties).
9. Other accounts receivable/payable - (A)F.8 - (Other):
   A) Trade credits and advances (A)F.81.
   B) Other accounts receivable/payable, excluding trade credits and advances (A)F.89.

The above points indicate the actual names of financial instruments used in NBP reports, followed by the NBP identification code, and in parentheses are the abbreviated names of the instruments, which will be used from now on in this paper. The decision to use abbreviated names stems from the fact that some of the above instruments have extensive names, which could complicate the description and clarity of the content.

In its study on financial assets and liabilities of individual groups of domestic entities, the National Bank of Poland classifies as a household natural persons including natural persons running a business on their own

account employing up to 9 persons, individual farmers, non-public health care facilities and non-public schools run by natural persons.

NBP prepares data on individual financial instruments and sectors using its own IT systems, as well as with the assistance of institutions such as the Central Statistical Office, the Polish Financial Supervision Authority, and the National Depository for Securities.

The data collected in this manner were used for the analyses presented in this study. Data on the household sector and the financial instruments held by households were used. Transaction data for the entire available time series, from Q1 2004 to Q3 2025, were analyzed.

Price change data were also used in the study. Quarterly inflation rates published by the Polish Central Statistical Office were used to calculate the impact of inflation on Poles' savings.

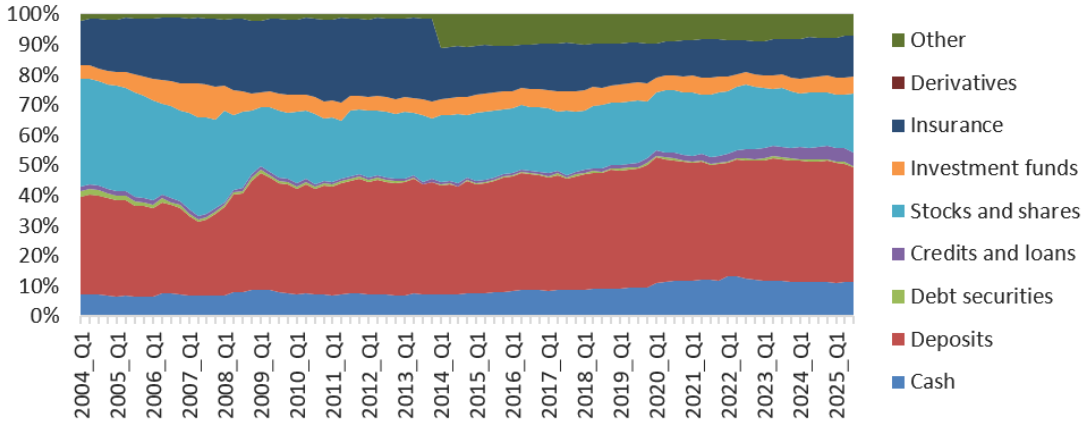
Structure indices were used to analyze the collected empirical material. The arithmetic mean and median and the range and standard deviation were calculated as measures of dispersion. In addition, the studied characteristics were analyzed for the strength and direction of the linear relationship. For this purpose, Pearson's correlation coefficient and the significance between individual instruments were used, which indicated whether a relationship existed between the two variables under study.

The above analyses were calculated using Microsoft Excel and IBM SPSS Statistical Viewer.

Results

In Q3 of 2025, households held financial instruments worth 3,654,272 million PLN, with the largest shares being deposits (37.5%), equity shares (21.6%), insurance schemes (16.2%), and cash (9.6%). The share of individual items changed significantly over the analyzed period. At the beginning of 2004, the largest shares were stocks and shares (35.7%), deposits (32.5%), insurance (14.5%), and cash (7.1%).

Figure 1: Structure of financial instruments held by households in the period 1Q 2004 - 3Q 2025



Source: Authors own work based on data from the National Bank of Poland.

The highest average share of financial assets in the period under review was held by deposits, stocks and shares, insurance, and cash. The highest share in the asset structure throughout the entire period under review was observed for deposits in Q1 2020 (41.7%). The largest range, a measure of dispersion calculated as the difference between the highest and lowest observed value of a given parameter, was observed for insurance (17.8 percentage points), stocks and shares (17.6 percentage points), and deposits (17.2 percentage points).

Analyzing changes in the structure of financial instruments held by households using the basic measure of volatility, standard deviation, it should be noted that insurance, stocks and shares, and deposits were characterized by the highest volatility.

Table 1: Structure of financial instruments held by households in the period 1Q 2004 - 3Q 2025

Financial instrument	Average	Median	Min.	Max.	Gap	Standard deviation
Cash	8.8%	8.1%	6.7%	13.1%	6.5	0.01926
Deposits	36.2%	37.4%	24.5%	41.7%	17.2	0.03848
Debt securities	0.7%	0.6%	0.3%	1.9%	1.6	0.00367
Credits and loans	1.6%	1.1%	0.7%	4.6%	3.9	0.01036
Stocks and shares	23.2%	21.4%	18.1%	35.7%	17.6	0.04984
Investment funds	5.8%	5.7%	4.0%	11.0%	7.0	0.01420
Insurance	17.9%	16.0%	10.3%	28.1%	17.8	0.05449

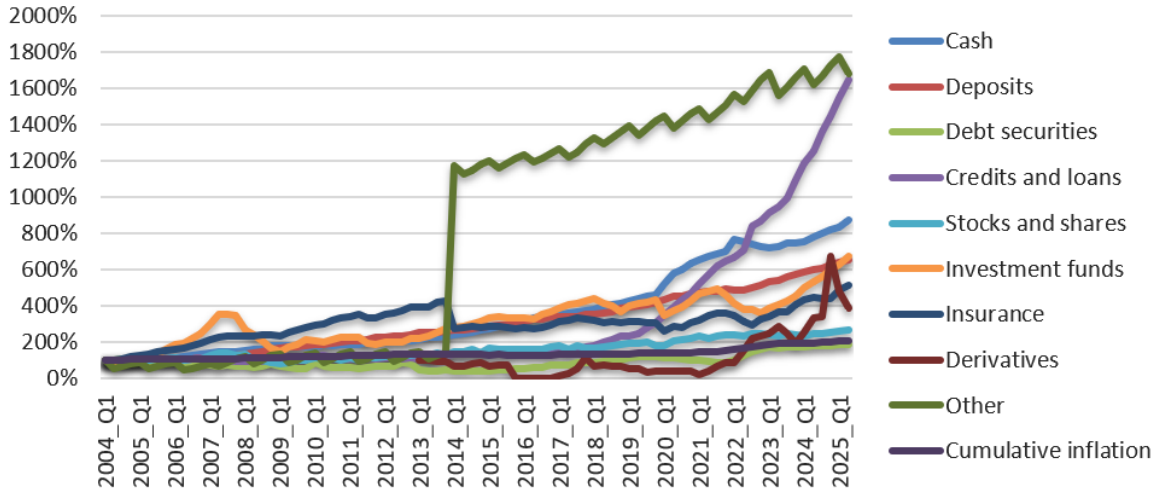
Financial instrument	Average	Median	Min.	Max.	Gap	Standard deviation
Derivatives	0.0%	0.0%	0.0%	0.0%	0.0	0.00001
Other	5.7%	7.6%	0.9%	11.3%	10.4	0.03958

Source: Authors own work.

The lowest level of volatility, measured by standard deviation, was observed in the share of debt securities (their share in Poles' portfolios ranged from 0.3% to 1.9%).

Over the period analyzed, Poles' financial assets increased significantly, with their total value increasing almost six-fold.

Figure 2: Changes in the value of household assets compared to Q1 2004

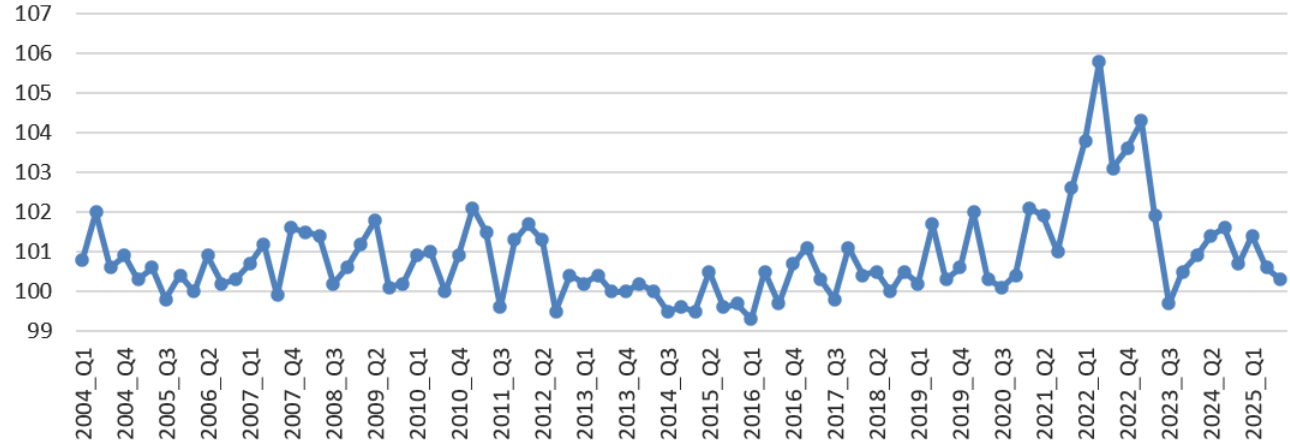


Source: Authors own work based on data from the National Bank of Poland and the Statistics Poland.

The largest increase was observed in the value of other instruments and loans. The value of these assets increased over seventeen-fold. This significant increase stems from their very low starting levels. In Q3 2025, Poles held over nine times more cash and over six times more investment funds and deposits in their portfolios than in Q1 2004. This increase in value is impressive considering that cumulative inflation during this period reached 205.8%.

Inflation in Poland over the past twenty-two years has been low and stable in most of the analyzed periods. However, there were several specific periods when the inflation rate rose sufficiently to be considered a deviation from the norm. The first such specific periods of elevated inflation were 2008-2009 and 2011. Inflation rose due to, among other factors, the financial crisis triggered by the collapse of mortgage banks in the US. However, the quarterly inflation rate did not exceed 102.1 at that time. The next nearly ten years saw a stable period of low inflation, with the rate only beginning to rise in 2020. The main reasons for the inflation increase were the outbreak of the Covid-19 coronavirus pandemic and the outbreak of the war in Ukraine. High inflation was observed in 2022-2023. Then, in Q2 2022, Poland recorded a record quarterly inflation rate of 105.1.

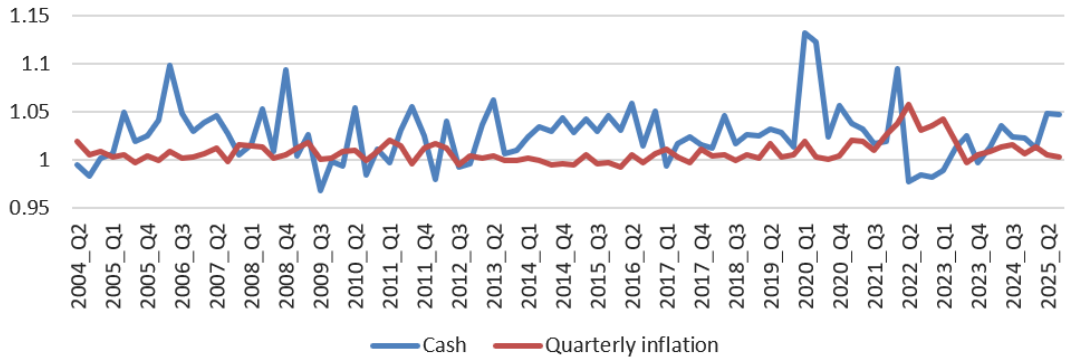
Figure 3: Quarterly inflation rate in the period 1Q 2004 - 3Q 2025



Source: Authors own work based on data from the Statistics Poland.

The relationship between the quarterly inflation rate and the value of financial instruments held by households is presented below. Changes in the value of instruments are presented as a ratio of quarterly change to the previous quarter. This approach allows us to identify quarters in which the value of the asset held decreased compared to the previous quarter.

Figure 4: Change in cash value (previous quarter = 100) and quarterly inflation rate

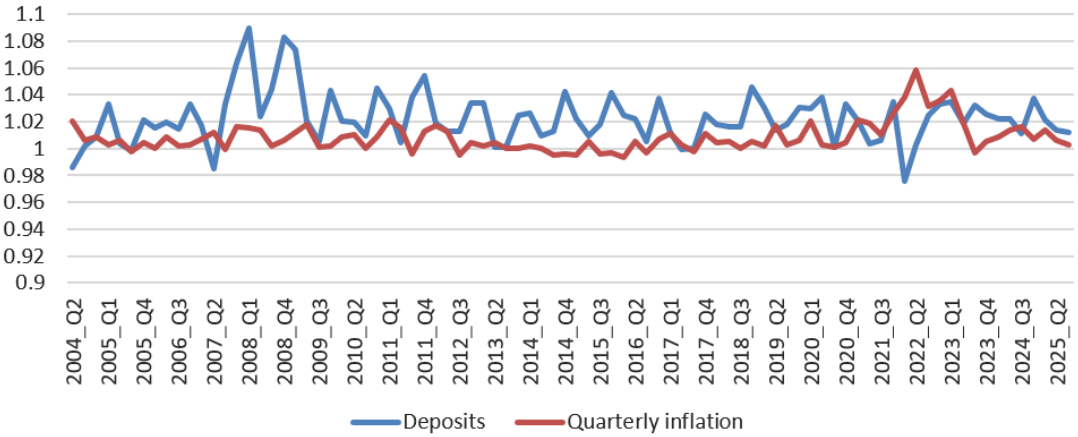


Source: Authors own work based on data from the National Bank of Poland and the Statistics Poland.

During the analyzed period, 16 quarters were observed in which the value of cash held by households was lower compared to the previous quarter. Three periods stand out: Q1 2024 - Q2 2004; the period from Q3 2009 to Q4 2012, where eight of the fourteen quarters were negative; and the period from Q2 2022 to Q1 2023, where households had decreasing cash holdings for four consecutive quarters.

The average quarter-on-quarter change in cash was positive at 2.6%. We can identify 40 quarters with above-average changes in cash values. The following periods are particularly noteworthy: Q1 2006 - Q3 2007, Q2 2014 - Q2 2016, where cash values consistently grew faster than average, and Q2 2019 - Q2 2021, where seven of the nine quarters experienced above-average growth. This suggests that households were more inclined to hold cash during these periods.

Figure 5: Change in the value of deposits (previous quarter = 100) and quarterly inflation rate

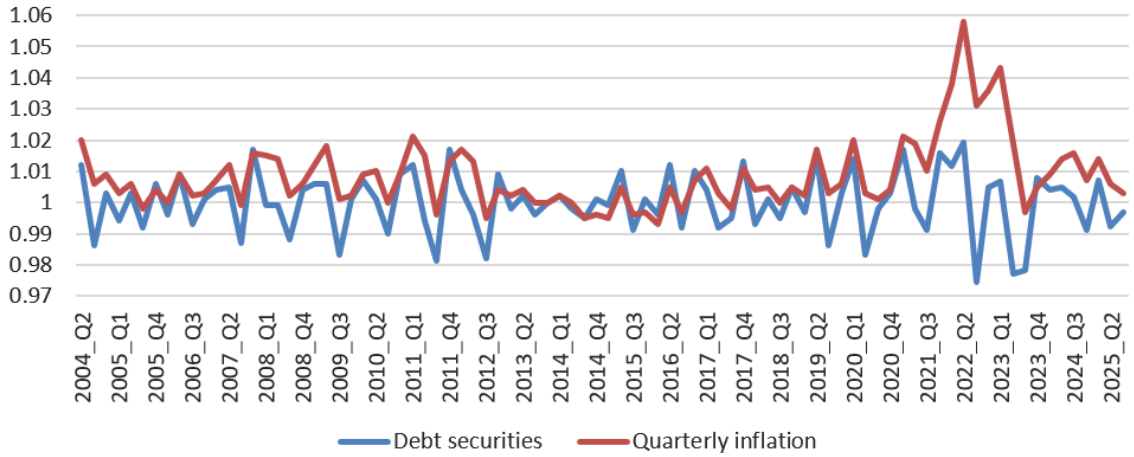


Source: Authors own work based on data from the National Bank of Poland and the Statistics Poland.

During the analyzed period, the value of household deposits was distributed across 80 of the 86 analyzed quarters. Deposits declined only in Q2 2004, Q3 2005, Q2 2007, Q2 and Q3 2017, and Q1 2022.

The average quarter-on-quarter growth rate of household deposits was positive at 2.2%. We can identify 36 quarters with above-average changes in deposit values, but two periods are noteworthy: Q3 2007 - Q1 2009, where deposit values consistently grew faster than average, and Q1 2022 - Q4 2023, where deposit values grew faster than average in five out of six quarters.

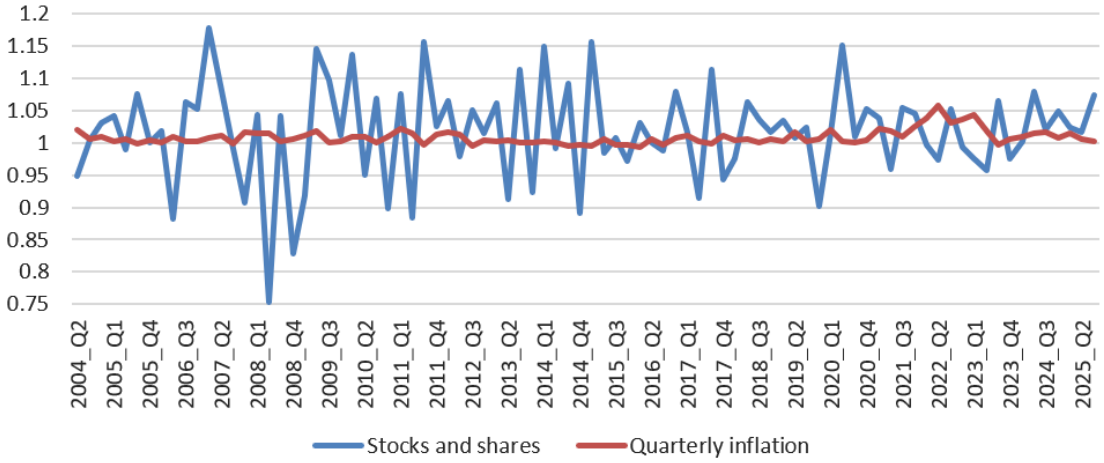
Figure 6: Change in the value of debt securities (previous quarter = 100) and quarterly inflation rate



Source: Authors own work based on data from the National Bank of Poland and the Statistics Poland.

Debt securities, which grant their holders the unconditional right to receive a contractually specified fixed or variable monetary income, include treasury bills, treasury bonds, bonds issued by entities other than the State Treasury, and mortgage bonds (NBP Explanations), which have been characterized by high volatility, but with low fluctuations. For these instruments, only one specific period can be identified when their value increased for four consecutive quarters: Q4 2023 - Q3 2024, during which their growth was above average.

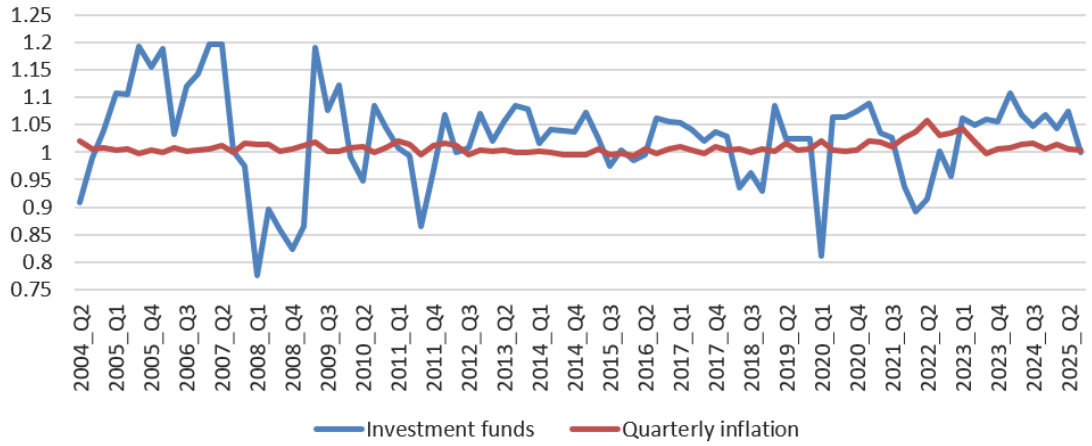
Figure 7: Change in the value of shares and equity interests (previous quarter = 100) and quarterly inflation rate



Source: Authors own work based on data from the National Bank of Poland and the Statistics Poland.

The first thing that stands out when analyzing the data presented in the figure above is that in the case of shares and stocks, large fluctuations in their value can be observed from quarter to quarter. The value of these financial instruments fell in the periods: Q3 2006 - Q2 2007, Q2 2006 - Q1 2010, Q2 2018 - Q4 2021 (excluding two quarters: Q4 2019 and Q2 2021), and Q1 2024-Q3 2023. Significant declines were recorded in the periods: Q3 2007 - Q1 2009 (excluding Q1 2008 and Q3 2008) and Q1 2022 - Q2 2023 (excluding Q3 2022). However, during the analysis it should be noted that the NBP values these financial instruments at their market value, so changes in the value of these instruments could result from changes in their value and not from the withdrawal of financial resources from households.

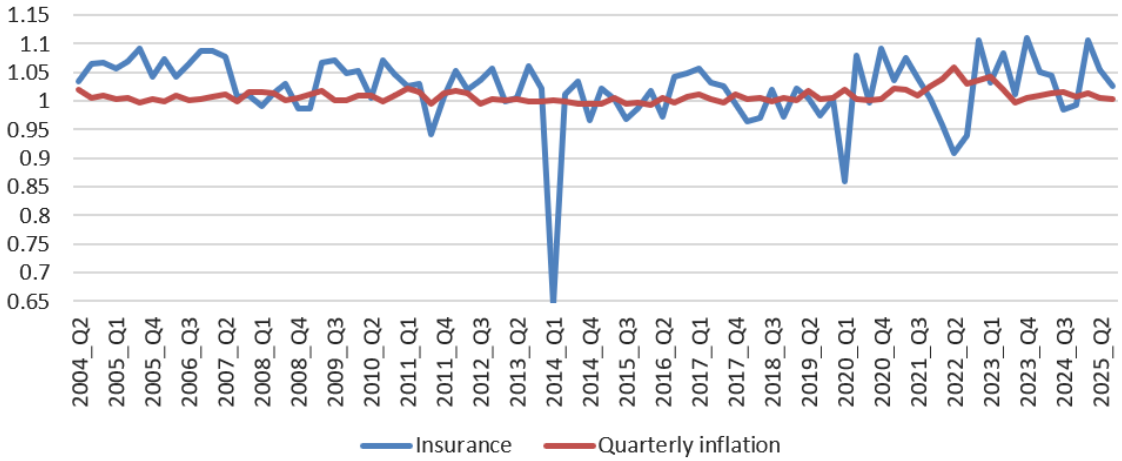
Figure 8: Change in the value of investment funds (previous quarter = 100) and the quarterly inflation rate



Source: Authors own work based on data from the National Bank of Poland and the Statistics Poland.

The value of assets invested in investment funds decreased in the first two quarters of the analysis, followed by twelve quarters of growth. In Q4 2007, the trend reversed, with six consecutive quarters of decline compared to the previous period. Subsequently, from Q1 2012 onward, the value of assets invested in this financial instrument increased, except for brief, yet often spectacular, periods of decline, such as in Q1 2025, when the value of assets fell by almost 19% quarter-value of funds decreased by approximately 27% over five quarters. In the aforementioned periods, when the value of investment funds increased, these increases were higher than average. In the case of investment funds, as with stocks and shares, the National Bank of Poland (NBP) reports their value at market value (net asset value of investment funds), so changes in value here may also result from price fluctuations in financial markets.

Figure 9: Change in insurance value (previous quarter = 100) and quarterly inflation rate



Source: Authors own work based on data from the National Bank of Poland and the Statistics Poland.

Insurance, as an asset, increased its value relatively steadily over the analyzed period. Three critical events unrelated to financial market development are noteworthy: the reform of the pension insurance system in Poland, which shifted funds from Open Pension Funds to the Social Insurance Institution (ZUS) in Q1 2014, resulting in a decline in asset value by nearly PLN 150 billion; then the outbreak of the COVID-19 coronavirus pandemic in Q1 2020, and the outbreak of war in Ukraine in Q1 2022.

The above analysis indicates a relationship between the inflation rate and the assets in which Polish households invest their savings. Typically, the periods indicated in the text, when the value of individual financial assets changed dramatically, were associated with elevated inflation rates. To prove the relationship between inflation and financial assets, a Pearson correlation analysis was performed using IBM SPSS Statistic Viewer software.

Bilateral significance was also determined, which indicates whether the calculated strength of the relationship between two variables is statistically significant. Bilateral significance of less than 0.05 is assumed to indicate that the relationship between the variables is statistically significant.

Table 2: Pearson correlation coefficient and significance between individual financial instruments and quarterly inflation rate

Financial instrument	Pearson correlation coefficient	Significance
Cash	0.403	<0.001
Deposits	0.294	0.006
Debt securities	0.365	<0.001
Credits and loans	0.325	0.002
Stocks and shares	0.316	0.003
Investment funds	0.150	0.164
Insurance	0.095	0.382
Derivatives	0.211	0.050
Other	0.214	0.047

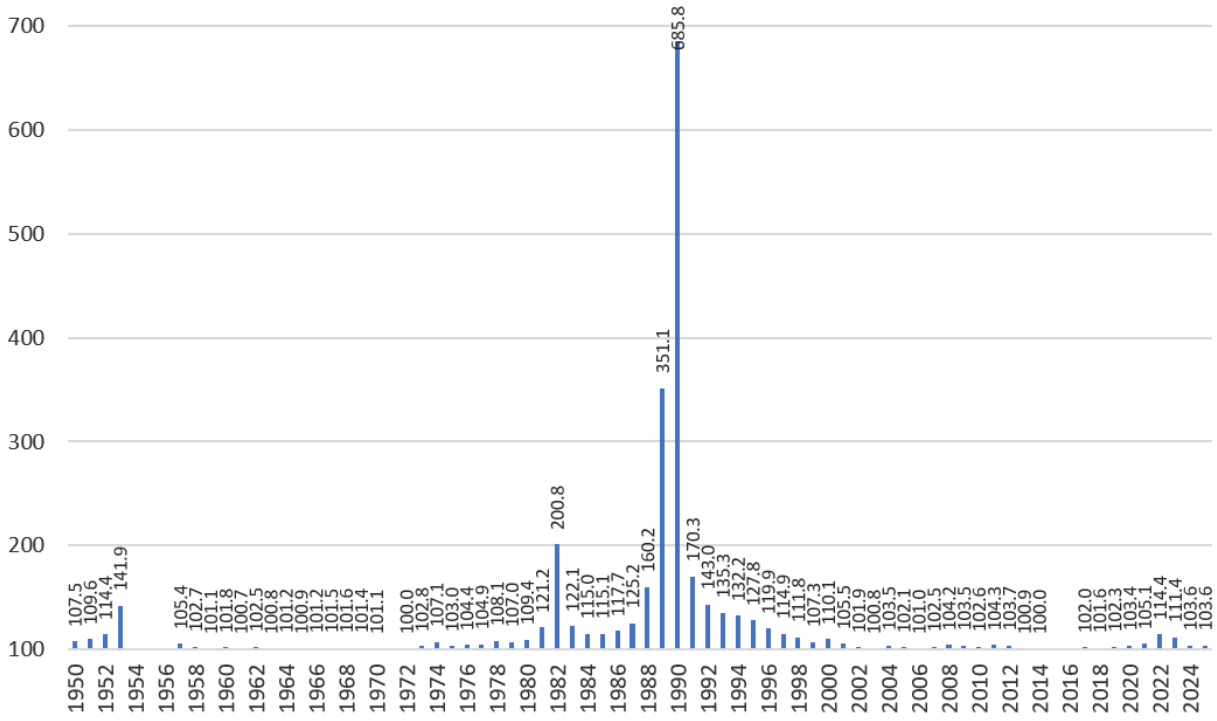
Source: Authors own work.

Analysis revealed a statistically significant relationship between the quarterly inflation rate and the value of individual financial instruments. Pearson correlation coefficient analysis revealed the strongest relationship between the value of household cash and the inflation rate. A statistically significant relationship, albeit somewhat weaker, was also found for debt securities, loans, stocks, and deposits. Inflation does not affect the level of investment funds and insurance holdings

Discussion

Inflation is perhaps the most widely known economic concept to the average Pole. While the average citizen may not be able to provide a precise definition of this phenomenon, they are aware of its existence and its impact on their daily lives, for example, by observing the changing prices of goods and services during everyday purchases and realizing the impact this has on their household budget. Existing in an environment of high inflation is a relatively rare phenomenon in Poland.

Figure 10: Annual inflation rate in Poland 1950-2025

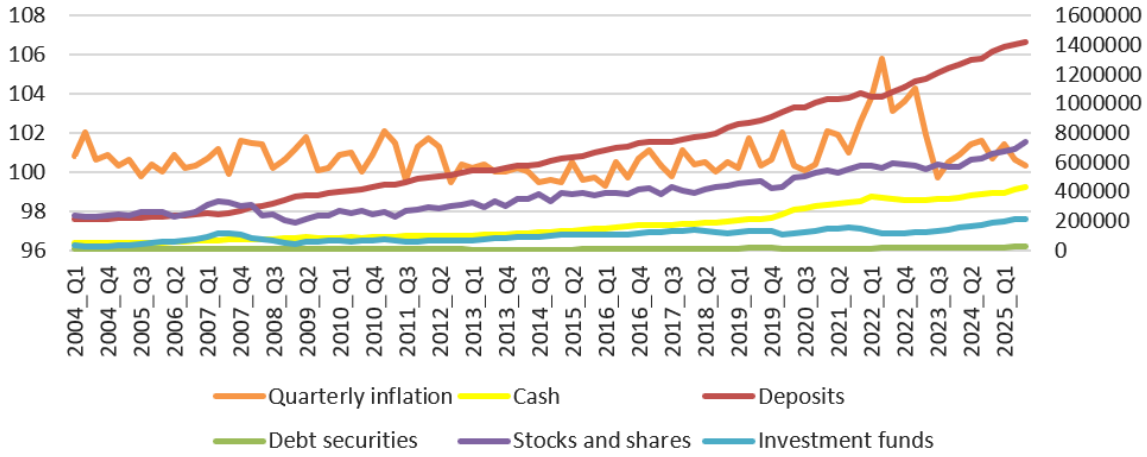


Source: Authors own work based on data from the Statistics Poland.

Only the oldest Poles remember the hyperinflation of the late 1980s and early 1990s. Since then, inflation has been controlled, and considering the time period analyzed in this study, there are only a few periods where this indicator could have raised concerns among Poles. Inflation in the periods 2008-2011 and 2020-2023 was elevated, and, as the research presented in this study shows, Poles responded by changing the structure of their assets. The increased inflation was, of course, a consequence of the global political and economic situation, but it was precisely this effect that influenced Poles' decisions.

During the financial crisis of 2008-2013, when quarterly inflation even exceeded 2%, Poles abandoned stocks and shares, debt securities, investment funds, and insurance, and instead increased their cash and deposit holdings.

Figure 11: Value of cash, deposits, debt securities, shares and stocks, investment funds (in PLN million) (right axis), quarterly inflation rate (left axis) in the period 1Q 2004 - 3Q 2025



Source: Authors own work based on data from the National Bank of Poland and the Statistics Poland.

The period 2020-2023, in turn, saw a series of negative events, such as the COVID-19 pandemic and, later, the outbreak of war in Ukraine. Similar behavior among Poles can be observed during this period. In the initial period, during the pandemic, Poles withdrew their savings primarily from debt securities, shifting them to cash, deposits, and stocks and shares. Inflation during this period was not yet very high, with the quarterly inflation rate hovering around 2%.

Only the outbreak of war in Ukraine and the rise in quarterly inflation to levels exceeding 5% prompted another behavioral change for Poles. Interestingly, Poles were reducing their holdings of cash, stocks, shares, and investment funds, while increasing their holdings of deposits and debt securities. This behavior, given the high inflation rate, may suggest that, despite the turmoil, Poles wanted to protect their cash savings from the negative effects of high inflation. Despite the very uncertain situation due to the war that broke out and then continued right on our borders, Poles were moving away from cash, but they didn't want to take too much risk and instead invested their savings in certain financial instruments, such as deposits and debt securities.

The results of the research presented in this study generally confirm the findings of other researchers. Nowak and Ryć (2002) indicated that Poles' savings are influenced by economic and political factors, while Frączek (2012) pointed to the significant role of interest rates and the economic situation, among other factors. Bretyn (2014) examined the structure of savings. Although she used slightly different source data, from the Central Statistical Office and the online industry portal analiz.com, and a shorter time period of 2005-2012, the conclusions drawn from her research are similar. Similar conclusions also emerge from the research by Anioł and Gołaś (2013).

Based on the above, it should be concluded that the results presented in this study do not contradict the research of other scholars. They confirm and expand on previously acquired knowledge. Their greatest strengths, however, are their timeliness, the long analysis period, and the number of observations.

The results of the study confirmed the research hypothesis that Polish households change the value of individual financial instruments in response to rising inflation. During periods of geopolitical uncertainty, they increase their cash and deposit holdings, while during periods of increased inflation, they shift their financial resources from cash to instruments that guarantee a stable income.

Conclusions

In financial theory, the concept of a financial cushion exists. It is defined as the amount of accumulated savings that every household should have for emergencies, such as illness or job loss. A financial cushion is intended to ensure financial liquidity and operational security. For security, a household should accumulate between three and six months' income in this way. Having savings is extremely important, but it also presents certain dilemmas, because once a household has financial resources, it must decide in which financial assets to store them.

The National Bank of Poland compiles a quarterly report detailing the assets in which households hold their savings. Based on this data, it can be clearly concluded that the security of these funds is paramount for households, with the vast majority held in cash and deposits. However, the structure of household assets has changed in recent years. This study uses the years 2004-2025 as the research period, as data from the NBP was available for this period. This was also the period during which the phenomena of interest to the authors could be observed.

Research findings confirmed that households respond to changes in the inflation rate by changing their financial assets. High inflation is a consequence of political and economic turmoil. Research has shown that during periods of increased inflation, households direct their savings to safer financial instruments, such as cash and deposits. This behavior was observed when the quarterly inflation rate did not exceed 2.1%. However, when quarterly inflation began to fluctuate around 5%, Poles reduced their financial instrument holdings (including cash) in favor of deposits and debt securities.

The research conducted in this study has its limitations. The most significant is that the study area covers only Poland, meaning the results can only be directly applied to that country. Differences between countries and the organization of financial systems can lead to much more interesting conclusions, but above all, comparisons.

Knowing these limitations, subsequent stages of the study will allow for the expansion of the analysis to include other countries that report "Financial Account" data to the ECB. This represents significant potential, as the data for each country is prepared using the same methodology, enabling international comparisons. This was also one of the reasons why NBP data were used as a measure of household savings. This study is a preliminary step in a larger study encompassing all countries reporting "Financial Account" data to the ECB.

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