TRANSBORDER ECONOMICS
Vol. 7, No. 2, pp. 7–18
ISSN 2451-3229 eISSN 3072-5798
DOI: 10.15584/te.2025.7.2.1

THE RATCHET EFFECT AND THE FLIGHT TO NON-BANK LENDERS: BEHAVIOURAL CONSEQUENCES OF RESTRICTIVE MONETARY POLICY IN POLAND

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ABSTRACT

The article presents an in-depth examination of the mechanisms of household credit indebtedness in Poland, integrating macroeconomic indicators with insights from behavioural economics. The study elucidates the primary determinants of consumption smoothing financed through external sources of credit. Drawing on data from the OECD, the Polish Financial Supervision Authority (KNF), and the Credit Information Bureau (BIK), the paper identifies a pronounced structural bifurcation in the Polish credit market. The transmission of restrictive monetary policy through the WIBOR index has exerted a substantial constraining effect on the volume of traditional bank lending. As a consequence, a marked reallocation of credit demand is observed: households, seeking to stabilize their consumption trajectories in the context of declining real incomes and increasingly stringent banking regulations, are progressively shifting towards the dynamically expanding non-bank lending segment. Quantitative analyses indicate a profound structural transformation of the market: the value of non-bank loan sales increased from PLN 4.7 billion in 2020 to PLN 16.3 billion in 2024. These findings point to significant systemic vulnerabilities associated with this reorientation of credit flows and underscore the urgency of strengthening macroprudential oversight as well as enhancing the scope and effectiveness of financial education initiatives.

Key words: SME sector, Polish economy, analysis.
JEL: G51, D14, G21.

1. Introduction and Research Problem

Households represent one of the key sectors of the contemporary financial system, and their propensity to assume credit liabilities exerts a direct influence

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on the dynamics of domestic demand and, consequently, on the rate of economic growth. The indebtedness mechanism is a complex, multidimensional phenomenon whose comprehensive understanding necessitates the integration of a macroeconomic perspective with insights derived from behavioural finance.

In recent years, the Polish financial market has been subject to profound turbulence induced by the post-pandemic recovery process, the outbreak of the war in Ukraine, elevated inflationary pressures, and unprecedented increases in central bank policy rates. Against this backdrop, the primary objective of this article is to identify the determinants underlying household credit decisions and to assess the mechanisms shaping the level, structure, and dynamics of the indebtedness of Polish households in a newly emerged, highly volatile macroeconomic environment.

To address the formulated research problem, the study proposes and empirically verifies the following research hypotheses:

H1: There exists a strong, statistically significant, negative relationship between the tightening of monetary policy—operationalized as increases in the central bank's reference rates and the WIBOR index—and the volume of traditional consumer loans extended by the commercial banking sector.

H2: Under the influence of the ratchet effect, households that are excluded from access to traditional bank credit as a result of more stringent regulatory requirements and rising capital costs reallocate their borrowing activity toward the non-bank lending segment in order to sustain their consumption levels, thereby contributing to the dynamic expansion of the shadow banking sector.

2. Research Methodology

The research procedure was based on a systematic literature review in the field of macroeconomics combined with secondary data analysis (desk research). The structure and dynamics of indebtedness were examined using statistical data from the Organisation for Economic Co-operation and Development (OECD), cyclical reports of the Polish Financial Supervision Authority (KNF) on the situation of the banking sector (FINREP reports), data from the Credit Information Bureau (BIK), and reports of the National Bank of Poland (NBP). The selection of these sources made it possible to address the research problem both from a broad European perspective and with a detailed breakdown between the Polish banking and non-banking sectors.

The primary empirical analysis covers the period 2012–2025 and is supplemented with historical reference data starting in 2008. This time horizon was deliberately chosen to encompass both phases of prolonged macroeconomic stability and periods of exogenous shocks of unprecedented scale, including the post-pandemic recovery and the inflationary surge associated with the outbreak of the war in Ukraine. Such an extended observation window provides a robust basis for comparative analysis of credit behaviour under heterogeneous monetary policy regimes.

In addition to descriptive statistics, the study applies quantitative methods, in particular Pearson's correlation coefficient, to formally assess the strength and direction of the relationship between interest rates and loan volumes. This analytical approach enables a statistically grounded verification of the extent to which the tightening of monetary policy is transmitted into effective consumer credit demand.

3. Theoretical and Behavioural Determinants of Indebtedness

Contemporary economic explanations of household indebtedness are predominantly grounded in two foundational paradigms: the life-cycle hypothesis (LCH), pioneered by F. Modigliani (1954), and the permanent income hypothesis (PIH), formulated by M. Friedman (1957). Modigliani's framework posits that individuals allocate consumption and savings intertemporally over their entire lifespan so as to optimize the intertemporal distribution of utility across different stages of life. Within this framework, a central determinant of credit demand is the age of the economic agent, in conjunction with labour market status and household composition (Kata et al., 2021). Over the household life cycle, heterogeneity in borrowing patterns reflects evolving needs, typically transitioning from long-term liabilities (e.g., mortgage debt) in early adulthood towards borrowing primarily aimed at consumption smoothing in later phases of life.

In contrast, Friedman's PIH asserts that consumption decisions are determined not solely by current income, but by "permanent" income— defined as the expected long-run average income stream over the life cycle, though contemporary heterogeneous agent models demonstrate that households frequently encounter liquidity constraints that disrupt perfect consumption smoothing (Kaplan and Violante, 2022). Both theoretical constructs imply a rational intertemporal budget constraint: while a household cannot, over the long run, consume beyond the present value of its permanent income, it may reallocate consumption across time by using external borrowing. Although these classical models provide a rigorous rational benchmark for understanding indebtedness, they do not fully capture decision-making under conditions of pronounced macroeconomic uncertainty and binding credit constraints.

A more comprehensive account of contemporary debt dynamics necessitates the incorporation of insights from behavioural economics. From this perspective, debt instruments function as mechanisms that allow households to sustain elevated consumption levels in the face of temporary income shocks. Empirical observation suggests, however, that when real income declines, households frequently fail to adjust their expenditures downward in a manner consistent with classical rationality. Instead, they exhibit a "ratchet effect," originally conceptualized within J. Duesenberry's Relative Income Hypothesis (Duesenberry, 1949). Duesenberry argued that consumption patterns display a strong asymmetry: once a given standard of living has been attained, households are markedly reluctant to reduce it, even when their financial capacity deteriorates.

Within behavioural finance, this rigidity is further rationalized by loss aversion and present bias. The disutility associated with a reduction in consumption is perceived as substantially greater than the utility derived from an equivalent increase, which makes downward adjustments particularly painful. As a result, households often resort to loans and other financial instruments to artificially sustain previously attained consumption levels.

During phases of restrictive monetary policy, when commercial banks tighten credit scoring criteria and raise the cost of capital, low- and middle-income households are disproportionately affected by credit rationing and increased financial vulnerability. Under the combined influence of the ratchet effect and a behavioural aversion to lowering their standard of living, these households increasingly turn to the non-bank credit sector (shadow banking). Although such alternative sources of finance are typically associated with substantially higher total borrowing costs (e.g., a higher APRC), the behavioural drive for short-term consumption smoothing can temporarily dominate considerations of long-term financial optimality. This, in turn, contributes to structural reconfigurations in the composition and distribution of household debt within the broader credit market (Waliszewski and Czechowska, 2019; Gemzik-Salwach and Perz, 2015).

4. Research Results and Discussion

The level of household indebtedness is closely linked to the volume of disposable income available to consumers, and this relationship exhibits a dual character. On the one hand, household with insufficient income frequently resort to borrowing to satisfy urgent consumption or liquidity needs, which results in an increase in short-term debt. On the other hand, access to credit is conditional on adequate creditworthiness, meaning that individuals with higher material status can more easily contract substantial, long-term financial liabilities. These mechanisms, clearly observable at the microeconomic level, are directly reflected in the macroeconomic differentiation of indebtedness across countries at varying stages of economic development.

In comparative perspective within the European Union, Poland continues to be characterized by a relatively low and macroeconomically safe ratio of household debt to nominal disposable income (see Figure 1). In 2024, this indicator for Poland amounted to only 49%, compared with an EU average of 106%.

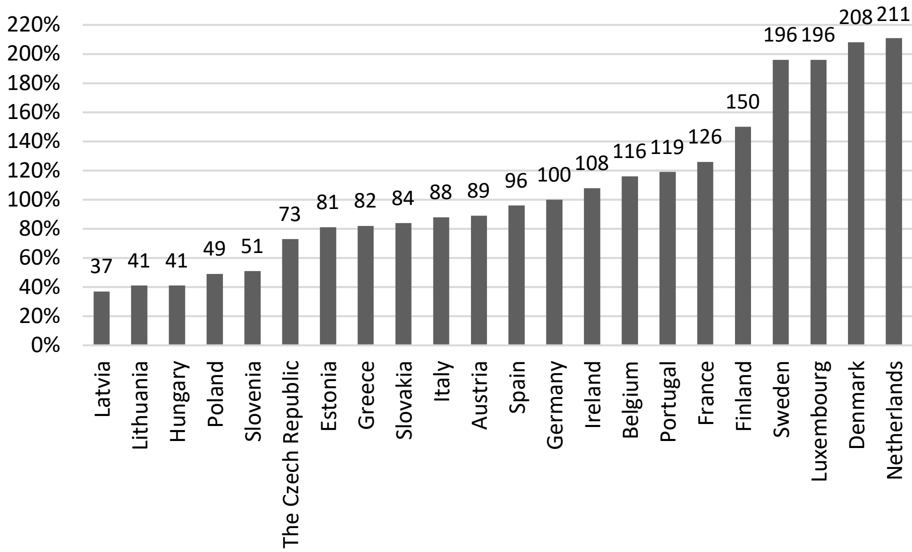

Figure 1. Household debt as a percentage of nominal disposable income in EU countries in 2024 (%)

Source: author's work based on OECD data, https://data.oecd.org/hha/household-debt.htm (accessed March 5, 2026).

The highest levels of household indebtedness are recorded in affluent Western European economies, such as the Netherlands, where the debt-to-income ratio has reached 211%, as well as in Denmark and France. These countries are characterized by a well-established and highly developed credit culture, and their banking sector loan portfolios are distinguished by high stability and robust repayment performance. In contrast, Central and Eastern European economies (including, for example, Poland and Latvia, where the indicator stands at 37%) exhibit a substantially lower overall level of household indebtedness, while at the same time demonstrating a relatively higher proportion of unsecured consumer credit in their banking portfolios.

An analysis of the trajectory of Polish household indebtedness over the past decade indicates that, between 2012 and 2021, the debt-to-income ratio remained relatively stable, fluctuating around 60% (within a range of 57.2% to 61.6%) – Figure 2. A pronounced deviation from this pattern was observed in 2022, when the ratio declined to 49.20%. The post-pandemic environment, the outbreak of the war in Ukraine, and the resulting macroeconomic and geopolitical uncertainty markedly reduced households' willingness to assume new financial obligations, particularly in the form of long-term mortgage loans.

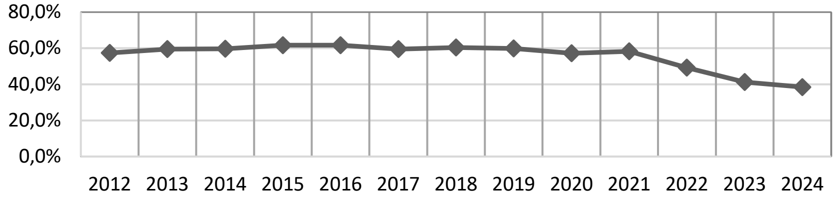

Figure 2. Household debt in Poland as a percentage of nominal disposable income (%) in the years 2012-2024

Source: author's work based on OECD data, https://data.oecd.org/hha/household-debt.htm (accessed March 4, 2026).

The primary transmission channel shaping the deceleration of the Polish credit market has been the level of interest rates set by the Monetary Policy Council (Rada Polityki Pieniężnej, RPP) – figure 3. Decisions of the central bank define the operational framework of the interbank market, which is directly reflected in the behaviour of reference rates. The amplitude of fluctuations in the interest rates on three-month and six-month interbank deposits (WIBOR 3M and WIBOR 6M) exhibits a strong correlation with changes in the key policy rates of the National Bank of Poland (Narodowy Bank Polski, NBP). The most pronounced increases in these indicators in Poland's recent economic history occurred at the end of 2008, in the aftermath of the global financial crisis, and at the beginning of 2022, in response to the inflationary shock associated with the COVID-19 pandemic and the military aggression of the Russian Federation against Ukraine.

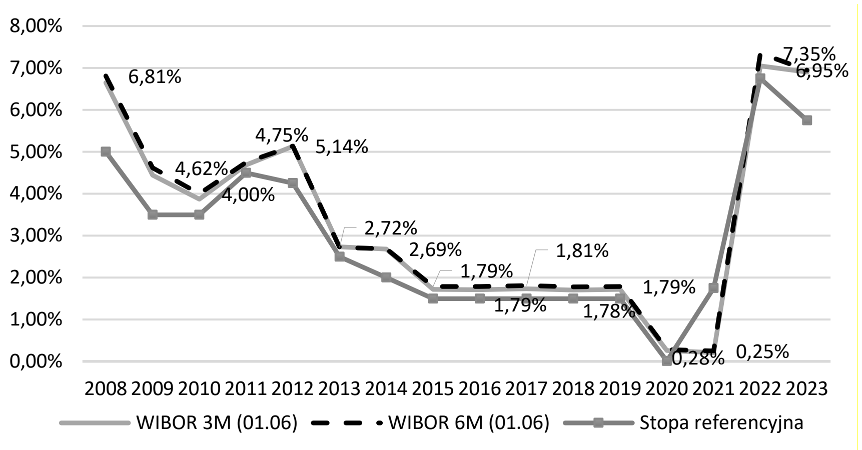

Figure 3. Changes in the NBP reference rate, WIBOR 3M, and WIBOR 6M rates in the years 2008-2023

Source: author's work based on OECD data, https://data.oecd.org/hha/household-debt.htm (accessed March 6, 2026).

To empirically assess the impact of macroeconomic determinants on household credit demand, a statistical analysis was conducted to examine the relationship between the National Bank of Poland's (NBP) monetary policy and consumer borrowing (see Figure 4). The computation of Pearson's correlation coefficient between the NBP reference interest rate and the volume of formal consumer loans granted reveals a strong and statistically significant negative correlation ($r = -0.89$, $p < 0.05$). This inverse association, illustrated in Figure 4, indicates that an increase in the cost of capital is accompanied by a pronounced decline in the demand for formal bank credit among Polish households. Conversely, during the period of relative macroeconomic stability from 2014 to 2019, declining interest rates were associated with a substantial expansion in the volume of loans extended to households. The enhanced availability of relatively low-cost credit appears to have encouraged consumers to increase their use of formal banking products, thereby contributing to higher household expenditures and exerting a stimulative effect on domestic economic activity.

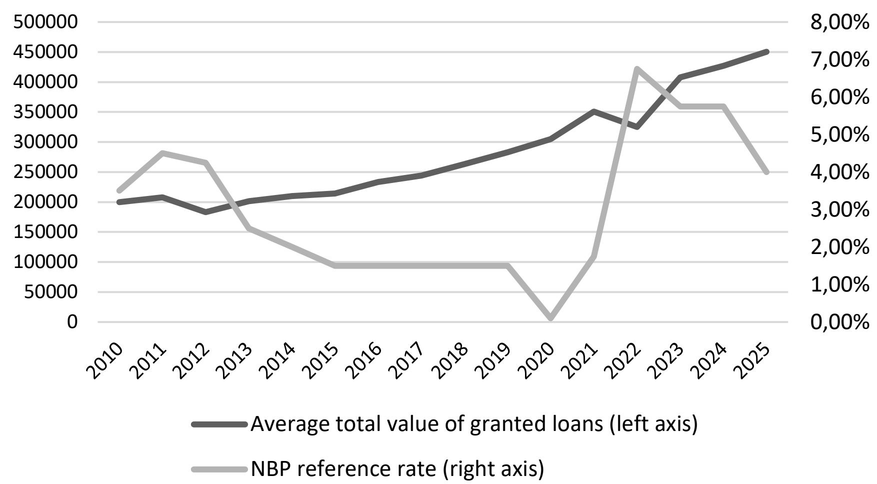

Figure 4. Average total value of granted loans versus the NBP reference rate in Poland (2010–2025)

Source: author's work based on KNF data, "Information on the situation of the banking sector in 2024" (https://www.knf.gov.pl/?articleId=85173&p_id=18, accessed July 20, 2026) and NBP data (https://nbp.pl/podstawowe-stopy-procentowe-archiwum/, accessed July 20, 2026).

Overall, the analysis demonstrates that interest rates and broader macroeconomic conditions constitute primary determinants of household borrowing behaviour. Both the monetary policy stance of the central bank and the credit risk management frameworks of commercial banks exert a decisive influence on the effective demand for consumer credit. Accordingly, continuous risk surveillance and the swift adjustment of financial institutions to evolving market conditions are indispensable for preserving the stability of the formal banking sector and fostering sustainable economic development. Moreover, in a highly volatile, high–interest rate environment, household decision-makers must employ rigorously rational criteria in the use of external debt instruments in order to mitigate the risk of excessive indebtedness.

The pronounced increase in the cost of capital exerted a direct influence on household credit decisions, necessitating a marked reconfiguration of the composition of their financial liabilities – Figure 5. Within the consumer credit portfolio (as defined by the FINREP classification at the end of 2024), instalment loans represented the dominant category, accounting for 59.3% of total indebtedness. Other forms of consumer credit (including current account overdrafts) comprised 30.1% of the market, whereas credit card debt constituted 6.8%, and automobile loans represented only 4.3% of the overall portfolio.

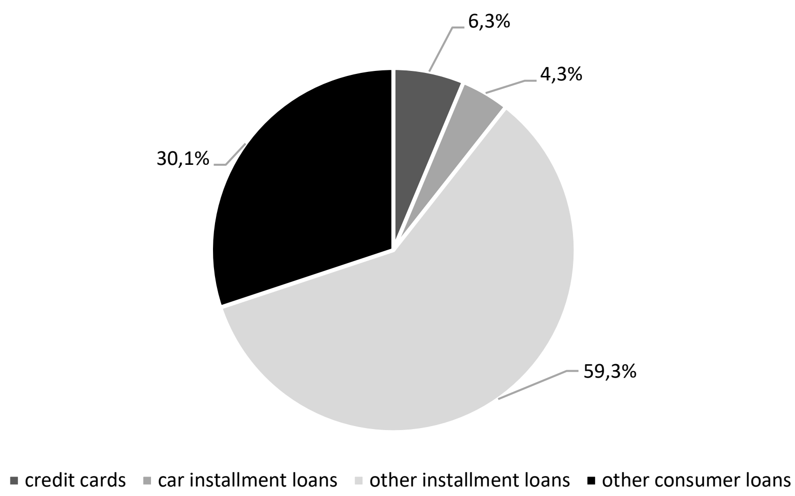

Figure 5. Structure of the consumer credit portfolio at the end of 2024 (according to the FINREP report)

Source: author's work based on KNF, Report on the situation of the banking sector in 2024, https://www.knf.gov.pl/?articleId=85173&p_id=18 (accessed March 4, 2026).

Under conditions of rising interest rates and the tightening of credit risk assessment procedures within the banking sector, a marked deceleration in traditional lending activity was observed, triggering a substantial reconfiguration of financing sources in the economy. The share of non-bank institutions in meeting the demand for debt financing increased, and the functional burden of credit provision was to a large extent transferred from the banking sector to the shadow banking system (Figure 6).

Following a temporary economic downturn in 2020—caused by restrictions associated with the COVID-19 pandemic and the concurrent tightening of anti-usury regulations, which constrained the transaction volume in this market segment to PLN 4.7 billion—the non-bank loan market entered a phase of dynamic growth. By 2024, its value reached PLN 16.3 billion, a level more than twice as high as that recorded in 2021.

This increase was partly attributable to the implementation of novel reporting obligations, which imposed on non-bank institutions the requirement to submit data to the Credit Information Bureau (BIK), thereby enhancing the coverage and accuracy of transactions recorded in official statistics. Nevertheless, household behaviour remained the predominant determinant on both the supply and demand side. Under conditions of elevated inflation and heightened pressure to sustain the liquidity of household budgets, consumers made extensive use of microloans, most commonly in amounts not exceeding PLN 1,000.

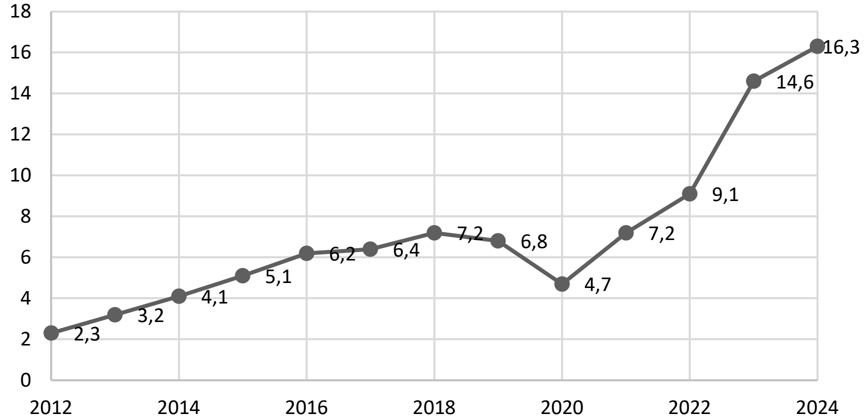

Figure 6. Sales value of non-bank loans in the years 2012-2024 (in billions of PLN)
Source: author's work based on data from BIK, KPF, and PZIP.

The phenomenon of structural migration from the traditional banking sector to non-bank lending institutions observed in Poland does not constitute an isolated case; rather, it represents a local manifestation of a broader global trend defined in the literature as regulatory arbitrage. The rapid expansion of loan companies in Poland, occurring in parallel with a contraction in commercial bank lending driven by elevated WIBOR rates, is strongly consistent with the recent findings of Elliott et al. (2022). In their study of the U.S. market, the authors provide empirical evidence that monetary policy tightening systematically redirects credit demand towards the less regulated non-bank financial sector, explicitly emphasizing the critical role of regulatory constraints in generating this heterogeneous response. More precisely, they document that a 25-basis-point monetary tightening induces a relative increase in non-bank loan size of approximately 4% in the segment of corporate lending and up to 4.5% in the case of consumer auto loans, compared with banks (Elliott et al., 2022).

Furthermore, this dynamic expansion of shadow banking generates new and significant challenges for global macroprudential surveillance, closely reflecting the microeconomic threats currently observed in the Polish market. As documented in the Financial Stability Board's 2024 report on non-bank financial intermediation, the global NBFI sector expanded by 8.5% in 2023—more than twice the growth rate of the banking sector (3.3%) —thereby increasing its share to 49.1% of total global financial assets. Of particular importance, the "narrow measure" of NBFI, which encompasses entities engaged in credit intermediation exhibiting bank-like vulnerabilities, reached a record level of USD 70.2 trillion. Within this segment, finance companies providing loans funded by short-term liabilities (EF2) recorded growth of 7.6% and continued to exhibit elevated levels of financial leverage, thereby reinforcing the very systemic risks identified in the Polish non-bank lending sector (Financial Stability Board, 2024).

This behavioural mechanism constitutes a canonical manifestation of the ratchet effect, whereby consumers' psychological aversion to reductions in their previously attained standard of living temporarily supersedes financial rationality, thereby propelling them towards high-APRC indebtedness, as documented by Białowolski et al. (2021) and Gathergood (2012). Although Poland's aggregate debt-to-income ratio remains, in macroeconomic terms, relatively contained, the qualitative deterioration of indebtedness—specifically, the reallocation from comparatively secure bank credit towards high-cost non-bank loans—generates significant systemic vulnerabilities. As rigorously theorized by Aramonte et al. (2021), non-bank financial intermediaries (NBFIs) exert an increasingly influential role in shaping systemic liquidity through business models that depend on leverage and liquidity transformation, while typically lacking access to formal public backstop mechanisms. Under conditions of restrictive monetary policy, abrupt increases in margin requirements compel these inherently procyclical institutions to undertake rapid, system-wide deleveraging. This process materializes as a "dash for cash," transmitting systemic risk not primarily via chains of insolvency, but through "pecuniary externalities" —that is, severe asset-price spillovers induced by forced liquidations and a concomitant contraction in the system-wide capacity for risk-taking. Consequently, the structural reorientation of Polish households towards the shadow-banking sector heightens the exposure of the domestic credit market to destabilizing deleveraging spirals, underscoring the urgent need for comprehensive macroprudential regulation to address this vulnerability within the European financial architecture (Białowolski et al., 2021).

5. Conclusion

This study examined the macroeconomic and behavioural determinants of household indebtedness in Poland in the context of a restrictive monetary policy regime. The empirical findings fully corroborate both research hypotheses formulated in the introduction. First, in line with Hypothesis 1, the analysis identified a strong and statistically robust negative correlation ($r = -0.89$) between the central bank's reference interest rate and the volume of consumer credit, indicating that higher costs of capital effectively constrained credit extension by commercial banks.

Second, consistent with Hypothesis 2, the results confirm the occurrence of a pronounced structural transformation attributable to a behavioural "ratchet effect." Confronted with quantitative and qualitative credit constraints in the banking sector, households seeking to stabilize or maintain their consumption levels redirected borrowing demand toward the non-bank lending segment. This reallocation is clearly reflected in the marked increase in non-bank loan sales, from PLN 4.7 billion in 2020 to PLN 16.3 billion in 2024.

Although Poland's aggregate debt-to-income ratio remains within a range typically regarded as macroeconomically sustainable (49%), the compositional shift towards high-cost, weakly regulated shadow banking instruments materially elevates systemic risk and exacerbates households' exposure to over-indebtedness and debt spiral dynamics. To safeguard domestic financial stability, there is a pressing need to reinforce macroprudential oversight of non-bank financial intermediaries and to implement broad-based, evidence-based financial education programs targeting households.

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