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## **“Safe 2% Loan” program and residential real estate in Poland in the light of behavioral economics**

### **Abstract**

**Research background and purpose:** This article examines the transformations in the Polish residential real estate market during the COVID-19 pandemic, the ongoing war in Ukraine, and the implementation of the government's “Safe 2% Loan” program. The study sought to elucidate how macroeconomic factors, alongside elements of behavioral economics, have shaped the dynamics of housing prices and influenced borrowers' decision-making processes. The primary objective of this paper was to assess the effectiveness of the program in enhancing mortgage accessibility and stimulating demand in the housing market, with particular attention given to the psychological mechanisms at play, such as the endowment effect, fear of loss or herd mentality.

**Design/methodology/approach:** The methodology of the study was developed through a synthesis of literature analysis and case study research, enabling a comprehensive examination of the phenomena occurring within the residential real estate market. In the theoretical phase, a critical review was conducted of relevant publications and reports addressing both economic factors and behavioral determinants that influence the decisions of investors and buyers. Subsequently, a case study was undertaken, utilizing selected indicators to assess their impact on the Polish real estate market. This research strategy facilitated the testing of the hypothesis that behavioral factors were the primary drivers of housing price growth in Poland between 2019 and 2024.

**Findings:** The results of the study indicated that the implementation of the „Safe 2% Loan” program significantly increased mortgage demand, which, in turn, led to a sharp rise in housing prices, particularly in areas with a high concentration of investors. Furthermore, the analysis revealed that behavioral factors played a crucial role in consumers' financial decision-making processes.

**Value added and limitations:** This study contributes to a deeper understanding of the complex dynamics of the Polish real estate market by integrating traditional macroeconomic analysis with insights from behavioral economics. However, the study is limited by the short duration of the 'Safe 2% Loan' program, which prevents a comprehensive assessment of its long-term effects.

**Keywords:** *real estate, mortgage, behavioral economics*

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## 1. Introduction

The Polish real estate market has been evolving for over 30 years. Following the communist era, during which housing was primarily controlled by the state, a period of capitalism emerged, including in the real estate sector. On the supply side, developers began to assume a dominant role, with the state gradually retreating from its initiative in this area (Szelągowska, 2023). Alongside the dynamic development of the Polish economy, which has been recognized as a global phenomenon (Piątkowski, 2023), the real estate market also experienced significant growth. It is worth noting the unique characteristics of the Polish real estate market, which sets it apart from many Western European countries. One notable feature is the strong preference for homeownership over long-term renting. From an investment perspective, real estate in Poland is seen as a relatively low-risk and attractive way to allocate capital. This perception stems from the fact that the Polish real estate market is relatively young and has not been significantly impacted by major economic crises. A pivotal shift that Polish society faced was the transformation of housing from a mere residential commodity to an investment asset. As economic agents, particularly in the residential sector, increasingly allocated capital to real estate, housing prices escalated rapidly. This price surge, in turn, led to a growing number of households that, due to financial constraints, were unable to acquire residential properties independently. The primary barriers to homeownership were often the inability to meet the required down payment (which, according to the Financial Supervision Authority's Recommendation, must constitute at least 20% of the property's value) or a lack of creditworthiness (FSA, 2019). In response, the Polish government implemented a series of housing programs, primarily designed to provide subsidies to assist households with down payments when purchasing apartments or to support mortgage repayments. The most significant programs in the past two decades in this regard include: Family on Its Own, Apartment for Young People, and Safe 2% Loan.

The analysis of consumer behavior and the situation of the residential real estate market in Poland presented in this article spans the period preceding the implementation of the government's "Safe 2% Loan" program and the duration of the program itself, specifically the third and fourth quarters of 2023. This period followed the occurrence of two so-called "Black Swan" events—unpredictable or difficult-to-predict occurrences that significantly altered the surrounding reality, thereby invalidating many long-term forecasts and strategies, and compelling a shift in social and economic life (Taleb, 2019). These events refer to the outbreak of the COVID-19 pandemic in the spring of 2020 and Russia's invasion of Ukraine in February 2022. These unprecedented occurrences, particularly in this region of Europe, provided a unique context for all other socio-economic factors, including those discussed in this article. They may have acted as catalysts for changes in attitudes and behaviors, as such

events fundamentally shape societal needs and, by extension, the market for goods and services. Consequently, the behavioral dimension of the residential real estate market will also be explored. The final link in the economic process is the consumer—his actions, needs, and behaviors—which are essential to market analysis (Rudnicki, 2016). The application of concepts and theories from the field of behavioral economics has facilitated a deeper understanding of consumer responses to the evolving conditions of the residential real estate market.

The objective of this publication is to provide an analysis of the impact of the “Safe 2% Loan” program on the residential real estate market, with a particular focus on price volatility and the number of mortgages issued. Another goal is to analyze the popularity of the government program through the lens of behavioral economics and explore its influence on potential residential real estate buyers. Based on a comprehensive review of the literature on the subject, a research hypothesis was formulated that behavioral factors were a significant determinant of the increase in housing prices in Poland after the government’s 2% Safe Credit program came into effect. An additional objective of the analysis was to examine the degree of integration of sustainable development principles in the context of housing policy and to assess the reaction of market participants to government programs from the perspective of behavioral economics.

## 2. The Polish Residential Real Estate Market in the Era of “Black Swans”

The period from 2020 to 2023 was marked by significant shocks and turbulence, primarily driven by external factors such as the COVID-19 pandemic and the war in Ukraine. The pandemic’s impact on social and economic life was profound, inducing both supply and demand shocks in the economy, while society faced unprecedented constraints. Despite these challenges, the residential real estate market remained relatively stable, with sales prices exhibiting minimal fluctuations. In contrast, the rental market experienced distinct dynamics, undergoing a supply-side shock during the pandemic, as a substantial number of apartments became vacant within a short period. Additionally, a demand shock occurred following the outbreak of the war, as millions of Ukrainian refugees sought refuge in Poland (Lubasinski & Kukolovich, 2022). According to data from the National Bank of Poland’s quarterly reports (NBP, 2024a), the residential real estate market has exhibited specific trends over recent years (Figure 1). These data illustrate average transaction prices by quarter in the secondary market for the seven largest cities in Poland—Warsaw, Krakow, Lodz, Wroclaw, Gdansk, Poznan, and Gdynia. The subsequent sections of the article focus on the analysis of household behavior through the lens of behavioral economics. The primary emphasis is placed on the secondary market, with limited consideration given to the supply side found in the primary market,

i.e., developers. However, these markets are closely correlated, particularly in terms of price volatility, which also reflects the broader trends observed in the primary market for residential real estate.



Figure 1. Average prices of apartments on the secondary market for 7 largest cities in Poland

Source: own compilation based on NBP data from 2024 (NBP, 2024)

The COVID-19 pandemic temporarily slowed the growth of real estate prices; however, it did not completely halt this trend. In the second, third, and fourth quarters of 2020, modest month-on-month price increases were observed, which accelerated from the first quarter of 2021 onwards. This trend can primarily be attributed to the National Bank of Poland's (NBP) Monetary Policy Council (MPC) implementing unprecedented interest rate cuts, reducing rates to their lowest levels since 1989 (Figure 2). The combination of low mortgage costs and the growing perception of real estate as a secure investment in uncertain times led to increased demand, and consequently, rising prices. The dynamic growth in residential real estate prices continued until the third quarter of 2022, when it was interrupted by a shift in the NBP's monetary policy. The MPC initiated a series of interest rate hikes, raising the reference rate to 6.75% (Figure 2). This policy change resulted in a noticeable decline in the number of mortgages issued and brought an end to the upward trajectory of housing prices (Figure 3). In the fourth quarter of 2022, a slight decrease was observed in the average price per square meter of housing across the seven largest cities in Poland, with a 0.67% drop compared to the previous quarter.

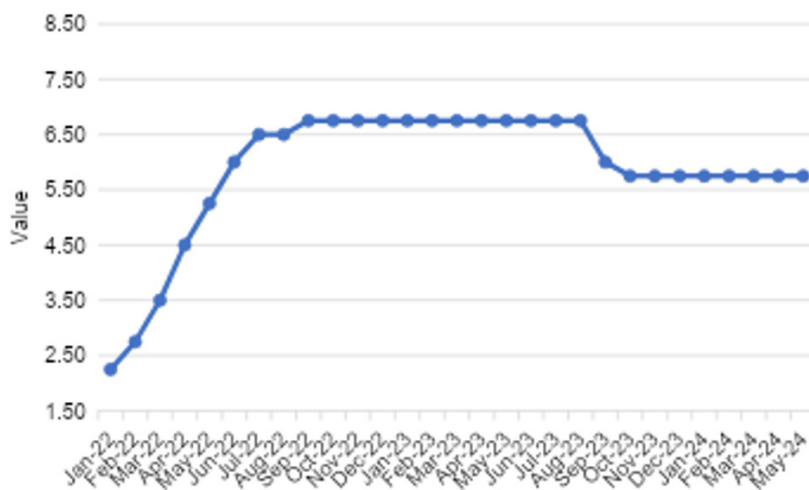


Figure 2. The value of the NBP reference rate in 2022 – 2024

Source: own compilation based on NBP data from 2024 (NBPb, 2024)

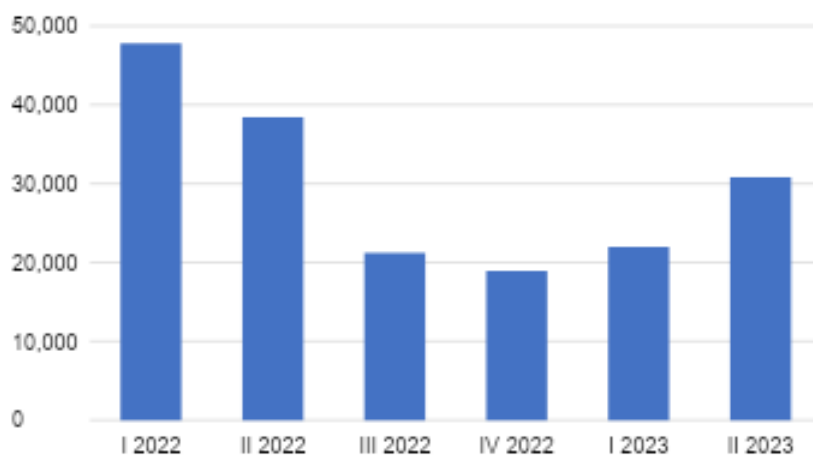


Figure 3. Number of home loans issued prior to the introduction of the “Safe 2% Loan” program

Source: own compilation based on data from AMRON-SARFIN Report (Związek Banków Polskich, Centrum AMRON, 2024)

The residential real estate market, which had experienced a prolonged period of upward growth, ultimately encountered a slowdown, which persisted until the introduction of the “Safe 2% Loan” program. An analysis of recent years in the real estate market clearly demonstrates that history is often shaped by unpredictable, high-impact events. While long-term economic forecasts are valuable as they reflect the prevailing state of knowledge at the time they are made, it is crucial to recognize that so-called “Black Swan” events are those that reshape history and reframe our understanding of it. An example of such an event, during the period analyzed in this article, is the outbreak of the COVID-19 coronavirus pandemic in 2020. It resulted in shocks to the countries’ economies, both on the demand and supply side. Developers saw delays in housing projects, while buyers held off on property purchase decisions due to the uncertain economic and social situation. For many observers, another so-called Black Swan was the outbreak of war in Ukraine. Admittedly, the tense political situation between Russia and Ukraine was well known, however, Russia’s full-scale aggression in Ukraine came as a surprise and led to economic perturbations, particularly rising energy prices and consequently high inflation. The reaction to these events was a change in monetary policy and an increase in interest rates.

### 3. Characteristics of the “Safe 2% Loan” program

The “Safe 2% Loan” program was introduced by the government on July 1, 2023, as a strategic initiative aimed at revitalizing the real estate market, which had been hindered by elevated interest rates. This economic intervention occurred within the context of a broader economic downturn, marked by supply and demand shocks resulting from the COVID-19 pandemic and compounded by the geopolitical ramifications of the war in Ukraine, most notably the surge in energy prices (Niewiadomski et al., 2024). These crises contributed to a pronounced inflationary environment, with the Consumer Price Index (CPI) for February 2023 reflecting a year-over-year inflation rate of 18.4%. Forecasts predicting a prolonged period of elevated interest rates further underscored the need for government action, culminating in the creation of the housing program. Its primary objective was to alleviate the financial burden of mortgage interest, thereby stimulating demand within the housing market, particularly among potential homebuyers.

On January 1, 2024, the Bank of National Economy issued a formal announcement in the Public Information Bulletin regarding the suspension of applications for the Safe 2% Loan, effective immediately. As a result, lending banks ceased accepting such applications the day after the announcement, specifically on January 2, 2024. According to data from the Credit Information Bureau, a total of 62,600 loans were disbursed under the “Safe 2% Loan” program. The program saw widespread participation across both

smaller and larger urban areas, with more than 50% of the loans granted to residents of towns with populations of up to 50,000.

The program, which was originally intended to last until 2027, ended after only six months of operation, further reinforcing the trend of rising prices. The shortened period of the program and the prospect of a quick end to housing support by the government resulted in a significant increase in demand for residential real estate in Poland.

The residential real estate market operates within the framework of free market mechanisms, where prices are primarily determined by the dynamics of supply and demand. The expansion of the supply side of the market is a long-term process, with the construction of a multifamily building typically taking 2-3 years. In contrast, the demand side is more directly influenced by the financial conditions of households and broader macroeconomic factors, most notably the level of interest rates, which significantly affect the cost of mortgages.

The government's "Safe 2% Loan" program significantly boosted the demand side of the residential real estate market by enhancing borrowing capacity through reduced lending costs. This effect is clear in the statistics on the number of housing loans granted. In the third quarter of 2023, the first full quarter in which the new housing program was in effect, the number of housing loans granted rose from 30,798 in Q2 2023 to 40,794. By the fourth quarter of 2023, this figure had surged to 68,860 (Figure 4). Such a dramatic increase in demand likely disrupted market equilibrium, contributing to a sharp rise in real estate prices, particularly in the first quarter of 2024 (Figure 1). Between Q2 2023 and Q1 2024, the average price per square meter of an apartment in the seven largest Polish cities increased by 10%. In the context of the government program, the issue of sustainable development, which is cited in Poland's economic development strategies and European Union goals, should be considered. One of the elements of building sustainable development is increasing the availability of housing and favoring green construction.

The structure of the program, with loan limits of up to PLN 500,000 or PLN 600,000, led to a decrease in the average size of apartments purchased. Specifically, the average area of purchased apartments fell from 58.74 sqm in Q2 2023 to 54.74 sqm in Q4 2023. This shift was a direct result of the program's loan limitations, which, coupled with rising property prices, led to a reversal of the trend and a decline in the square footage of purchased apartments.

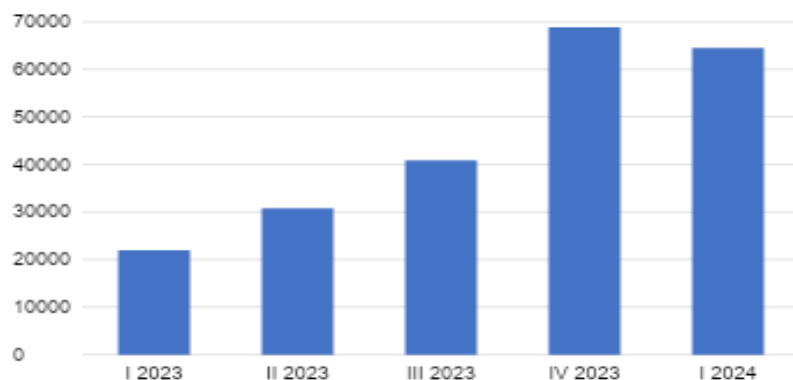


Figure 4. Number of housing loan applications after the introduction of the “Safe 2% Loan” program

Source: own compilation based on data from AMRON-SARFiN Report (Związek Banków Polskich, Centrum AMRON, 2024)

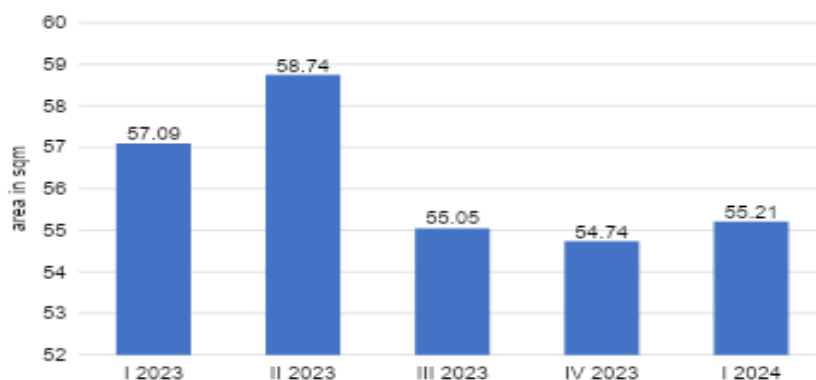


Figure 5. Average square meters of sold apartments in Poland

Source: own compilation based on data from AMRON-SARFiN Report (Związek Banków Polskich, Centrum AMRON, 2024)

Although the “Safe 2% Loan” program was initially intended to run until the end of 2027, on January 1, 2024, the Bank Gospodarstwa Krajowego announced the cessation of loan application acceptance due to the exhaustion of the subsidy pool. Following this, the newly formed Council of Ministers, established on December 13, 2023, decided to terminate the “Safe 2% Loan” program and instead introduce a new housing support



initiative, Flat for a Start. As of now, the program has not yet been processed by Parliament, and the exact structure and details of the state-supported initiative remain undetermined.

#### 4. Sustainability as a trend in the Polish residential real estate market

Sustainability within the context of the residential real estate market in Poland has become an increasingly critical issue, driven by the growing environmental, social, and economic challenges. As such, it is essential to address this concept when analyzing the contemporary real estate market in the country. Sustainability can be defined as a framework that aims to balance three key pillars: ecology, economy, and society (Ćwiek et al., 2024). In the context of the residential real estate market, this means creating spaces that are environmentally friendly, cost-effective and adapted to social needs.

An essential step towards sustainability in the housing sector has been the introduction of mandatory energy performance certificates for buildings and apartments, effective April 1, 2023 (Ministry of Development and Technology, 2023). With each transaction of purchase and sale of real estate, the owner or developer is obliged to submit such a certificate to the buyer. This requirement also extends to the rental market, where landlords must provide tenants with an energy performance certificate at the time of lease signing. This move represents a significant step in fostering environmental awareness among all participants in the real estate market, including both property owners and tenants. The energy performance certificate serves as a document detailing the energy demand necessary to meet the operational needs of a building or part of a building, encompassing energy for heating, ventilation, hot water preparation, cooling, and, in the case of non-residential buildings, lighting. Such regulations have contributed to an increasing awareness of sustainable construction practices among users and potential buyers in the real estate market. The growing popularity of green solutions and the rise of “eco-marketing” have become evident, particularly among real estate developers, as they respond to the demand for more environmentally conscious buildings (Polish Green Building Council, 2024).

According to the “Sustainable Certified Buildings 2024” report by the Polish Green Building Council, the number of green-certified residential buildings in Poland has surged by 60% compared to March 2023 (Polish Green Building Council, 2024). This significant increase is expected to mark the beginning of a new trend, one that will play an increasingly vital role in the residential construction sector in the years ahead.

Sustainability in the Polish residential real estate market is not only a response to global environmental challenges but also an opportunity to foster the development of more sustainable cities and communities. Although numerous challenges remain, an

increasing number of investors, developers, and consumers are acknowledging the long-term benefits of green investments, fostering optimism for the future (Polish Green Building Council, 2024). By adopting the appropriate strategies and policies, it is possible to build a sustainable residential real estate market that will meet the needs of both current and future generations. From a behavioral economics perspective, it can be noted that consumers rarely consider the long-term benefits of energy-efficient solutions, focusing primarily on the short-term availability of financing (Lin & Jia, 2024), especially since the program did not provide incentives for sustainable construction, and the strong price increases it induced reduced the availability of housing, which contradicts the tenets of sustainable development principles.

## 5. Research method

To verify the research hypothesis presented in the introduction, the study employed two primary methods: a literature analysis and a case study based on selected statistical data. This method allows for a detailed study of phenomena in their specific context (Stake, 1994). In this regard, the case study allowed for a thorough assessment of changes in various indicators, including: the number of migration applications (V1), the number of green building certificates issued for residential buildings (V2), the value of the Consumer Price Index (V3), CO<sub>2</sub> emissions from construction (measured in kilograms per capita) (V4), average interest rates (V5), and the level of consumption in categories such as furnishings, household appliances, and household maintenance (adjusted for inflation) (V6). The survey covered the period from 2019 to 2024, and the analysis utilized data from open economic databases, such as Eurostat, the National Bank of Poland (NBP), the Polish Green Building Council (PLGBC), and the Office for Foreigners.

As Fidel (1984) notes, case studies are particularly valuable for examining complex phenomena. In this study, both structural and sectoral factors were considered. This approach allowed for the connection of housing price dynamics to broader environmental policies and the macroeconomic situation in Poland. The choice of variables for the study was justified by their importance in the analysis of rising housing prices.

The dynamics of CO<sub>2</sub> emissions from construction and the number of green building certificates issued were included to assess the influence of green building standards on the housing market, particularly in terms of their potential impact on housing prices (Dalton & Fuerst, 2018; Yu et al., 2021). The Consumer Price Index (CPI) was incorporated to reflect changes in the cost of living, which could influence real estate investment decisions. Additionally, a consumption index in categories such as furnishings, household appliances, and household maintenance was included, as it indicates expenditures related to housing upkeep and improvements. Fluctuations in this index could reflect increased demand for real estate (Anderes, 2023).

## 6. Research findings – case study

To illustrate the relationships between the variables under study, a table is presented that contains key data collected from 2019 to 2024. This table outlines the values of selected indicators, which serve as the foundation for analyzing their impact on the growth of housing prices in the primary market in Poland (Table 1).

Table 1. **Selected variables shaping housing prices on the primary market in Poland**

YEAR	V1	V2	V3	V4	dynamics V4	V5	V6	Average price per sqm of an apartment	Dynamics of average prices per sqm
2019	253,946	8	2.1	20.06	-	1.50%	187.2	8421.05	-
2020	283,424	14	3.7	21.34	6.40%	0.53%	186.57	9295.06	10.38%
2021	405,201	11	5.2	22.31	4.54%	1.17%	189.1	10114.81	8.82%
2022	542,649	10	13.2	21.91	-1.79%	4.69%	200.17	11429.73	13.00%
2023	629,386	11	10.9	21.76	-0.71%	5.88%	189.81	12671.33	10.86%
2024	632,548	19	-	no data	-	5.75%	no data	14531.89	14.68%

Number of migration applications (V1) (Office for Foreigners, 2024); number of green building certificates issued for residential buildings (V2) (PLGBC, 2024), value of the consumer price index (%) (V3) (Eurostat, 2024a), greenhouse gas emissions from construction (kilograms per capita) (V4) (Eurostat, 2024b), average interest rates (%) (V5) (NBP, 2024a), and consumption levels in the category of furnishings, household appliances and household maintenance (chained values adjusted for inflation, base year 2010) (V6) (Eurostat, 2024c); average price per square meter of an apartment in the 7 largest Polish cities on the primary market (NBP, 2024b). The dynamics of the V4 index and the average prices per sqm were calculated based on a variable base increment.

**Source:** own compilation in 2024

One factor that may have influenced the Polish housing market is low-carbon construction (V2). The data presented in Table 1 reveals that the number of buildings with green building certificates remained relatively low, suggesting limited interest in such certifications for residential buildings. Specifically, the number of certified buildings increased from 8 in 2019 to 11 in 2023, with a peak of 19 certificates in 2024. This data indicates that green construction has had a relatively modest impact on the Polish real

estate market. Furthermore, CO<sub>2</sub> emissions associated with construction (V4) were recorded at approximately 20.06 kg per capita in 2019. By 2023, this figure had increased to 21.76 kg per capita. The highest level of emissions was achieved in 2021 and was about 22.31 kg per capita. In 2019-2020, emissions increased by about 6.4%, which may have been the result of increased construction activity in Poland. The following year (2020-2021) saw a further increase in emissions of around 4.54%, which may have been due to continued investment despite the difficult pandemic conditions. However, since 2021, there has been a noticeable downward trend. In 2021-2022, CO<sub>2</sub> emissions decreased by about 1.79%, and in 2022-2023 they decreased by about 0.71%. Despite the slight variability of CO<sub>2</sub> emissions from construction, housing prices on the primary market in Poland have steadily increased – from PLN 8,421 per sqm in 2019 to PLN 12,671 per sqm in 2023, which means an increase of 50.47%. This increase was not due to efforts to reduce CO<sub>2</sub> emissions or a greater interest in sustainable construction. The number of certified green buildings remained low, indicating that low-carbon technologies and sustainable solutions were not yet widely used.

Another key factor influencing the real estate market in Poland was the level of inflation (V3). Between 2019 and 2023, the Consumer Price Index (CPI) increased significantly, rising from 2.1% in 2019 to 13.2% in 2022, before slightly moderating to 10.9% in 2023. This inflationary trend had a direct impact on the cost of construction and finishing materials, contributing to higher housing prices. The period of the fastest CPI growth occurred between 2021 and 2022, which coincided with a notable increase in housing prices. Additionally, the high inflation rate likely influenced investor behavior, as many sought safer forms of capital investment amid the decreasing value of money. These considerations are justified in the context of the analysis of the literature of the subject in the field of behavioral economics carried out in this article.

Changes in interest rates played a crucial role in shaping housing prices in the Polish primary real estate market. Between 2019 and 2020, interest rates (V5) averaged around 1.5% in 2019 and 0.53% in 2020. This provided easy access to cheap mortgages. However, starting in 2021, interest rates began to rise significantly, reaching an annual average of approximately 5.88% in 2023. The natural consequence of these higher interest rates was a reduction in household creditworthiness, leading to a decline in the number of home loans issued (Związek Banków Polskich, Centrum AMRON, 2024). In response to these shifts, the government introduced the “Safe 2% Loan” program in 2023, aimed at supporting young home buyers, which supported the growing demand for apartments and was reflected in their prices.

Changes in the Polish real estate market could be observed through variable V6, which tracks consumption related to furnishings, household appliances, and routine household maintenance. In 2019, the value of this variable was approximately 187.20, but it decreased slightly to around 186.57 in 2020. However, from 2021 onward, this value began to rise, reaching a peak of 200.17 in 2022, marking the largest one-year increase

during the analyzed period. These changes suggest a period of intense consumer activity in the finishing and upgrading of properties. Nevertheless, it is important to note that the value of the V6 variable dropped to approximately 189.81 in 2023, which may have been due to household budget constraints, which resulted from rising borrowing costs and inflation.

It should be noted that immigration was also a significant factor influencing the Polish housing market. The number of migration applications increased substantially, from 253,946 in 2019 to 629,386 in 2023, representing a 148% increase. This phenomenon may have contributed to an increase in demand for apartments for sale and for rent.

## 7. Discussion

Behavioral economics examines how psychological, social, and emotional factors influence individuals' economic decisions, including their behavior as consumers in the real estate market. While traditional economics assumes that people act rationally and make decisions aimed at maximizing their utility, behavioral economics highlights that individuals often act irrationally due to various stimuli and heuristics (Mruk, 2018). Unlike in many Western countries, there is a widespread belief in Poland that one should own a home. Property ownership is often perceived not only as a form of future security but also as a symbol of personal success, which strongly influences housing decisions among Poles. It is worth comparing the Polish 'Safe 2% Loan' program with similar initiatives in other EU countries, such as France's Prêt à Taux Zéro (PTZ) (Service-Public.fr, 2023) or Germany's Baukindergeld (KfW Bankengruppe, 2018), where government support for young buyers is often linked to objectives such as energy efficiency or adaptable housing solutions.

Participation in the "Safe 2% Loan" program significantly exceeded the Ministry of Development and Technology's predictions. One explanation for this discrepancy could be found in the principles of behavioral economics. The behavior of real estate market participants under the 'Safe 2% Credit' program can be most accurately explained by the concept of hyperbolic discounting. According to this framework, consumers tend to place disproportionate value on immediate benefits—such as access to preferential interest rates—while discounting potential long-term consequences, including the risk of overpaying for a property or future declines in its value. From a behavioral economics perspective, these decisions were driven by a shortened temporal horizon and a present-oriented mindset, rather than by a rational assessment of the total transaction cost." (Zaleskiewicz, 2011). Another important concept from behavioral economics, i.e. fear of loss that affects financial decision-making, including mortgage decisions. This phenomenon suggests that losses are psychologically more impactful than equivalent gains are pleasurable. People tend to avoid losses more than they pursue gains, a phenomenon that can significantly influence their financial and investment

decisions (Kahneman, 2013). In the case of the “Safe 2% Loan” program, this tendency likely played a key role in driving the program’s popularity and encouraging a greater willingness among borrowers to participate, as it minimized the financial risks associated with the interest rate fluctuations. This elimination of uncertainty would have been particularly appealing to individuals with a strong fear of loss. For those planning to purchase real estate, the program may have been seen as a way to avoid potential financial losses due to rising borrowing costs. The program offered certainty about future payments, reducing the fear of potential losses. Fear of loss can also lead borrowers to forgo seeking other, potentially more profitable financing options to avoid the risk of unknown market conditions. They prefer the safer, stable option offered by the program, even if there are other, potentially more profitable alternatives. This behavioral bias can also be extended to the decision-making process regarding the profitability of purchasing real estate. As the analysis in this article shows, while the government program contributed to an increase in property prices, consumer willingness to purchase real estate was notably higher during the first and second quarters of the “Safe 2% Loan” program compared to the quarters that preceded it. Despite the rising costs, buyers were more inclined to accept higher transaction prices to seize the opportunity to participate in the program.

Another important phenomenon in behavioral economics is the so-called “herd mentality” also known as the hitching principle (Banerjee, 1992). This refers to the tendency of individuals to make decisions based on the actions and choices of others, often without thoroughly analyzing the situation themselves. In the context of financial and real estate markets, this principle can lead to irrational behavior. The “Safe 2% Loan” program in Poland provides an example where the hitching principle may have significantly influenced consumer behavior. Potential borrowers, observing that many people were taking advantage of the program, might have perceived it as a safe and advantageous option, assuming that the decisions of the majority could not be wrong. The increased popularity of the program may have led to the imitation of the majority decision. In the context of the “Safe 2% Loan” program, people, seeing that others got favorable loan terms, can give up looking for other options. This “herd mentality” effect likely contributed to a rise in property prices when many borrowers made decisions to purchase real estate for fear of losing the opportunity. This phenomenon can cause pressure to act quickly to “not be left behind.” It seems that we faced such a phenomenon in the III and IV quarters of 2023 on the residential real estate market in Poland.

The hitching principle, the endowment effect, and fear of loss all play significant roles in financial decision-making, particularly in relation to mortgages and the real estate market. Understanding these mechanisms, grounded in behavioral economic theory, not only helps consumers make more informed and deliberate choices but also provides valuable insights for policymakers.

## 8. Conclusions

Summarizing the above considerations, it can be concluded that the impact of the government's "Safe 2% Loan" program on the residential real estate market in Poland was significant, with its effects lasting until the end of 2024, the program running for only the final two quarters of 2023. The program led to a 20% increase in transaction prices for certain types of real estate, an anomaly in a traditionally stable market where prices are typically shaped by free market dynamics. Remarkably, prior to this price surge, the Polish residential real estate market was stagnant, but government intervention helped catalyze a phase of dynamic recovery. The influence of behavioral economics on the success of the program's turnout was evident, as discussed in this article. Given this, detailed research is essential among program participants to understand the underlying motivations and rationality behind their decisions, providing deeper insights into the true dynamics of the market.

The "Safe 2% Loan" program did not address the growing emphasis on sustainable construction, which remains a limitation in today's era of sustainable development. As environmental awareness continues to rise, future housing programs should consider integrating sustainable construction practices. Such state housing policy programs have the potential to support sustainable development by increasing the availability of housing and promoting low-impact construction. Incorporating sustainable building principles into the program could contribute to more sustainable urban development and improve the quality of life for residents. However, it is crucial that the program offer appropriate incentives and support for green investments, which would allow for harmonious economic and environmental development. The lack of a sustainable component in the program, as well as its abrupt termination, suggest the need for better long-term housing policy planning. The short-term demand effect did not translate into a systemic change in housing availability or promotion of low-carbon housing.

## Authors' contribution

**Ł.K.:** article conception, theoretical content of the article, analysis and interpretation of results. **M.N.:** research methods applied, conducting the research, data collection. **B.P.:** article conception, theoretical content of the article, conducting the research, analysis and interpretation of results. **M.S.:** article conception, theoretical content of the article, research methods applied. **S.H.:** data collection, draft manuscript preparation. **B.G-D.:** article conception, theoretical content of the article, analysis and interpretation of results.



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