



THE IMPACT OF DIGITAL NARRATIVES ON THE RESIDENTIAL MORTGAGE MARKET IN ROMANIA

Valentin-Ionuț-Cosmin DUMITRESCU 

National University of Science and Technology POLITHNICA Bucharest, Romania

vdumitrescu@stud.acs.upb.ro

Elena-Camelia MORARU

National University of Science and Technology POLITHNICA Bucharest, Romania

elena.moraru@stud.etti.upb.ro

Alina-Ștefania MORARU

National University of Science and Technology POLITEHNICA Bucharest, Romania

stefania.moraru@stud.acs.upb.ro

Adrian-Ștefan TOADER

National University of Science and Technology POLITHNICA Bucharest, Romania

adrian.toader0201@stud.faima.upb.ro

Gheorghe MILITARU

National University of Science and Technology POLITEHNICA Bucharest, Romania

gheorghe.militaru@upb.ro

Abstract

The current paper analyzes the practicality of narrative economics theory advanced by Robert Shiller in relation to the residential real estate sector in particular. Specifically, the effect of the collective public psyche expressed via digital narrative of fear and hope on the mortgage lending decisions of households is explored independently of the traditional macroeconomic fundamentals. Based on an elaborate monthly data sample ranging from January 2018 to April

2026, a behavioral proxy index based on the search metadata from Google Trends is constructed to represent changes in mass psychology. Having verified the existence of cointegration through Johansen test, the Vector Error Correction Model (VECM) is applied to measure both the long-run equilibrium relationship between narratives and aggregate physical credit measures, as well as short-run dynamic adjustment, independent of traditional variables like interest rates or inflation. The analysis shows that spikes in digital optimism (FOMO) create an immediate and non-contractionary effect on the volume of issued mortgages in the first month after the shock, whereas narrative of fear (FEAR) creates a noticeable non-linear effect featuring pre-contract rush and subsequent credit contraction starting with the third month. Also, the short-run neutrality of interest rate movements implies that a powerful digital narrative could shield credit demand from such shocks. This research employs behavioral finance theories on a relatively new Central and Eastern European market characterized by very high ownership levels. This way, the study fills in an important academic vacuum in the literature. Through a unique combination of non-conventional data on Internet searches together with central bank statistics, the study contributes to developing a unique credit nowcast method.

Keywords: mortgage lending, narrative economics, online sentiment, Google Trends, VECM modeling

INTRODUCTION

The structural balance of the national economy's financial system and its respective economic development process in the regional context maintain a profound interconnection with the dynamics of the domestic housing market sector. For decades, conventional macroeconomic analysis models viewed the developments within housing markets from an exclusively deterministic and mathematical point of view, considering all changes in asset values, transaction volumes, and overall mortgage growth as functions of the classic fundamental factors. Traditional approaches emphasize empirical variables such as the evolving cost of capital (indicated by reference interest rate cycles), the distribution of households' disposable incomes, the institutional fiscal setting, and the structural inelasticity of domestic construction pipelines. Still, the repeated interruptions in the normal flow of market activities, cyclical shocks, and times of severe price volatility forced contemporary researchers to question the sufficiency of these purely neoclassicist and rational agent assumptions. Disregarding the psychological drivers and behavioral aspects that shape sudden market booms and busts represents a crucial flaw when analyzing aggregate housing market conditions.

The main shift in the approach to investigating those anomalies was introduced by Shiller (2017, 2019) with his theory of Narrative Economics, according to which long-term investment decisions are not only made on the basis of calculations but are greatly affected by "economics' narratives" – those stories about the economy that have spread throughout society. In contemporary economy, digitalization has resulted in speeding up the process of story spreading in such a way that Internet search engines and digital newspapers serve as a kind of real-time mirror of mass psychology. Thanks to digitalization, the fast access to information affects people's view on risks, creates an emotional echo in consumers and changes the balance between supply and demand. Starting from the panic caused by the feeling of an impending catastrophe and ending at irrational excitement driven by the fear of missing something, emotions start working as factors that could be more important than basic macroeconomic indicators and act as self-fulfilling prophecies for the economy.

The main purpose of this study is the examination, through a behavioral approach, of the forces that affect the dynamics of the residential real estate market in Romania, taking into account the aspects of digitalization and spreading of online public narratives. To achieve this, an eight-year period (January 2018 – April 2026) was covered through the creation of a database, which encompasses three distinctive periods of economic volatility: the expansion period before the COVID-19 pandemic, characterized by cheap credit; the strong exogenous shock caused by the pandemic; and the recovery period characterized by strong inflationary pressures and a difficult transition to high interest rates. Through the use of non-traditional indicators of online activity, collected through Google Trends, alongside official statistics provided by the National Bank of Romania (NBR) and the National Institute of Statistics (INS), advanced time-series econometric methods are used in order to model behavioral links not captured by general equilibrium models.

In the current research, the direct causal impact of specific varieties of online public discourses, formulated in opposition to each other, including the fear narrative (FEAR) and opportunity narrative (FOMO) on the actual amount of newly issued housing loans to private households is examined. As the empirical test of cointegration was performed, the use of the Vector Error Correction Model (VECM) enables to consider all variables as endogenous without any a priori restrictions. Notably, the above-mentioned model considers both the equilibria within the long-run structure and error-correction mechanism of the short-run structure of interaction between the two sides. The results obtained using this empirical approach have substantial implications for macroprudential regulators and commercial banks. It is vital to understand and apply the spatial-behavioral dimension of such interaction, namely the long-run structural

equilibrium between online narratives and credit expansion, in order to develop the adequate regional strategies to mitigate potential systemic risks and create resilient financial frameworks.

LITERATURE REVIEW

To lay a solid theoretical basis for the paper, the study is built at the junction of three main research areas, namely, the theory of narrative economics, the measurement of public sentiment in media texts, and web traffic data used as a sophisticated predictive tool. Contradicting neoclassical theory, which fails to account for the viral spread of economic "stories," the current paper identifies two possible examples of such stories, namely, the fear of a crisis or irrational optimism associated with the phenomenon of FOMO (Fear Of Missing Out). Using the example of moving from behavioral psychology to econometrics, the paper illustrates how public emotion can become a catalyst actively influencing the market despite the macroeconomic fundamentals. Finally, the current paper exploits digital traces left online as an early predictor of the market's future movement.

In previous approaches to modeling the real estate market, the process involved only a quantitative approach to economic dynamics, using such variables as cost of borrowing, income dynamics, and housing rigidity. In contrast to this, recent literature questions whether strictly rational models are enough due to market discrepancies. The first major shift of paradigms was introduced by Shiller (2017, 2019), who established the theory of Narrative Economics and stated that long-term investments are greatly affected by viral economic narratives in society. They become self-fulfilling prophecies, which change the path of real economy. This is proved by Gao et al. (2020), who measured Keynesian "animal spirits" and showed that media sentiment may artificially extend residential boom periods or speed up recession without any help from baseline factors. Moreover, Gabauer and Gupta (2020) provided an explanation of how the market is vulnerable to fear narratives and uncertainty may stop buyers even in the presence of perfect monetary conditions.

Going from theory to empirical confirmation entailed solving the issue of measuring qualitative and ephemeral emotions. Soo (2018) set the standards for the benchmark framework by implementing text-mining analysis on US local press archives. In doing so, Soo confirmed that media sentiment is an excellent predictor with at least a two-year lead time when forecasting the residential prices changes. This validity was further substantiated by Biktimirov et al. (2022) by showing that media sentiment is a great predictor especially in the case of less transparent real estate markets where transaction data are delayed. On the methodology side, Hausler et al. (2018) improved upon that approach by utilizing machine learning to process the unstructured newspaper data. This methodology has been recently advanced by Kim and Lee

(2026) by proving that through deep learning approaches one can successfully quantize the economic value of public opinion and transform the traditional real estate pricing model. Finally, Marcato and Nanda (2018) showed that the public emotion is an exogenous factor that distorts the equilibrium between supply and demand. The macroeconomic effects of such behavioral distortions, including their powerful braking effects on investments and on residential inflation, have been thoroughly analyzed by Ngene et al. (2017) and Christidou & Fountas (2018).

One of the most significant shortcomings of traditional real estate analysis stems from the time gap in the reporting nature of official institutional statistics. In order to overcome this challenge, the newly emerging branch of literature employs online searches to gauge current organic intention and anxiety among consumers. Dietzel (2016), and Dietzel et al. (2021) found out that the metadata obtained through Google Trends can predict important turning points in the market much sooner than national statistics reveal them. Apart from merely establishing a correlation between the two, Oust and Eidjord (2020) established a causal relationship and proved that high transactional intention searches ("mortgages" and similar) serve as a good predictor for the number of notarized transactions in the next month. The validity of Google Trends as a predictor of real estate decisions has been recently confirmed, including in times of maximum informational uncertainty and external shocks. In one study, Onrubia et al. (2026) used Google search metadata to successfully predict foreign housing purchases amid Brexit disruptions.

However, even with the universal agreement regarding the significance of economic stories and digital web traffic techniques developed by Jun et al. (2018), an essential geographic and structural disparity still exists. Specifically, there is an ongoing lack of empirical studies on the subject of the rising economies in Central and Eastern Europe. In Romania, a highly unique institutional environment and a strong cultural belief in the necessity of high levels of homeownership create a market environment which is highly sensitive to public opinion and media coverage. The goal of the current study is to fill this gap in the existing academic body of work by applying the theoretical concept of Robert Shiller to the Romanian market.

METHODOLOGY AND DATA

The primary objective of this research is to investigate the influence of narrative economics on the housing residential market in Romania using a practical empirical approach. It should be noted that the methodology adopted in this research is specifically developed for investigating the non-linear relationship between the mass psychology of people and the actual mortgage lending through online public sentiment which is seen as a new indicator of Keynesian

animal spirits. In order to make the empirical investigation reliable, the methodology combines web traffic data and macroeconomic data.

The basis of the empirical study presented here is built upon a very detailed, monthly frequency data set spanning the extensive period of January 2018 through April 2026. This particular period has been chosen intentionally since it encompasses several different, extreme and highly volatile economic cycles that form the perfect natural experiment for behavioral theories. Among these overlapping cycles there is the cycle prior to the pandemic with the economy expanding due to easy money policy, the shock caused by the pandemic itself with its associated lockdowns and the subsequent recovery, which was characterized by extremely high levels of inflation and transition to a completely new interest rate regime. The resulting final sample consists of precisely 100 monthly observations of each variable being analyzed and is deemed adequate in terms of time-series econometrics to perform autoregressive analysis and preserve degrees of freedom.

The structure of the analytical model combines the influence of both endogenous and exogenous factors to ensure the most complete representation of all market dynamics without confusing psychological and fundamental changes in the economy. Mortgage credit volume (CRED) is the main dependent variable, which reflects financing velocity. Raw monthly observations of this variable were obtained from the interactive database of the National Bank of Romania (NBR) via the statistical route: from the section Monetary and Financial Statistics to Volumes of New Credits and Deposits to New Credits and Deposits Denominated in RON. In this system, the selected criterion is the amount of new credits issued for purchasing houses by households, namely tracking indicator VICRL_ING in gross RON. As part of the procedure of stabilizing the variance of this variable before conducting econometric analysis, it is required to apply the logarithmic transformation of raw data, forming the variable L_CRED.

The design of the analytical model takes into account the impact of both endogenous and exogenous factors to achieve the maximum completeness of representation of all the market processes without mixing psychological and economic changes. Mortgage credit volume (CRED) is the dependent variable that measures the financing velocity. The initial values of this variable were received from the interactive database of the National Bank of Romania (NBR) through the statistical way from the section Monetary and Financial Statistics to Volumes of New Credits and Deposits to New Credits and Deposits Denominated in RON. In the above mentioned system, the chosen criterion is the volume of new credits issued for purchasing housing by households, namely the indicator VICRL_ING in gross RON. In the process of stabilization of variance of the variable, it is necessary to use the logarithm of raw data to form the variable L_CRED.

The primary independent variables that represent public mood as well as behavioral proxies of this research were designed based on metadata obtained via the Google Trends online platform. This online platform allows measuring Search Volume Index (SVI) which is an index of normalized scale ranging from 0 to 100 based on absolute search activity data for a particular month. The method incorporates two behavioral narratives which are opposite in nature. The first one is called Crisis & Panic Narrative (FEAR). It reflects collective market anxiety and anticipation of market downturn via semantic search of the expression "criza imobiliara" (eng. real estate crisis). The second behavioral narrative is Opportunity & Optimism Narrative (FOMO) that serves as a proxy for buyer urgency and irrational exuberance through the normalized monthly index of semantic search of "credit ipotecar" (eng. mortgage loan). In order to maintain the accuracy of Google Trends' metadata and eliminate any irrelevant or distorted digital noise from polysemy, the geo filter was locked down to the region of Romania, and the strict category filters limited the search queries to just the Real Estate category.

Finally, the model integrates the annual inflation rate (INF) as an extra macroeconomic control variable. In order to provide an uninterrupted mathematical high-fidelity tracing mechanism for the whole time horizon of 100 months starting from April 2026, an innovative combined official extraction mechanism was developed. The dataset for the first period from January 2018 to December 2025 was taken from the Eurostat database based on the annualized Harmonised Index of Consumer Prices (HICP) of Romania. Then, in order to extend this series for the second period from January 2026 to April 2026, the data was extracted from the statistical tables and consumer price indices indicators attached to the monthly press releases of the National Institute of Statistics (INS). After the initial stage of data extraction, all the datasets were thoroughly pre-processed in order to strip out technical codes, headers and missing values. Finally, the individual series were combined into one single-time stamped sequence creating the matrix free from any missing values necessary for the estimation of vector autoregression.

Taking into consideration the nature of the macroeconomic time series data and the behavioral hypothesis under investigation, OLS regression analysis becomes inappropriate, thus the study chooses to use Vector Error Correction Model (VECM) after having confirmed the presence of cointegrating vectors empirically. One of the basic underlying premises of this study is that there are complex and multifaceted feedback relations among the variables. For instance, an increased amount of mortgage loaning will result in increased attention from the press, which in its turn will cause additional online searching activity and thus form a cycle of mutually reinforcing feedback between the real economic situation and digital narrative. The main benefit of such an approach lies in the possibility to treat all principal variables as endogenous without any need to set any restrictions a priori concerning the direction of

causality between market sentiment and credit volume. The structure of the applied VECM model makes it possible to separate the long-run cointegrating components through the application of an Error Correction Term, which is represented in the following matrix form:

$$\Delta Y_t = C + \Pi Y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta Y_{t-i} + \gamma X_t + \varepsilon_t \quad (1)$$

Where; ΔY_t represents the vector of first-differenced endogenous variables at time t , explicitly defined for this ecosystem as $\Delta Y_t = [\Delta L_CRED_t, \Delta FEAR_t, \Delta FOMO_t]^T$. Y_{t-1} represents the levels of the variables lagged by one period. The matrix Π is the long-run impact matrix, which contains the speed of adjustment coefficients α and the cointegrating vectors β , such that $\Pi = \alpha\beta^T$. Γ_i represents the short-run autoregressive coefficient matrices for the lagged differences. X_t is the vector of exogenous control variables, defined as $X_t = [RATE_t, INF_t]^T$, which are critical for isolating the strict macroeconomic effect and ensuring that the impact of the digital narratives is measured beyond the standard influence of monetary policy and inflation. Finally, ε_t is the vector of white noise error terms.

In order to achieve the highest degree of validity of the estimates obtained through statistical analysis and to ensure that no spurious coincidence is found among relationships, the process of implementing the model goes through a highly stringent, multi-step econometric process. First of all, all time series are subjected to testing for the presence of unit roots as a test for stationarity since macroeconomic time series tend to have stochastic trends that render standard probability distributions meaningless. This is carefully done by means of the Augmented Dickey-Fuller (ADF) Test. In case the series turn out to be non-stationary in level, they are then transformed mathematically using first-order differencing and thus turn out to be stationary variables integrated of order one, $I(1)$. Since the primary variables turned out to be integrated of the same order, a Johansen Cointegration test was then performed on the levels data without any differencing.

Afterwards, the selection of the best lag order becomes another important procedure carried out using common statistical methods such as Akaike Information Criterion (AIC). Lag 3 is chosen since it corresponds with reality and it covers the period from the beginning of the process of creation of intentions to purchase online until the payment of the mortgage loan physically. In order to investigate whether there is Granger causality or not, we use the results of the test for cointegration and concentrate on estimating the parameters of the Vector Error Correction Model (VECM). In particular, we analyze the cointegrating equations β and the error correction loading coefficients α . Cointegrating vectors describe the structural relationship between digital sentiment and credit, while the coefficients describe the rate of adjustment towards the long-run equilibrium in response to deviations from it.

Lastly, for the analysis to extend beyond causality to practical market forecasting, Orthogonalized Impulse Response Functions (IRF) based on VECM are constructed. Mathematical functions are employed to depict in dynamic fashion the exact way through which the impact is felt by the market in terms of direction, magnitude, and persistence for the given shock over a 12-month period, thereby depicting graphically just how long the effect of a sudden outbreak of digital optimism or digital fear persists in influencing the allocation of real estate credit before being corrected back to equilibrium.

RESULTS AND COMMENTS

Before estimating the vector autoregressive model, one had to perform an important and initial step of uncovering the existing dependencies and studying the stochastic properties of the time series under consideration (CRED, RATE, FEAR, FOMO, INF). The underlying dataset consists of a comprehensive period covering the interval from January 2018 to April 2026, collecting a total of 100 monthly observations intended to cover various volatile macroeconomic periods such as the pre-COVID expansion, COVID shocks, and post-high inflation monetary cycles. To obtain a clean dataset, each series was carefully scrubbed from any technical source codes, blanks and redundant metadata before harmonizing the chronological order. In order to equalize the variance within the 100-month period, the dependent variable capturing the amount of residential mortgage loans was logged as L_CRED . To avoid conducting spurious regressions, the stationarity of all series was checked by the traditional Augmented Dickey-Fuller (ADF) test.

The results confirmed that although the variables have stochastic trends in their levels, the first differences manage to reject the null hypothesis of a unit root, thus proving that all the series used are integrated of order one, $I(1)$. In the next stage, lag length criterion was selected up to a maximum threshold of six lags. The Akaike Information Criterion (AIC) had its lowest value when $p = 3$ months, which equals 1.780. Thus, a lag of three months is the optimal level of lag length which provides us with both completeness and simplicity of the model. A lag of three months corresponds to the institutional process of Romanian real estate market where the lag is formed by the delay from the moment a person starts searching online until the funds are administratively disbursed by the banks.

Table 1. Johansen cointegration test results

Null Hypothesis (H0)	Trace statistic	5% Critical value	Statistical decision
$r = 0$ (No vectors)	54.49	29.8	Reject H0 (Cointegration confirmed)
$r \leq 1$ (At most 1)	23.89	15.49	Reject H0 (Two vectors confirmed)
$r \leq 2$ (At most 2)	0.18	3.84	Do not reject H0

As detailed in Table 1, the empirical Trace statistics clearly reject the null hypotheses of $r = 0$ and $r \leq 1$ at the 5% significance level. This confirms the presence of exactly two independent cointegrating equations binding log credit volume, online fear, and online optimism together over the 2018–2026 horizon. Therefore, a Vector Error Correction Model (VECM) was fitted to capture both the long-run structural equilibriums and the short-run dynamic innovations.

An examination of the raw time series paths in Figure 1 highlights substantial structural co-movements and leading properties between aggregate public psychology and physical banking output. In the initial portion of the period from 2018 to 2019, there were low volumes of new mortgages (CRED) being issued, whereas the digital domain was characterized by a strong presence of fear narrative (FEAR) which often spiked up to the upper benchmark index value of 100. This inverse relation is reversed after the changes to the macro-environment in 2020 and 2021, where there is an obvious co-movement between sharp declines in fear narrative and rapid increases in optimism narrative (Optimism) as a signal for subsequent growth of credit volumes exponentially. Despite high interest rates in the post-2024 period, where, according to classical financial theories, credit aggregates should decline immediately, the raw data showed that mortgage volumes reached their all-time historical highs. This detachment implies that waves of optimism on the internet and the constant psychological pressure to buy real estate had succeeded in overcoming the macroeconomic tensions, thereby constituting sufficient primary rationale for implementing the following joint causality model.

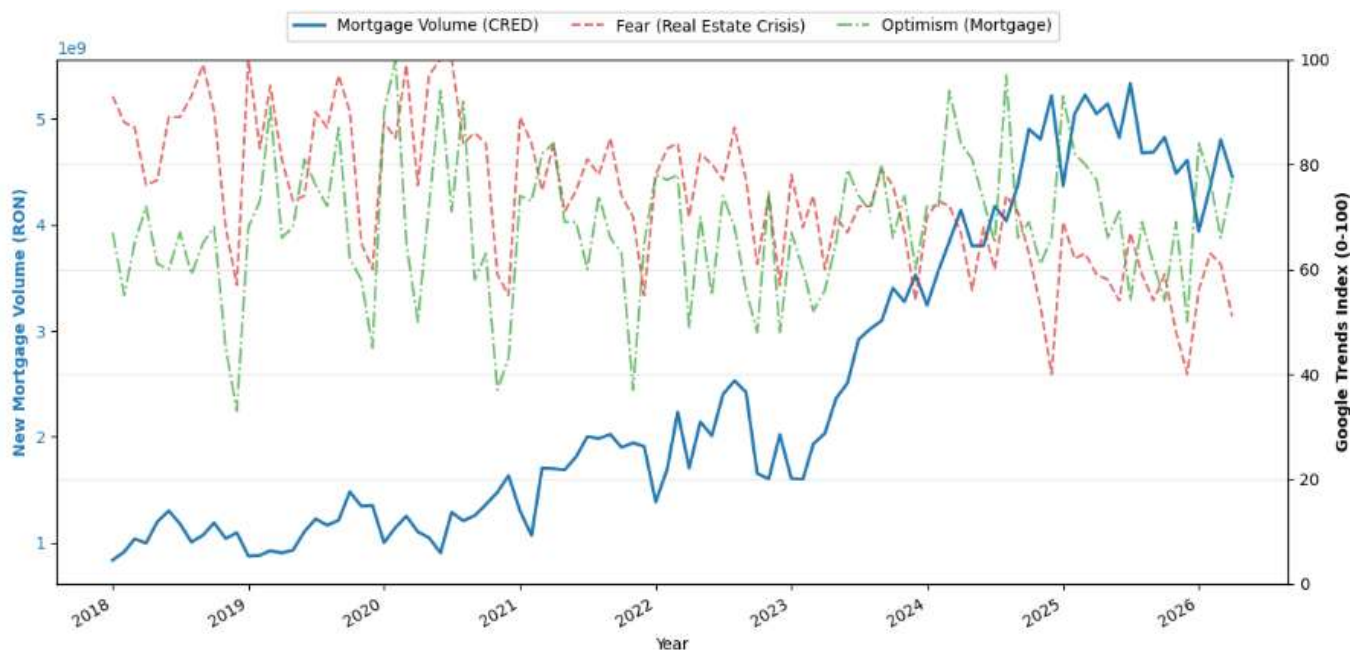


Figure 1. Evolution of mortgage volume vs. online sentiment (2018 - 2026)

The estimation of the VECM framework reveals a profound long-run equilibrium binding public sentiment and mortgage volumes. Extracting the first cointegrating vector β_1 , normalized on the log of credit volume L_CRED , yields the following long-run relationship:

$$L_CRED_t = 0.2525 \times FOMO_t$$

This highly significant coefficient ($z = -7.026$, $p < 0.01$) mathematically validates Shiller's narrative paradigm on a macro scale: in the long term, there exists a positive structure alignment between FOMO and credit expansion. With an increase in the predisposition to perform real estate search online, the mortgage lending structurally increases. In addition, the second cointegration vector confirms the existence of an inverse structure relationship between the fear narrative and the optimism narrative ($FEAR_t = -3.8682 \times FOMO_t$), demonstrating that these two digital sentiments operate as opposing behavioral forces that cannot sustainably coexist at high levels.

A critical insight provided by the VECM is the direction of the adjustment mechanisms following a market shock. The loading coefficients α , which measure the speed at which variables correct back to the long-run equilibrium, reveal a stark asymmetry. For the mortgage volume equation L_CRED , the error correction terms are statistically insignificant ($ec1 = -0.0410$, $p = 0.289$). This implies that the actual volume of disbursed credit is weakly exogenous to the system's cointegrating vectors. The credit market is structurally "sticky", it does not rapidly self-correct in response to sudden sentiment misalignments, but rather relies on its own historical momentum.

Conversely, the fear narrative $FEAR$ exhibits highly significant and aggressive adjustment coefficients ($ec1 = -16.978$, $p < 0.01$). When a disequilibrium occurs between actual lending and online narratives, it is the digital fear that rapidly adjusts and absorbs the friction to restore the balance, not the institutional credit volume.

Despite the transition to an error-correction framework, the short-term statistical neutrality of traditional macroeconomic fundamentals remains fully intact. Within the L_CRED equation, the exogenous control variables representing the cost of financing ($RATE$, $p = 0.823$) and inflation (INF , $p = 0.519$) lack any statistically significant short-run impact. This strongly corroborates the conjecture that strong behavioral momentum has a capacity to shield aggregate credit demand over the short run from monetary policy tightening. Consumers keep financing themselves according to their behavioral tendencies, thereby circumventing the costs associated with the changes in the interest rates of the central bank.

In order to study the evolution of the behavioral shocks along with their time path and structure, Orthogonalized IRF was run for 12 months. The structural response of log credit volume to a one-standard deviation shock in the FOMO index is illustrated in Figure 2.

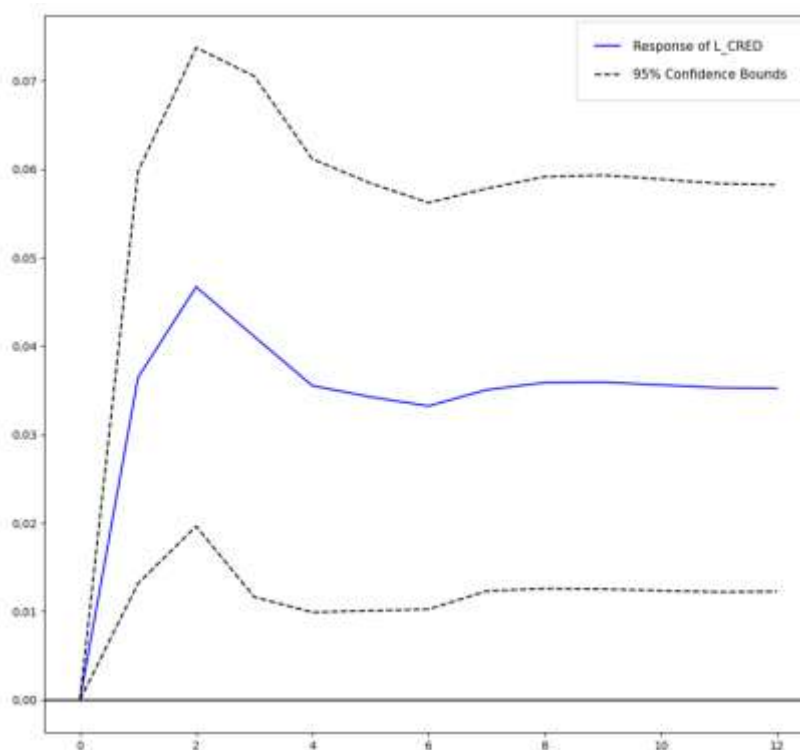


Figure 2. Mortgage volume response to an Optimism (FOMO) shock

The VECM-based orthogonalized IRFs show a market characterized by structural realignment over the long run rather than panic over the short term. The shock to digital optimism, measured by FOMO, results in a continuous expansionary effect on lending behavior. Contrary to normal autoregressive models that are prone to exhaustion in a very short time period, VECM depicts a very persistent psychological effect, showing that once buying panic is triggered in the online world, it leads to a sustained inflow of bank applications and thus lifts aggregate credit levels permanently.

On the other hand, the market reaction to the unexpected increase in the fear narrative (FEAR) creates a more complicated structural scar, which occurs with a delayed effect. In case of a shock in the narrative of fear, the volume of credit increases initially for two months and then is followed by a correction period with a sharp drop of volume. This structural delay very precisely reflects the institutionality of the process of lending in the Romanian banking system, in which the rigid operational calendar for the processing of the mortgage loan application – including property assessment, legal research, and notarization procedures – takes 30 to 60 days. Consequently, the behavioral shock does not stop the disbursement process of physical loans; instead, people with already approved mortgages try to complete the contracts as soon as possible, while any new bank application stops right away. This is demonstrated by the

delayed but persistent contraction in the official data starting from month three. The described structural process proves that while optimism positively shifts the level of long-term lending, fear shifts it down.

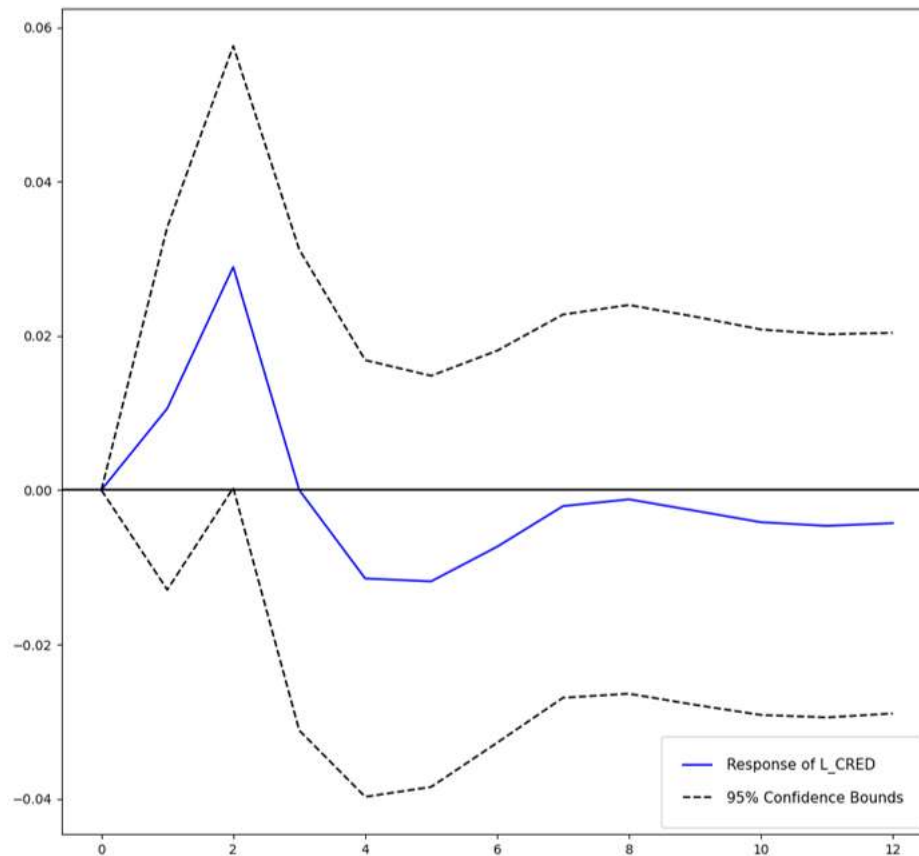


Figure 3. Mortgage volume response to a Fear (FEAR) shock

In summary, these empirical results provide a very strong localized validation of the narrative economics approach advocated by Robert Shiller in an emerging European economy with high levels of homeownership. Under neoclassical economic assumptions, the macroeconomic environment defined by inflation and high nominal interest rates in 2022–2026 should naturally have inhibited mortgage growth. However, the presence of the confirmed cointegrating vectors and error correction processes implies that the digital narratives on the importance of real estate as an inflationary hedge successfully circumvented interest rate friction. The hungry consumers kept borrowing and disregarded conventional cost-of-credit measures. Thus, general equilibrium modeling techniques widely used in forecasting by central and commercial banking systems become very vulnerable to errors in the framework of their

structure without using internet search metrics. The inclusion of a systematic Search Volume Index (SVI) will drastically decrease forecasting errors for aggregate credit.

CONCLUSION

In this study, we examine the nexus between digital stories and mortgage lending behavior in Romania within the framework of behavioral finance, using Vector Error Correction Models (VECM) to highlight structural linkages which classical general equilibrium approaches fail to establish. The analysis used relevant time series econometrics to identify the behavioral interdependencies between the public sentiment on the Internet as the proxy for mass psychology and Keynesian "animal spirits" and credit volumes in reality. The identified models include the log-transformed volume of the mortgage credit L_CRED as the dependent variable and behavioral proxies for the opportunity story, FOMO, and fear story, FEAR, in addition to fundamental determinants such as interest rate rates $RATE$ and inflation INF . The characteristics of our 100-month data sample for the 2018-2026 timeframe reflect the volatile economic environment that includes the pre-pandemic growth period, the COVID-19 shock, and the high-inflation monetary tightening phase after that.

The statistical results showed evidence of significant structural relationships in the sense that the online sentiment of the public is not a mere by-product of the macroeconomic facts but rather a different independent driver which influences the long-term carrying capacity of the real credit market. From the Johansen Cointegration tests and the VECM model estimations, it was clear that there were strong equilibriums that existed in the housing financial environment. Particularly, digital FOMO and physical credit expansion have a positive long-term structural relationship such that any base increase in the organic buying urgency causes a permanent increase in aggregate lending. Also, from the error correction loading parameters α , there is evidence of an interesting asymmetric systemic relationship. That is, the volume of physical disbursed credit is structurally sticky and very dependent on the momentum, while the digital FEAR is a reactive part that quickly responds to bring the market back into equilibrium. More importantly, the interest rate neutrality in the short term shows that digital momentum can protect the aggregate demand for credit against monetary policy tightening.

The results yielded by the present study have very substantial importance to a variety of people who are interested in conducting macroeconomic planning and bank operations. Those who develop macroprudential policies at the National Bank of Romania (NBR) can be helped out by the above findings. A possible approach is through broadening the scope of conventional forecasting models with systematic inclusion of SVIs within nowcasting frameworks. The use of the above measure would give the central planners a very sensitive measure about whether

there is a real estate overheating or any kind of behavioral contraction so that the policymakers can make necessary changes to their macroprudential policy. In case of banking associations, the velocity of such digital stories would act as a very advanced tool to improve the management of liquidity risk, portfolio stress tests, and dynamic marketing channels.

As this study provides strong empirical proof to support the narrative economics theory by Robert Shiller, it still is only a basic approach that recognizes certain structural limits. The present analysis is conducted through simplified keyword aggregates ("criza imobiliara" and "credit ipotecar") that reduce the complex online discourse community, and the limitations of the Google Trends database do not allow granulating the search purpose between the institutional and individual agents. Such structural boundaries create a number of important directions that future research may pursue to enhance our understanding of the behavioral factors at play. First of all, future studies may implement NLP techniques to obtain sentiment flows from the web-based financial press and real estate discussion groups. Most importantly, expanding the empirical basis of this analysis into the Panel-VECM framework for a group of matching CEE transitional countries will help reveal if this strong susceptibility to the digital narrative transmission is a regional feature caused by high homeownership ratios or a local one, unique to Romania.

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