

Final Scientific Report

Project title: The nexus between investor sentiment and equity market dynamics. A new sentiment indicator approach.

Project code: PN-III-P1-1.1-TE-2019-1702.

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Project leader: Associate Professor Maria Miruna POCHEA.

Team (alphabetical order): Daniela CHILARI (CATAN), Angela Maria FILIP, Cristina NEGRU (HARIN), Cristian Marius LITAN, Mihai NIȚOI.

The main goal of this project is to investigate the impact of investor sentiment indicators on equity markets and financial stability in Europe.

In **the first stage of the project**, carried out between September 15th to December 31st, 2020, we engaged in the following activities (A):

A1.1 Relevant literature review, analysis of sentiment indicators previously proposed in the literature in order to explain stock returns behavior and to detect drawbacks in the existing methodologies.

A1.2 Identifying new dimensions of investor sentiment such as behavioral factors (psychological, social, cognitive, and emotional) national culture, political climate, and reaction to news.

A1.3 Construction of a media sentiment component by using dictionary-based approaches and machine learning techniques.

The second stage of the project, carried out between January 1 to December 31, 2021, was focused on designing an aggregated sentiment indicator at country level and on exploring the relationship between investor sentiment and equity market dynamics in Europe. The following main activities have been developed throughout this stage:

A2.1 Identifying new dimensions of investor sentiment such as behavioral factors (psychological, social, cognitive, and emotional) national culture, political climate, and reaction to news.

A2.2 Construction of a media sentiment component by using the dictionary-based approach and the machine learning techniques.

A2.3 Combining all the investigated factors and defining the aggregated sentiment indicator at country level.

A2.4 Analyzing the effects of investor sentiment on risk aversion and time-varying idiosyncratic volatility.

A2.5 Investigating the role of investor sentiment in forecasting equity risk-premium.

A2.6 Studying the relationship between investor sentiment and herding behavior in European equity markets.

A2.7 Evaluating the implications of investor sentiment on the stability and integration of European equity markets.

Throughout **the third stage of the project**, between January 1st to September 14th 2022, our objective was to study the relationship between investors sentiment and equity market dynamics in Europe. The following activities have been carried out:

A3.1 Analyzing the effects of investor sentiment on risk aversion and time-varying idiosyncratic volatility.

A3.2 Investigating the role of investor sentiment in forecasting equity risk-premium.

A3.3 Studying the relationship between investor sentiment and herding behavior.

A3.4 Evaluating the implications of investor sentiment on the stability and integration of European equity markets.

The **objectives and activities** associated to each stage have been **entirely accomplished** according to the work plan, and the scientific results available on demand, are the following: **2 papers** have been published in **Web of Science indexed journals** and other **2 papers** have been published in **international databases indexed journals**; one paper is **accepted for publication** in an **Web of Science indexed journal**; **4 papers are submitted** for evaluation at **Web of Science indexed journals**, and **one paper** is submitted at an international databases indexed journal; **4 working papers** are going to be submitted for review and publication to **Web of Science indexed journals**.

Table 1 presents the evolution of our research papers throughout the entire period of the project, from working papers to publication.

Table 1. Research papers

I. The nexus between bank connectedness and investors' sentiment				
Authors	Mihai NIȚOI, Maria Miruna POCHEA			
Year	Status	Review	Indexation	Activities
2022	Published	<i>Finance Research Letters</i>	WOS ¹	Analyzing the effects of investor sentiment on risk aversion and time-varying idiosyncratic volatility (A2.4, A3.1). Evaluating the implications of investor sentiment on the stability and integration of European equity markets (A2.7, A3.4).
2021	Accepted	<i>Finance Research Letters</i>	WOS	
II. Measuring the myopic loss aversion premium: an experimental approach				
Authors	Angela Maria FILIP, Balint Zsolt NAGY			
Year	Status	Review	Indexation	Activities
2022	Published	<i>Applied Economic Letters</i>	WOS	Identifying new dimensions of investor sentiment such as behavioral factors (psychological, social, cognitive, and emotional) national culture, political climate, and reaction to news (A1.2; A2.1).
2021	Towards the direct measurement of risk premium implied by myopic loss aversion		WOS	
	Under review	<i>Applied Economics Letters</i>	WOS	
III. What drives trend-following profits in stocks? The role of the trading signals' volatility				
Authors	Adrian ZOICAȘ-IENCIU, Maria Miruna POCHEA			
Year	Status	Review	Indexation	Activities
2022	Angela Maria FILIP, Maria Miruna POCHEA, Andreea Maria PECE	<i>Applied Economics</i>	WOS	Analyzing the effects of investor sentiment on risk aversion and time-varying idiosyncratic volatility (A2.4, A3.1).
2021	Under review	<i>Applied Economics</i>	WOS	
IV. International portfolio diversification and genetic relatedness				
Author	Cristina HARIN			
Year	Status	Review	Indexation	Activities
2021	Published	<i>Review of Economic Studies and Research Virgil Madgearu</i>	IDB ²	Investigating the role of investor sentiment in forecasting equity risk-premium (A2.5, A3.2).
V. The nexus between hedge fund size and risk-adjusted performance				
Author	Daniela CATAN			
Year	Status	Review	Indexation	Activities
2021	Published	<i>Studia Universitatis Babeș-Bolyai Oeconomica</i>	IDB	Analyzing the effects of investor sentiment on risk aversion and time-varying idiosyncratic volatility (A2.4, A3.1).
VI. Intentional and spurious herding behavior: a sentiment driven analysis				
Author	Maria Miruna POCHEA			

¹ Web of Science Indexed Journal² International Database Indexed Journal

Year	Status	Review	Indexation	Activities
2022	Under review	<i>Journal of Behavioral and Experimental Finance</i>	WOS	Studying the relationship between investor sentiment and herding behavior in European equity markets (A2.6, A3.3).
VII. Unveiling the sentiment behind central bank narratives: A novel deep learning index				
Authors	Mihai NIȚOI, Maria Miruna POCHEA, Stefan-Constantin RADU			
Year	Status	Review	Indexation	Activities
2022	Under review	<i>Journal of Behavioral and Experimental Finance</i>	WOS	Relevant literature review, analysis of sentiment indicators previously proposed in the literature in order to explain stock returns behavior and to detect drawbacks in the existing methodologies (A1.1). Construction of a media sentiment component by using dictionary-based approaches and machine learning techniques (A1.3, A2.2). Combining all the investigated factors and defining the aggregated sentiment indicator at country level (A2.3). Investigating the role of investor sentiment in forecasting equity risk-premium (A2.5, A3.2).
2021	Working paper What the central banks are saying: A sentiment-index database			
2020	Working paper What the central banks are saying: A sentiment-index database			
VIII. The influence of cultural norms on international equity allocation				
Authors	Alexandru TODEA, Cristina HARIN			
Year	Status	Review	Indexation	Activities
2022	Under review	<i>The European Journal of Finance</i>	WOS	Identifying new dimensions of investor sentiment such as behavioral factors (psychological, social, cognitive, and emotional) national culture, political climate, and reaction to news (A1.2, A2.1).
2021	Under review	<i>Journal of Banking and Finance</i>	WOS	
2020	Working paper International portfolio allocation in a cultural perspective			
IX. Extreme market sentiments and herding behavior /Herding behavior under extreme market sentiments: industry-level evidence in European Emerging Markets				
Authors	Angela Maria FILIP, Maria Miruna POCHEA, Andreea Maria PECE			
Year	Status	Review	Indexation	Activities
2022	Submitted	<i>Journal of Economics and Finance</i>	IDB	Relevant literature review, analysis of sentiment indicators previously proposed in the literature in order to explain stock returns behavior and to detect drawbacks in the existing methodologies (A1.1). Identifying new dimensions of investor sentiment such as behavioral factors (psychological, social, cognitive, and emotional)
2021	Under review	<i>Journal of Emerging Market Finance</i>	WOS	
2020	Under review	<i>Journal of Behavioral and Experimental Economics</i>	WOS	

				national culture, political climate, and reaction to news (A1.2, A2.1). Combining all the investigated factors and defining the aggregated sentiment indicator at country level (A2.3). Studying the relationship between investor sentiment and herding behavior in European equity markets (A2.6, A3.3).
X. Investors' sentiment, weather conditions and stock returns				
Authors	Angela Maria FILIP, Andreea Maria PECE			
Year	Status	Review	Indexation	Activities
2022	Submitted	<i>Journal of Behavioral Finance</i>	WOS	Combining all the investigated factors and defining the aggregated sentiment indicator at country level (A2.3). Investigating the role of investor sentiment in forecasting equity risk-premium (A2.5, A3.2).
2021	Working paper			
XI. Investors' sentiment and the risk-adjusted performance of US hedge funds				
Authors	Daniela CATAN, Angela Maria FILIP, Bogdan NEGREA			
Year	Status	Review	Indexation	Activities
2022	Working paper			Analyzing the effects of investor sentiment on risk aversion and time-varying idiosyncratic volatility (A2.4, A3.1).
2021	Working paper			
XII. Analysis of a conjecture concerning the equality of the AHP priority vector and the geometric row mean, when the former minimizes its inconsistency measure				
Authors	Theo K. DIJKSTRA, Cristian Marius LITAN, Francisco MARHUENDA, Mircea RUS			
Year	Status	Review	Indexation	Activities
2022	Working paper			Construction of a media sentiment component by using dictionary-based approaches and machine learning techniques (A1.3, A2.2).
2021	Under review	<i>Nonlinear Analysis: Real World Applications</i>	WOS	
XIII. The impact of investors' sentiment on stock returns				
Authors	Maria Miruna POCHEA, Diana Alexandra LUCA			
Year	Status	Review	Indexation	Activities
2022	Working paper			Analyzing the effects of investor sentiment on risk aversion and time-varying idiosyncratic volatility (A2.4, A3.1).
XIV. Herding behavior, unconventional events, and non-standard monetary policy decisions				
Author	Maria Miruna POCHEA			
Year	Status	Review	Indexation	Activities
2022	Working paper			Studying the relationship between investor sentiment and herding behavior in European equity markets (A2.6, A3.3).
2022	Under review	<i>Economics Letters</i>	WOS	

In the following, we will present our scientific results in relation to the above-mentioned objectives and activities associated to each research paper reported in the previous table.

I. The nexus between bank connectedness and investors sentiment

Authors: Mihai NIȚOI, Maria Miruna POCHEA

This paper explores European bank connectedness built on the idiosyncratic returns and proposes an alternative systemic risk measure based on sentiments. The results show that banks in developed European countries form a large network, alongside the U.S. banks, while banks in European catch-up countries are gathered in their own clusters. The spillovers received by the European banks from the U.S. are higher compared to those received by the U.S. banks from the European banks. The network connectedness is sensitive to the nature of each crisis. The Thomson Reuters MarketPsych financial sentiment index proves to be a suitable proxy for the systemic risk. **(A2.4, A2.7, A3.1, A3.4)**

II. Measuring the myopic loss aversion premium: an experimental approach

Authors: Angela Maria FILIP, Balint Zsolt NAGY

This paper proposes new methods to assess the myopic loss aversion premium (the expected return-differential) based on an experimental design by eliciting both willingness-to-pay and allocation percentage figures and also by inferring and comparing absolute risk aversion coefficients. Our results indicate a high level of loss-aversion and support the existence of the myopic loss aversion bias. **(A1.2, A2.1)**

III. What drives trend-following profits in stocks? The role of the trading signals' volatility

Authors: Adrian ZOICAȘ-İENCIU, Maria Miruna POCHEA

We document the influence of stock volatility on trend-following profits for a global sample of 1618 blue-chip stocks, across 43911 evaluation subperiods (2004-2018). We use the price sensitivity of trend signals (i.e., signal volatility) to isolate the detrimental impact of high stock volatility manifested through excessive/inefficient trading. The signal volatility greatly complements the stocks' mean-variance characteristics in explaining the time series variation in trend-following excess returns. The results hold for both the buy and sell excess returns, are robust across stock markets, and conserve after considering explicit and implicit trading costs. Investors can use ex post signal volatility estimates as a valid criterion to choose across potential trading rules, according to their specific levels of risk aversion and transaction costs. **(A2.4, A3.1)**

IV. International portfolio diversification and genetic relatedness

Author: Cristina HARIN

The purpose of this paper is to shed some light on how relatedness between counterparties can explain investment behavior, specifically how much can investor's inherited traits influence the exchange of capital. We use the genetic distance index and regress it against the foreign bias measure on pairs from 40 countries on a time period from 2001-2016. We identify that the prior exerts a significant impact on foreign investment decision, even when controlling for previous documented determinants of foreign bias. These findings reflect that international portfolio allocation is obstructed by the cultural wedge created between source and destination country, since relative difference in these characteristics disturb the flow of equity investments across markets, which ultimately hinder diversification. **(A2.5, A3.2)**

V. The nexus between hedge fund size and risk-adjusted performance

Author: Daniela CATAN

This paper explores the relationship between hedge fund size and risk-adjusted performance employing a data sample of 245 U.S. hedge funds classified into eight different investment strategies. The studied period spans from January 2005 to February 2021, with calculations performed both on the whole coverage period as well as three sub-periods, to isolate the pre-crisis, crisis, and post-crisis funds' behavior. Similar to previous evidence found in the literature, the results reveal an inverse relationship between hedge fund size and risk-adjusted performance (as measured by the Sharpe, Treynor and Black-Treynor ratios) in most of the cases. **(A2.4, A3.1)**

VI. Intentional and spurious herding behavior: a sentiment driven analysis

Author: Maria Miruna POCHEA

This study explores the nexus between investors' sentiments and herding behavior toward the market consensus in the U.S. and Europe stock markets from January, 2005 to April, 2021. We document strong evidence of herding during periods characterized by high level of sentiments. Our results reveal that Thomson Reuters MarketPsych Indices positively impact herding and confirm the assumption that sentiments might drive investors' decisions. Moreover, these sentiments trigger an intentional herding, rather than a spurious one, suggesting the presence of noise investors in the market. We find also evidence of cross-country herding spillover effects that diminish the benefits of international diversification. **(A2.6, A3.3)**

VII. Unveiling the sentiment behind central bank narratives: A novel deep learning index

Authors: Mihai NIȚOI, Maria Miruna POCHEA, Stefan-Constantin RADU

This paper proposes a new framework for analyzing the sentiments of central bank narratives. Specifically, we fine-tune the FinBERT model, which relies on Google's Bidirectional Encoder Representations from Transformers architecture, on a dataset of manually annotated sentences on

monetary policy stance. We derive a deep learning domain-specific model – FinBERT central bank sentiment index – ready for sentiment predictions. The proposed index performs similarly to other measures in capturing financial uncertainty. Also, our sentiment index is less noisy and has the ability to forecast the future path of policy stance, augmenting the standard Taylor rule. Finally, compared to other lexicon-based sentiment indicators, our deep learning index has a higher predictive power in anticipating policy rates changes. Our framework enables future possible research in developing more accurate sentiment indicators for central banks in both advanced and emerging countries. **(A1.1, A1.3, A2.2, A2.3, A2.5, A3.2)**

VIII. The influence of cultural norms on international equity allocation

Authors: Alexandru TODEA, Cristina HARIN

We investigate the effect of cultural tightness-looseness on foreign bias in international equity allocation using data for 29 home investor countries and 37 destination countries for the period 2001–2018. We find that investors from a tight (loose) culture will exhibit less (more) portfolio diversification among foreign markets. Further, cultural tightness-looseness moderates the effect of individual cultural values on foreign portfolio allocation decisions differently. The effect of individualism, masculinity, and power distance is diminished in a loose national culture with high heterogeneity of investor behaviour. However, low adherence to social norms amplifies investors' uncertainty avoiding behaviour. These results hold for various robustness checks. **(A1.2, A2.1)**

IX. Extreme market sentiments and herding behavior

Authors: Angela Maria FILIP, Maria Miruna POCHEA, Andreea Maria PECE

This paper examines the effects of extreme investors' sentiments on herding behavior in five Central and Eastern European (CEE) stock markets. Our empirical research is designed to assess the asymmetric effects of two sentiment indicators, the ARMS Index and the RSI Index on herding behavior in specific industrial sectors from Poland, Hungary, Croatia, Romania, and Bulgaria. As extreme sentiments are more likely to induce herding behavior in overheated markets, we also test the impact of high optimism/pessimism on herding under excessive volatility. We report strong evidence in favor of extreme sentiment-enhanced herding. Our results are relevant both for investors, as herding behavior is likely to affect the portfolio optimization process, and for the CEE markets regulators as herd behavior is likely to prevent capital markets from achieving financial stability. **(A1.1, A1.2, A2.1, A2.3, A2.6, A3.3)**

X. Investors' sentiment, weather conditions and stock returns

Authors: Angela Maria FILIP, Andreea Maria PECE

The objective of this study is to explore the impact of extreme weather conditions on stocks abnormal returns by the instrumentality of investors' sentiment. We applied the principal component analysis to construct sentiment indices specific to each of the 39 stock markets by using five variables *MK* (increase in market capitalization), *PSY* (psychology index), *RSI* (relative strength indicator), *VI* (volatility close to close index) and *DY* (dividend yield). To assess the impact of climatological conditions on investors' sentiment, we aggregated three meteorologic variables (temperature, atmospheric pressure and wind speed) to compose extreme weather conditions indices for each country and used these indices in asset pricing modelling. **(A2.3, A2.5. A3.2)**

XI. Investors' sentiment and the risk-adjusted performance of US hedge funds

Authors: Daniela CATAN, Angela Maria FILIP, Bogdan NEGREA

The aim of this paper is to investigate the influence of investors' sentiment on the market timing ability of hedge funds managers. The database includes US hedge funds with a financial history of at least five years, which report incentive fees and management fees. Funds are classified in eight categories depending on the investment strategies: *Relative Value*, *Fundamental Long/Short Equity*, *Fundamental Long Only Equity*, *Macro Quantitative*, *Managed Futures Quantitative*, *Fund of Funds*, *Event Driven* and *Multi Strategy*. As explanatory variables we use Fama-French factors ($R_m - R_f$, SMB - Small Minus Big, HML - High Minus Low, RMW - Robust Minus Weak, CMA - Conservative Minus Aggressive) and Fung-Hsieh factors. The final objective is to submit the paper for publication in a Web of Science indexed journal. **(A2.4, A3.1)**

XII. Analysis of a conjecture concerning the equality of the AHP priority vector and the geometric row mean, when the former minimizes its inconsistency measure

Authors: Theo K. DIJKSTRA, Cristian Marius LITAN, Francisco MARHUENDA, Mircea RUS

Positive reciprocal matrix arises in the Analytic Hierarchy Process. For this type of matrices, we characterize for which dimensions the following conjecture is true: if the principal right eigenvector minimizes the AHP error gravity function, then it equals the geometric row mean. **(A1.3, A2.2)**

XIII. The impact of investors' sentiment on stock returns

Authors: Maria Miruna POCHEA, Diana Alexandra LUCA

The paper's aim is to find if investors' sentiments contribute to stock returns, taking an in-depth approach on how investors sentiments change depending on market conditions, different industries, and different markets. By using the Thomson Reuters MarketPsych (TRMI) sentiment index, we identified the companies with the most positive and negative sentiments to construct the final sentiment factor. Based on a comparative analysis between the pre-COVID and COVID period, we have identified significant contributions of the sentiment factor for the Great Britain and the overall

Developed European market (Great Britain, Germany, France, and Italy). By splitting the sample in 3 industries, we observed that certain industries were positively influenced by investors sentiments during the pandemic. The results can be useful to understand how sentiments can affect stock returns depending on the market or industry these operate, as well as how these sentiments can contribute during different conditions of the market. **(A2.4, A3.1)**

XIV. Herding behavior, unconventional events, and non-standard monetary policy decisions

Author: Maria Miruna POCHEA

This study explores investors' herding behavior toward the market consensus in the U.S. and Europe stock markets from January 5, 2006 to September 30, 2020. We find that the uncertainty triggered by the outbreak of the Covid-19 pandemic amplified the observed herding behavior. The occurrence of unconventional events induced herding for both markets and, moreover, this behavior is driven by non-fundamental information. Finally, our analysis suggests that the ECB's non-standard monetary policy announcements induced both spurious and intentional herding, while the Fed's releases did not cause herding. **(A2.6, A3.3)**

Table 2 presents the results dissemination through participations in international conferences and the research stages followed by the project's team.

Table 2. Participation in conferences, scientific seminars and research stages

Conferences and Scientific Seminars	
I. 23rd INFER Annual Conference, 8-10 September 2021, Lisbon, Portugal	
Accepted Paper	Extreme market sentiments and herding behavior
Authors	Angela Maria FILIP, Maria Miruna POCHEA, Andreea Maria PECE
II. FIBA 2021, 27-29 May 2021, Bucharest, Romania	
Accepted Paper	Impact of cultural norms on foreign bias
Authors	Cristina NEGRU, Alexandru TODEA
III. ERMAS 2021, 28-30 July 2021, Sibiu, Romania	
Accepted Paper	Cultural norms influence on international asset allocation
Authors	Cristina NEGRU, Alexandru TODEA
IV. 8th International Conference on Opportunities and Challenges in Management, Economics, and Accounting, 19-21 November 2021, Paris, France	
Accepted Paper	Extreme market sentiments and herding behavior
Authors	Angela Maria FILIP, Maria Miruna POCHEA, Andreea Maria PECE
V. 6th Vietnam Symposium in Banking and Finance	
Accepted Paper	Bank connectedness and investors' sentiment
Authors	Mihai NIȚOI, Maria Miruna POCHEA
VI. The 5th International Conference on Management, Economics, and Finance (ICMEF), 8-10 July 2022, Zurich, Switzerland	
Accepted Paper	The influence of cultural norms on international equity allocation
Authors	Cristina NEGRU, Alexandru TODEA
VII. 5th International Academic Conference on Management and Economics, 22-24 July 2022, Copenhagen, Denmark	

Accepted Paper	Investors' behavior and market sentiment
Authors	Angela Maria FILIP, Maria Miruna POCHEA, Andreea Maria PECE
VIII. International Conference on Social Science and Economics, 3-4 September 2022, Munich, Germany	
Accepted Paper	Extreme market sentiments and herding behavior
Authors	Angela Maria FILIP, Maria Miruna POCHEA, Andreea Maria PECE
IX. 7th Vietnam Symposium in Banking and Finance, 27-29 October 2022, Hanoi, Vietnam	
Accepted Paper	Unveiling the sentiment behind central bank narratives: A novel deep learning index
Authors	Mihai NIȚOI, Maria Miruna POCHEA, Stefan-Constantin RADU
Research Stages	
X. Research and documentation stage at Carlos III University, 11-17 October 2021, Madrid, Spain	
Participant	Maria Miruna POCHEA
XI. Research and documentation stage at Carlos III University, 11-17 October 2021, Madrid, Spain	
Participant	Angela Maria FILIP
XII. Research and documentation stage at Carlos III University, 28 November - 1 December, 2021, Madrid, Spain	
Participant	Cristian Marius LITAN

In September 9th, 2022, we have organized a **workshop entitled “The nexus between investor sentiment and equity market dynamics. A new sentiment indicator approach”** at Babes-Bolyai University, Faculty of Economics and Business Administration (the detailed program is available at the project's web page <https://econ.ubbcluj.ro/NISEM/>). The main results and the most representative papers elaborated by the project's team have been presented during the working session.

To conclude, the objectives and activities associated to each stage have been entirely accomplished (100%) according to the work plan, and the final results are:

- **the construction of a sentiment indicators database** at country level, available free of charge at Harvard Database³, which will be continuously upgraded;
- **2 papers** published in **Web of Science indexed journals**;
- the results of the study *The nexus between bank connectedness and investors' sentiment*, published in *Finance Research Letters*, have been **promoted through a news for the public**⁴;
- **1 paper accepted and in print in a Web of Science indexed journal**;
- **2 papers** published in **international databases indexed journals**;
- 4 papers submitted for evaluation at Web of Science indexed journals;
- 1 paper submitted for evaluation at an international database indexed journal;

³ <https://dataverse.harvard.edu/privateurl.xhtml?token=234a6b8c-63f7-4d73-aa95-3ec6a6f2b365>. The link has been anonymized to ensure the blind review.

⁴ <https://news.ubbcluj.ro/harta-propagarii-riscurilor-intre-institutiile-bancare-europene-si-din-sua-si-efectul-sentimentelor-investitorilor-asupra-acesteia-cercetare-la-ubb/>

- 4 working papers going to be submitted at Web of Science indexed journals;
- 3 research and documentation stages at prestigious universities abroad;
- results dissemination through **9 participations in prominent international conferences**;
- **1 workshop** organized in September 9, 2022 at the Faculty of Economics and Business Administration, Babes-Bolyai University of Cluj-Napoca, to present the results of the project;
- the update of the project's web page⁵;
- the scientific and technical report.

Finally, we highlight as the main result of the project the construction of country-level sentiment indices and making them available to the general public, as well as all collected and processed data. We estimate that the article dedicated to this topic will be published in a top journal in the field of Business, Finance. By publicly and freely providing these data, we facilitate future research on measuring the sentiment of central banks communications in other emerging or developed countries and different research applications of these sentiment scores. On the one hand, the tools and findings provided by this paper can help financial market participants to form an opinion about central bank initiatives faster and with less effort than by reading and analyzing all the communication materials. On the other hand, central banks can use these sentiment indices to adjust their monetary policy communications in order to deliver the proper message to the public about their future decisions. Finally, this paper encourages future research in improving the accuracy of central banks tone and in investigating other interesting economic and financial research questions. In the next period, we will create a website exclusively dedicated to this paper, which will contain the manuscript, data collected, and sentiment indices, updated as new monetary policy minutes are released, but also information that will be accessible to the general public. After the review process is complete and the scientific article is published, we will also make the programming code used to estimate the sentiment indices available to the public.

Project leader,

Assoc. Prof. Maria Miruna POCHEA



⁵ <https://econ.ubbcluj.ro/NISEM/>