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WORK HISTORY

National Bank of Romania | Bucharest, Romania | 2009 – present

SENIOR ECONOMIST - Financial Stability Department | Systemic Risks Monitoring Division | 2012 – present

- **Contributions to Financial Stability Reports:** I have a strong record of making significant contributions to Financial Stability Reviews, conducting thorough macro-financial analyses and developing risk assessments that have improved financial stability frameworks at the National Bank of Romania. These analyses have covered a broad range of areas, including macro analyses, the economic and financial health of Romanian enterprises, the non-bank financial sector (lending non-bank financial institutions, insurance companies, investment funds, private pension funds, etc.), CBDC, trade credit, and more. These contributions showcase my practical experience and achievements across several fields, and I believe they will inspire confidence in my abilities, expertise, and collaborative skills.
- **Coordinating the project analysing CBDC's impact on Banks' and Private Sector Balance Sheets:** Conducted analyses and research (CBDC issuance impact on banks' balance sheets) using banks' balance sheets, monetary aggregates, financial accounts, and households' structural financial and behavioural data. Utilised machine learning, mathematical, non-parametric, and parametric methods and models to assess potential demand and monetary effects. Employed an innovative approach to profiling population segments and quantifying potential demand.
- **Crypto-assets Analyses Coordination:** Analysed the relationship between crypto-assets and the financial system, as well as the effects of the MiCA Regulation implementation.
- **Member of the NBR's EMT (E-Money Tokens) and ART (Asset Referenced Tokens) Authorising and Licensing Workstream**.
- **Financial stability-related regulatory initiatives:** Provided inputs (observations and comments) to financial stability-related regulatory initiatives of the Regulatory and Licensing Department.
- **Systemic Risk Mitigation:** Played a pivotal role in identifying and assessing systemic risks within the financial sector, leading to key policy-related documents intended to mitigate potential economic disruptions.
- **Due Diligence Country Reports and Credit Rating Agencies Reports Assessments.**
- **Policy Development:** Participated in developing macroprudential and financial stability policies-related documents, including policies addressing corporate and household indebtedness, aiming to strengthen the financial system's resilience, such as the *National Committee for Macroprudential Oversight*'s (NCMO) Recommendations.
- **Analyses of risks and vulnerabilities of the financial system:** Constructed heat maps using indicators specific to the non-bank financial sector.

- **Banks' leadership assessment committee membership:** Participated in several interviews on behalf of the Financial Stability Department to assess the professional adequacy of the banks' senior management.
- **Survey, Team and Work Stream Leadership/Coordination:** Led the conception and implementation of a comprehensive survey on non-financial corporations' access to finance (including the capacity to withstand adverse financial developments such as nominal interest rate hikes), producing bi-annual analyses and policy-related documents.
- **Analyses based on consumer-related data:** Performed several analyses regarding living conditions, saving and consumption behaviours, digital financial inclusion, etc.
- **European Central Bank Practices Implementation:** I conducted and led the Bank Lending Survey for several years and drafted analyses related to monetary economics based on BLS data. During this period, I gained a thorough understanding of the monetary policy transmission mechanisms via the bank lending channel. I ensured that the National Bank of Romania's Bank Lending Survey methodology more closely aligned with ECB practices by adjusting the initial interpretation of the banks' responses, thereby improving consistency and comparability in analysing lending conditions. Following the survey results, my team provided valuable insights for the Monetary Policy Department.
- **Data-Driven Strategic Insights:** Developed data-driven insights on corporations' financial health and economic soundness, aiding in formulating targeted macroeconomic policies and public interventions, such as the *National Committee for Macroprudential Oversight*'s (NCMO) Recommendations.
- **NFC's investments and access to finance:** Analysed what impedes Romanian NFC's investments and access to finance.
- **Quant:** Advanced econometric techniques (VAR, SVAR, MSVAR, linear regressions, ARIMA, Ridge and Lasso Regressions, etc.), non-parametric statistical modelling, spatial analysis, LLM Prompt Engineering and machine learning models.
- **Research Publication:** Authored, co-authored and contributed to several influential research and working papers on economics, financial stability and macroprudential policy, demonstrating strong analytical and teamwork skills.
- **Presenting research and analysis outcomes to heterogeneous audiences**: i.e. Trade credit research, NFC's investments and access to finance, and CBDC research presented at NBR Seminar Series, ECB Seminar Series and IMF, NBR or Atlanta FED international conferences and seminars.
- **International Collaboration:** Engaged in cross-border collaboration projects with international financial institutions, fostering solid professional networks.
- **Acquiring a strong ability to work in a fast-paced policy environment after the GF and COVID-19 crises**.
- **Acquiring advanced visualisation skills**: I have sound knowledge of using built-in R and Python visualisation software.
- **Acquiring advanced geospatial analysis skills:** i) Multivariate Clustering (K-means, Fuzzy K-means, K-medoids, Gaussian Mixture Models, etc.), ii) the construction of relatively balanced concentration zones, iii) Anselin Local Moran's I statistic, iv) density-based clustering, v) Getis-Ord Gi statistic (hot spot analysis), etc.

REPORTING SPECIALIST – Central Credit Register – Financial Stability Department | 2009 – 2012

- **Participated in integrating new lending-specific indicators** into the Central Credit Register, ensuring comprehensive coverage of credit data for companies and individuals and enhancing the accuracy of the Register's reporting capabilities.
- **Aligned the central bank's analytical requirements** with specific positions from banks' balance sheets, ensuring indicators were accurately matched and effectively supported the bank's analysis and decision-making processes.
- **Conducted thorough data verification** by meticulously comparing reported figures by banks with historical data and performed in-depth analyses whenever discrepancies were identified, ensuring the reliability and integrity of the data.
- **Analysed trends in reported lending data,** providing detailed insights and timely updates to department heads on the evolution of non-governmental credit. This supported informed decision-making within the central bank.
- **Acquired and applied a solid knowledge of bank lending data,** gaining a deep understanding of credit information related to companies and individuals and developing a robust comprehension of the structure of bank assets.

FINANCIAL STABILITY EXPERT (ESCB/IO) | European Central Bank | Macro-Financial Linkages Division | **2016**

- **Working closely with colleagues from the Supervision Directorate within the Single Supervisory Mechanism (Joint Supervisory Teams (JST) - European Central Bank) during my tenure at the European Central Bank.**
- **Conducted stress testing for the Euro area banking sector,** analysed banks' balance sheets, and assessed the impact of various macroeconomic scenarios while drafting comprehensive reports on the results.
- **Prepared speeches on non-performing loans (NPL) for executive board members,** tailoring content for public and official European engagements and contributing to impactful communication on this critical financial stability topic.
- **Drafted the Financial Structures Report** as one of the two primary authors, providing detailed analysis and insights that supported the European Central Bank's assessments of the euro area's financial system's structure (banking sector, insurance companies sector, investment funds, etc.) and stability.

Civic Partnership for Development and Inclusion Association | Bucharest, Romania | **Starting from 2024**

- **Responsible for conducting research and analysis** to identify economic sectors and social groups requiring funding allocation for development and a higher degree of financial inclusion.

INTERNATIONAL COOPERATION & REPRESENTATION

- Member on behalf of the NBR of the **ESRB Working Group on Heatmaps**
- Member on behalf of the NBR on the **Council of Europe Crowdfunding Legislative Proposal Working Group**
- Member on behalf of the NBR on the **Council of Europe Digital Euro Legislative Proposal Working Group**

EDUCATION & PROFESSIONAL DEVELOPMENT

PhD Candidate - Research on *The Evolution of the Central Banks' Functions and Policies in the Context of New Global Challenges (Digitalisation, Sustainable Finance, Climate and Natural Disasters Risks, Geopolitical Risks, etc.)*, according to the contract and agreed planning with the doctoral school | Bucharest University of Economic Studies | 2023 – foreseen December 2026

In Romania, publishing at least five papers in prestigious, anonymised, double peer-reviewed international journals during the PhD programme. Consequently, intensive and high-quality research is performed continuously during the PhD studies.

Master's degree (MSc) in quantitative finance | Bucharest University of Economic Studies | FINAS | 2005 – 2007

During the master's program, I deepened my knowledge of econometrics, banks' balance sheet indicators, corporate economics and finance, and macro and monetary economics.

BSc in Economics | University of Craiova | 2001 – 2005

During the BA cycle, I gained a solid understanding of macroeconomics and the interaction between various policies. Additionally, I acquired a strong knowledge of non-parametric statistical methods.

High School | National College "Gib Mihăescu" – Valcea County | IT&C Class | 1997 – 2001

SELECTED CERTIFICATIONS & TRAINING

Interpersonal Collaboration and Assertive Communication | Trend Consulting | 2024

Financial Stability Policy of Central Banks: Recent Trends, Interactions with Other Policies, and Key Challenges | JVI Vienna, Austria | 2018

Finance for Macroeconomists | IMF Washington, USA | 2015 |

Marco-financial Surveillance | JVI Vienna, Austria | 2013

Digital Finance Academy (including Open Finance and Open Banking courses) | European University Institute – Florence, Italy | 2023-2024

MiCAR Online Advanced Course | European University Institute – Florence, Italy | 2025 – **Certificate of Excellence**

Financial Stability Seminar | Bundesbank, Frankfurt, Germany | 2011

Financial Stability Workshop | Centre of Excellence in Finance, Ljubljana, Slovenia | 2010

IRB Models Validation Workshop | Banque de Luxembourg, Luxembourg | 2013

SELECTED PEER-REVIEWED PUBLICATIONS

Dumitrescu, Catalin, **CBDC Stress Test in a Dual Currency Setting**, NBR Occasional Paper Series, National Bank of Romania Website, Forthcoming November 2025

Short description: *This forthcoming paper presents the first comprehensive CBDC Stress Test ever designed for a dual-currency savings economy, offering a fully replicable framework for advanced monetary unions such as the euro area. By integrating synthetic-agent adoption models, liquidity cost functions, macro-financial linkages with embedded CBDC issuance, and simulations of credit contraction and tightening lending standards, as well as macro-prudential stress modules, it assesses the short-, medium-, and long-term liquidity needs of banks under CBDC-driven deposit substitution, following a pass-through funding principle. The model provides a comprehensive framework for assessing systemic resilience, policy calibration, and optimal liquidity buffers, serving as a global template for central banks seeking to strike a balance between digital innovation and financial stability.*

Dumitrescu, Catalin, **Demystifying consumers' adoption of a digital euro in the euro area**, Proceedings of International Conference on Business Excellence, 2025

Short description: This paper introduces and validates two key hypotheses about the adoption of the retail digital euro by consumers in the euro area: i) the maximum adoption level would not exceed 65% of the level used by Adalid, Meller, and EC JRC, and ii) the funding sources for digital euro holdings would roughly be in a 10:90 ratio (cash to deposits). The findings have significant implications for analysing monetary and macroeconomic impacts. This study combines behavioural data from surveys (Eurostat, World Bank Findex, Eurobarometer) with quantitative macroeconomic and behavioural financial/monetary data solely related to euro area consumers. The methods used to quantify and validate the maximum adoption level and support the two hypotheses include: i) non-parametric statistical techniques (descriptive statistics, cumulative histograms, Mann-Whitney, Kolmogorov-Smirnov, Fisher test, Wilcoxon test), ii) Pearson and Spearman correlations, iii) composite indices, iv) standard autoregressive vector methods, v) parametric methods such as quadratic equation calculations, and vi) specific unsupervised machine learning techniques, including multivariate clustering (Gaussian mixture models, partitioning around medoids, k-medoids, k-means, and fuzzy k-means), univariate clustering, Kohonen Self-Organising Maps, and Extreme Gradient Boosting.

Neagu, Florian & Tarța, Alina & Banu, Elena & Dumitrescu, Cătălin & Tatarici, Luminița, **Dealing with Real Estate Vulnerabilities: a Romanian Macroprudential Perspective**, Central Bank Journal of Law and Finance 1 (1), pp. 82-103, 2014 (available only on hard copy)

Short description: *This paper investigates the main financial stability challenges stemming from the Romanian real estate market. We find that domestic banks are highly vulnerable to negative developments in the real estate sector. The quality of such portfolios on banks' balance sheets is subpar, and the reliability of foreign capital inflows into the Romanian real estate sector is questionable. We examine the primary macroprudential tools designed to address these issues and consider potential additional measures. Romania's decade-long experience with instruments targeting debtors (such as loan-to-value and debt service-to-income ratios) is quite unique within the European Union. It enables a thorough analysis of the effectiveness of these instruments and the reasons for their recalibration.*

Pal, Rozalia & Wruuck, Patricia & Stamate, Amalia & Dumitrescu, Catalin, **Investment: What holds Romanian firms back?**, EIB Working Papers 2019/08, European Investment Bank, 2019

Short description: *In Romania, the proportion of firms engaging in investment is among the lowest in the European Union. This occurs despite strong economic growth in recent years and the ongoing need to upgrade the country's capital stock. This paper utilises data from two surveys – the EIB Investment Survey and a survey on access to finance conducted by the National Bank of Romania – to examine the reasons for this subdued corporate investment activity. It also contributes to the discussion on why investment in Central, Eastern, and South-Eastern Europe has remained relatively muted after the financial crisis.*

Dumitrescu, Catalin & Despa, Olivia, **Politici monetare și fiscale și țintirea inflației (en. Monetary and fiscal policies and inflation targeting)**, Studii şi Cercetări de Calcul Economic şi Cibernetică Economică 45, 2011

Short description: *This paper employs a game theory modelling approach to analyse the macroeconomic interactions and relationships among the three primary economic actors. In our game, there are three players: the monetary authority (represented by the central bank), the fiscal authority (represented by the government), and the private sector (comprising businesses and individuals). Initially, we use a model that includes only the central bank and government as players, aiming to find the optimal form of monetary and fiscal policy coordination in different contexts or types of interaction when the two institutions minimise their losses, considering only their objectives (Nash solution). At various points in this game, they will appear on this "stage", with the third player, the private sector, playing a vital role, as the goal for the first two players (the central bank and the government) is to enhance the real economy's efficiency and welfare.*

Chiriacescu, Bogdan & Bancu, Ana Maria & Dumitrescu, Catalin, **The external competitiveness of Romania, a global value chain perspective**, Metalurgia International Journal, 2013

Short description: *This paper aims to assess Romania's external competitiveness, motivated by a desire to understand factors that sustain the trade deficit. The study aims to provide a quantitative overview of Romania's position within global value chains in comparison to other countries in Central and Eastern Europe. In the context of new realities in international trade, characterised by the fragmentation of production, the research shifts focus from trade in goods to trade in value-added, which is also the methodological approach adopted in this paper. The results indicate that the Romanian economy is positioned in the upstream part of global value chains, with a lower level of specialisation in production stages than neighbouring countries. A high dependence on imports for aggregate demand largely explains the trade deficit. Conversely, the trade surplus observed in some regional countries results from higher levels of specialisation and more intensive participation in global value chains.*

Additionally, I provided several valuable comments and observations for the book titled **Financial Stability and Macroprudential Policy** *(Neagu et al., 2024, Curtea Veche Publishing), as acknowledged by the authors in the book's preface.*

SELECTED INSTITUTIONAL PUBLICATIONS

Contributions to Financial Stability Reports

■ **Lead Author** – Chapter 2.1: Financial and Economic Soundness of Romanian Enterprises Authored independently on three separate occasions.

■ **Sole Author** – Special Feature: Central Bank Digital Currencies Provided exclusive insights into the early analysis and policy framing of CBDCs.

■ **Main Contributing Author** – Chapter: Non-bank Financial Intermediaries. Regularly engaged as the primary analyst in drafting content and risk assessments.

■ **Contributing Author** – Special Feature: Trade Credit Collaborated on the evaluation of trade credit channels and systemic implications.

■ **Lead Author** – Chapter 1.2: Macroeconomic Developments. Independently authored this section twice, offering key macro-financial narratives.

ECB's Financial Structures Report

■ **Main Contributing Author** – 2016 Edition

CURRENT PROJECTS IN WORKING PROGRESS

Geospatial analysis of the ATM Network in Romania: Studying access to cash for households by employing innovative geospatial procedures.

Trade credit analysis: Co-authoring a working paper on trade credit dynamics and implications for financial stability, starting from the Special Feature Section of the Financial Stability Report, Ed. I 2024 (which I co-authored).

SELECTED INTERNATIONAL CONFERENCES AND SEMINARS

CEPR FinTech & Digital Currencies RPN Annual Meeting | 9–10 October 2025, Gerzensee, Switzerland)

Banking 4.0 Annual Conference | Sinaia, Romania | CESEE Leading Conference on Digital Finance | (Forthcoming November 2025)

https://banking40.ro/#speakers2025

Main speaker on digital finance and financial stability

6th Annual International Conference on Central Bank Business Surveys | Atlanta FED-NBP | Warsaw, Poland | 2015

Presentation held with the title: The National Bank of Romania experience regarding surveys on bank lending and the access to finance of non-financial corporations - https://www.atlantafed.org/-/media/documents/research/surveys/central-bank-business-survey-and-liaison-program-group/past-conference-hosts/2015/warsaw-poland-agenda.pdf

Annual Regional Seminar on Financial Stability Issues | NBR-IMF | 2018

Presentation held with the title: Investment activity of non-financial companies in Romania: evolution, drivers and constraints - https://bnr.ro/Annual-Seminar-on-Financial-Stability-Issues-18733-Mobile.aspx

Annual Regional Seminar on Financial Stability Issues organised by the National Bank of Romania and the Monetary and Capital Markets Department, IMF | NBR-IMF | 2012

Presentation held with the title: Bank Lending Survey - an important tool in assessing bank lending developments - https://www.bnro.ro/New-Challenges-for-the-Central-Banks-in-Conducting-Financial-Stability-Policies-9973-Mobile.aspx

Knowledge Sharing Session | ECB | October 7th, 2024; **Modern Finance Conference | Kozminski University (No. 1 in Central and Eastern Europe in Business and Finance Education according to Financial Times)** | September 16th, 2024

Presentation of the working paper: *Demystifying consumers' adoption of a Digital Euro in the euro area*

REFERENCES

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