

### Table of Contents

- The Impact of Uncertain Outcomes, High-Leverage Results, and Player Transfers on the Cumulative Abnormal Returns of Publicly Traded Soccer Clubs**  
Sachin Narayanan, Florida State University  
Nathan Pifer, Florida State University  
Adrian Simon, Florida State University
- Two cross-species Drivers of Fertility**  
Justin Lee, Independent Researcher
- Resilience of Ukraine's Banking Liquidity Infrastructure: The Impact of Migration Shocks (2013 -2023)**  
Oleksii Sliptsov, Association for Financial Professionals (AFP), PrivatBank JSC CB
- Effective Markovian Projection Using Coefficient Matching: Application to Forward Starting Options**  
Kefentse Dipudi, University of Cape Town (UCT)  
Joerg Kienitz, University of Cape Town (UCT), University of Wuppertal - Applied Mathematics, mrig  
Thomas McWalter, University of Cape Town (UCT), University of Johannesburg
- Do Match Surprises Move Fan Token Prices? Evidence from UEFA Competitions**  
Morris Justin Blom, University of Zurich  
Marco Henrique Pereira, University of Zurich
- Make American Markets Gyrate Again!**  
Yugi Zheng, Trinity College (Dublin) - Trinity Business School  
Brian M. Lucey, Trinity Business School, Trinity College Dublin

[^top](#)

### ECONOMETRIC MODELING: INTERNATIONAL FINANCIAL MARKETS - VOLATILITY & FINANCIAL CRISES eJOURNAL

- "The Impact of Uncertain Outcomes, High-Leverage Results, and Player Transfers on the Cumulative Abnormal Returns of Publicly Traded Soccer Clubs"**

**SACHIN NARAYANAN**, Florida State University  
Email: [sn20g@fsu.edu](mailto:sn20g@fsu.edu)  
**NATHAN PIFER**, Florida State University  
Email: [david.pifer@fsu.edu](mailto:david.pifer@fsu.edu)  
**ADRIAN SIMION**, Florida State University  
Email: [amsimion@syf.edu](mailto:amsimion@syf.edu)

Publicly traded soccer clubs provide a natural laboratory to examine investor behaviors, with immediate, observable events. This study investigates the cumulative abnormal returns (CARs) following unexpected outcomes, high-leverage competitions, and transfer activity on 7,175 matches and 1,209 player-transfers. Losses generate significantly more negative CARs than positive CARs following victories, suggesting asymmetric market reactions, with penalties intensifying with outcome improbability. More unexpected wins yield stronger positive returns, but the effects flatten at the extremes of unexpectedness. Transfer analyses reveal that overpayments above market value reduce CARs for both acquisitions and departures, indicating a penalty on perceived inefficiency regardless of transaction direction.

- "Two cross-species Drivers of Fertility"**

**JUSTIN LEE**, Independent Researcher  
Email: [gdgrass\\_us@hotmail.com](mailto:gdgrass_us@hotmail.com)

When should life reproduce? Existing theories fail to unify reproductive timing across kingdoms and often misapply species-level r/K selection to individual decisions. We propose a universal P-T-C principle: all multicellular organisms exhibit one of three reproductive states-Programmed (P), Threat-triggered (T), or Competition-delayed (C). In safe environments, individuals follow intrinsic developmental programs (P); under survival threat, they switch to Threat-triggered (T) and delay reproduction until the threat passes or reproduction to avoid elimination (C). This framework is supported across plants, insects, mammals, and humans. Crucially, it resolves long-standing conceptual confusion by separating analytical scales: r/K describes interspecific evolutionary strategies, while P-T-C governs intraspecific state switching providing a unified, cross-kingdom foundation for understanding fertility dynamics from ecology to society.

- "Resilience of Ukraine's Banking Liquidity Infrastructure: The Impact of Migration Shocks (2013 -2023)"**

**OLEKSII SLIPTSOV**, Association for Financial Professionals (AFP), PrivatBank JSC CB  
Email: [arthur220513timur110415@gmail.com](mailto:arthur220513timur110415@gmail.com)

This study analyzes the impact of large-scale migration shocks on the liquidity infrastructure of Ukraine's banking system from 2013 to 2023. It identifies two key crisis periods triggered by military-political factors: an internal displacement wave (2014-2015) and an external refugee wave (2022-2023). Using data from the National Bank of Ukraine (NBU), the State Statistics Service, the International Organization for Migration (IOM), and aggregated operational data from a leading Ukrainian bank, we conduct a comprehensive assessment of liquidity infrastructure resilience. The paper introduces the Liquidity Adaptation Rate (LAR)-an original analytical framework designed to quantify resilience in cash-based financial infrastructures. The analysis employs a novel metric-the Liquidity Adaptation Rate (LAR)-which measures the banking system's ability to maintain balanced liquidity amid rapid demographic shifts. The results show that the Ukrainian banking system demonstrated high adaptability, albeit with a 3-6 month reaction lag. Accelerated digitalization, the automation of cash in transit (CIT) routes, and a significant increase in non-cash transactions were critical stabilizing factors. The paper concludes with practical recommendations for regulators and banks to enhance resilience against future shocks.

- "Effective Markovian Projection Using Coefficient Matching: Application to Forward Starting Options"**

**KEFENTSE DIPUDI**, University of Cape Town (UCT)  
Email: [DPDKEF001@myuct.ac.za](mailto:DPDKEF001@myuct.ac.za)  
**JOERG KIENITZ**, University of Cape Town (UCT), University of Wuppertal - Applied Mathematics, mrig  
Email: [joerg.kienitz@pmx.de](mailto:joerg.kienitz@pmx.de)  
**THOMAS MCWALTER**, University of Cape Town (UCT), University of Johannesburg  
Email: [tom@analytical.co.za](mailto:tom@analytical.co.za)

We investigate a framework that reconciles stochastic local volatility (SLV) and stochastic volatility (SV) models while maintaining tractability and market consistency. At its core is an Effective Coefficient Matching technique, which projects complex models onto simpler counterparts with semi-analytic accuracy of order  $O(\epsilon^2)$ . We also derive a semi-analytic pricing formula for forward starting options within a broad class of stochastic volatility models. The representation characterizes the forward implied volatility surface in closed form, enhances pricing accuracy, and allows forward dynamics to be embedded into calibration.

- "Do Match Surprises Move Fan Token Prices? Evidence from UEFA Competitions"**

**MORRIS JUSTIN BLOM**, University of Zurich  
Email: [morrisjustin.blom@uzh.ch](mailto:morrisjustin.blom@uzh.ch)  
**MARCO HENRIQUE PEREIRA**, University of Zurich  
Email: [marco.pereira@csa.uzh.ch](mailto:marco.pereira@csa.uzh.ch)

We examine whether match outcomes and surprises influence the short-term pricing of football fan tokens (FFT). Using an event study on 557 UEFA matches involving 17 clubs, we implement a novel twelve-category classification that combines unexpectedness (expected/unexpected), intensity (strong/weak), and outcome (win/loss/draw). We find that losses—especially unexpected ones—trigger significant negative abnormal returns, with typical declines between  $-2.7\%$  and  $-5.1\%$  on match day. In contrast, positive surprises fail to produce symmetric gains, pointing to an asymmetry consistent with loss aversion. While surprises do affect prices, the direction of the outcome (win vs. loss) has a stronger impact than the degree of surprise. Price reactions are most pronounced in high-stakes matches, such as UEFA Champions League knockouts. These findings suggest that FFT markets are driven more by sentiment than by efficient information processing. We characterize FFTs as speculative, loss-sensitive assets, and highlight implications for retail investors, clubs designing token features, and regulators concerned with hybrid financial instruments.

- "Make American Markets Gyrate Again!"**

**YUQI ZHENG**, Trinity College (Dublin) - Trinity Business School  
Email: [zhengy2@tcd.ie](mailto:zhengy2@tcd.ie)  
**BRIAN M. LUCEY**, Trinity Business School, Trinity College Dublin  
Email: [BLUCEY@TCD.IE](mailto:BLUCEY@TCD.IE)

This study examines how Donald Trump's social media communications, both general and policy-related, affect U.S. financial markets. General posts reflect changes in public sentiment, while policy-related messages are treated as external shocks that reveal market reactions to political uncertainty. Posts from Trump's Truth Social account between 2022 and 2025 are collected, build sentiment and urgency indicators. Three topic modeling methods are used: Latent Dirichlet Allocation (LDA), Joint Sentiment-Topic (JST), and a reversed JST (rJST). The LDA model identifies discussion themes, while the JST and rJST models capture both topic structure and sentiment polarity. We first apply an event-study design to measure short-term market reactions around Trump's posts. We then use a stacked difference-in-differences approach to estimate the average effect of policy-related shocks across industries and time. The results show that general social media communication overall sentiment from the JST model varies across types of social media communication. Overall sentiment from the rJST model varies across cumulative abnormal returns (CAR), while topic-level sentiment from the rJST model varies across industries. Topics with words such as "Trump", "president", "America" and "Biden" have the strongest influence. Policy-sensitive sectors such as Energy, Health Care, and Industrials often react negatively, while technology sectors respond positively. When daily abnormal returns (AR) are used instead of CAR, the main patterns remain, although statistical significance weakens. The JST model loses explanatory power at the daily level, but the rJST topic-level sentiment remains strong and directionally consistent. Topic 2, focused on "Trump", negatively affects policy-sensitive industries, while Topic 5, with terms such as "America", "Biden" and "president", is positively related to returns across most sectors. The results show that both general and policy-related social media messages can move financial markets. Policy-related posts act as measurable shocks, while general messages influence overall investor sentiment. Topic-based sentiment models provide a useful framework for understanding how political communication and public discourse shape market behavior. These results also have clear economic policy implications. The cumulative abnormal returns (CAR) highlight that political communication generates persistent impacts on market expectations. Understanding these dynamics can inform policy communication strategies aimed at stabilizing investor sentiment and maintaining financial market confidence.

[^top](#)

### About this eJournal

This area includes content focused on econometric studies of the determinants of volatility in financial markets, including seasonal price fluctuations and speculation; and analysis of the causes and impacts of global and domestic financial crises. The topics in this eJournal include topics from sections D84, E44, E51, E58, F21, F34, G15, G21 and H63 of the JEL classification system.

### Submissions

To submit your research to SSRN, sign in to the **SSRN User HeadQuarters**, click the My Papers link on left menu and then the Start New Submission button at top of page.

### Distribution Services

If your organization is interested in increasing readership for its research by starting a Research Paper Series, or sponsoring a Subject Matter eJournal, please email: [sales@ssrn.com](mailto:sales@ssrn.com)

### Distributed by

Economics Research Network (ERN), a division of Social Science Electronic Publishing (SSEP) and Social Science Research Network (SSRN)

### Advisory Board

Econometric Modeling: International Financial Markets - Volatility & Financial Crises eJournal

ANGUS S. DEATON

Dwight D. Eisenhower Professor of Economics and International Affairs Emeritus and Senior Scholar, Princeton University; Presidential Professor of Economics, University of Southern California; Princeton University; National Bureau of Economic Research (NBER)

ROBERT F. ENGLE

Professor of Finance Emeritus and Co-Director of the Volatility and Risk Institute at NYU Stern School of Business, New York University (NYU) - Department of Finance, National Bureau of Economic Research (NBER), New York University (NYU) - Volatility and Risk Institute

JERRY A. HAUSMAN

MacDonald Professor of Economics, Massachusetts Institute of Technology (MIT) - Department of Economics, National Bureau of Economic Research (NBER)

JAMES J. HECKMAN

Henry Schultz Distinguished Service Professor of Economics, University of Chicago - Department of Economics, National Bureau of Economic Research (NBER), American Bar Foundation, Institute for the Study of Labor (IZA), CESifo (Center for Economic Studies and Ifo Institute)

DANIEL L. MCFADDEN

E. Morris Cox Professor of Economics, University of California, Berkeley - Department of Economics, National Bureau of Economic Research (NBER)

RICHARD E. QUANDT

Princeton University, Andrew W. Mellon Foundation

CHRISTOPHER A. SIMS

Princeton University - Department of Economics, National Bureau of Economic Research (NBER)

JAMES H. STOCK

Burbank Professor of Political Economy, Harvard University - Department of Economics, National Bureau of Economic Research (NBER), Harvard University - Harvard Kennedy School (HKS)

MARK W. WATSON

Princeton University - Princeton School of Public and International Affairs, National Bureau of Economic Research (NBER)

[^top](#)

Links: [Subscribe to Journal](#) | [Unsubscribe](#) | [Join Site Subscription](#) | [Financial Hardship](#)

### Subscription Management

You can change your journal subscriptions by logging into **SSRN User HQ**. **Questions?** Please visit the [SSRN Support Center](#) to access live chat assistance or use our email ticketing system.

### Site Subscription Membership

Many university departments and other institutions have purchased site subscriptions covering all of the eJournals in a particular network. If you want to subscribe to any of the SSRN eJournals, you may be able to do so without charge by first checking to see if your institution currently has a site subscription.

To do this please click on any of the following URLs. Instructions for joining the site are included on these pages.

[Accounting Research Network](#)

[Cognitive Science Network](#)

[Corporate Governance Network](#)

[Economics Research Network](#)

[Entrepreneurship Research & Policy Network](#)

[Financial Economics Network](#)

[Health Economics Network](#)

[Information Systems & eBusiness Network](#)

[Legal Scholarship Network](#)

[Management Research Network](#)

[Political Science Network](#)

[Social Insurance Research Network](#)

[Classics Research Network](#)

[English & American Literature Research Network](#)

[Philosophy Research Network](#)

If your institution or department is not listed as a site, we would be happy to work with you to set one up. Please contact [site@ssrn.com](mailto:site@ssrn.com) for more information.

**Individual Membership (for those not covered by a site subscription)**

Join a site subscription, request a trial subscription, or purchase a subscription within the SSRN User HeadQuarters: <https://hq.ssrn.com/Subscriptions.cfm>

### Financial Hardship

If you are underpaid or facing financial hardship and believe you cannot pay for an eJournal, please send a detailed explanation to [Subscribe@ssrn.com](mailto:Subscribe@ssrn.com)

[^top](#)

To ensure delivery of this eJournal, please add [ERN@publish.ssrn.com](mailto:ERN@publish.ssrn.com) (Economics Research Network)

Please contact [ERNSupport@ssrn.com](mailto:ERNSupport@ssrn.com) if you have any questions.

**FORWARDING & REDISTRIBUTION**

From time to time, the journal may be forwarded to a particular eJournal user. If you forward a particular eJournal issue, or an excerpt from an issue, to an individual or for individual users, you may forward the particular issue, or an excerpt from an issue, to an individual or for individual users. If you forward an issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user, you may forward the particular issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user.

If you forward an issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user, you may forward the particular issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user.

If you forward an issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user, you may forward the particular issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user.

If you forward an issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user, you may forward the particular issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user.

If you forward an issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user, you may forward the particular issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user.

If you forward an issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user, you may forward the particular issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user.

If you forward an issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user, you may forward the particular issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user.

If you forward an issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user, you may forward the particular issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user.

If you forward an issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user, you may forward the particular issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user.

If you forward an issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user, you may forward the particular issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user.

If you forward an issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user, you may forward the particular issue, or an excerpt from an issue, to a particular eJournal user, or an excerpt from an issue, to a particular eJournal user.