

Paweł Fiedor

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Vocational Experience

- **Market Based Finance, Central Bank of Ireland** **Dublin, Ireland**
Senior Economist *01/2018 – ongoing*
 - Development of risk monitoring for market based finance;
 - Development of a chapter of the Macro Financial Review;
 - Research in market based finance, investment fund liquidity, central clearing;
 - International cooperation with FSB & ESRB on market based finance issues;
 - Member of the ESRB Joint Expert Group on Interconnectedness;
 - Member of the ESRB Task Force on CCPs;
 - Member of the Shadow Banking Coordination Group;
 - Preparing briefing notes for senior management on market based finance;
 - Mentoring junior staff.

 - **European Systemic Risk Board Secretariat, European Central Bank** **Frankfurt, Germany**
Research Analyst *09/2017 – 11/2017*
 - Leading two research projects on the structure and incentives in central clearing of derivatives;
 - Leading the policy analysis of central clearing based on transaction-level data on derivative contracts;
 - Contributing to exploratory work on macroprudential tools for the insurance sector;
 - Drafting policy reports and research papers relevant to systemic risk analysis;
 - Performing analytical and technical work on risk indicators for central counterparties;
 - Advising and coordinating the ESRB input within the international work on system-wide stress testing;
 - Member of the EIOPA Project Group on Operationalisation of the Crisis and Management Handbook.

 - **European Systemic Risk Board Secretariat, European Central Bank** **Frankfurt, Germany**
PhD Trainee *09/2016 – 08/2017*
 - Organisation and support of the work of the Advisory Scientific Committee;
 - Organisation and support of the work of the Insurance Expert Group;
 - Leading two research projects on the structure and incentives in central clearing of derivatives;
 - Leading the policy analysis of central clearing based on transaction-level data on derivative contracts;
 - Performing analytical and technical work on risk indicators for central counterparties;
 - Drafting policy reports and research papers relevant to systemic risk analysis;
 - Leading the editorial duties for the ESRB Working Paper Series;
 - Leading the analytical work determining liquidity of euro-denominated swap and bond markets;
 - Calculating clearing rates on behalf of the EU for the FSB's Review of OTC derivatives market reforms;
 - Member of the EIOPA Project Group on Operationalisation of the Crisis and Management Handbook.

 - **University of Cape Town** **Cape Town, South Africa**
Postdoctoral Research Fellow *07/2015 – 08/2016*
 - Research in financial economics (structural models of the financial system with heterogeneous agents);
 - Development of scientific software packages for financial economics;
 - Mentoring PhD students.

 - **International Fund Services, State Street** **Kraków, Poland**
Associate, Hedge Fund Administration *01/2011 – 06/2015*
 - Administration of a major US hedge fund (\$16bn NAV);
 - Liaising with multiple broker dealers to facilitate post-trade operations;
 - Conducting daily cash settlements and market value reconciliations including pricing;
 - Supporting external audits;
 - Training junior staff.

 - **Comarch S.A.** **Kraków, Poland**
Analyst, Internship *07/2009 – 09/2009*
 - Leading the analysis of the public sector IT needs in Poland, including the 2009-2012 EU subsidies.
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Education

- Cracow University of Economics **Kraków, Poland**
PhD in Financial Economics 2011 – 2015
 - Cracow University of Economics **Kraków, Poland**
MSc in Econometrics 2005 – 2010
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Professional Certificates

- Registered Prince2 Practitioner **PeopleCert**
 - Prince2 Foundation Certificate **PeopleCert**
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Professional Associations

- European Finance Association **Member**
 - Polish Economic Society **Member**
 - Royal Economic Society **Member**
 - IEEE **Member**
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Reviewer / Referee

- PLoS One **Impact factor: 2.806**
 - Journal of Banking and Finance **Impact factor: 2.570**
 - Physica A (Elsevier) **Impact factor: 2.243**
 - Sustainability (MDPI) **Impact factor: 1.789**
 - Entropy (MDPI) **Impact factor: 1.743**
 - Applied Sciences (MDPI) **Impact factor: 1.689**
 - Physics Letters A (Elsevier) **Impact factor: 1.626**
 - Complexity (Wiley) **Impact factor: 1.333**
 - Acta Physica Polonica A **Impact factor: 0.604**
 - Algorithmic Finance (IOPress) **Impact factor: 0.500**
 - Applied Economics Letters **Impact factor: 0.303**
 - South African Journal of Economics (Wiley) **Impact factor: 0.286**
 - Studies in Nonlinear Dynamics & Econometrics **Impact factor: 0.276**
 - Journal of Risk and Financial Management (MDPI)
 - Economic Research Southern Africa
 - Ekonomia (University of Warsaw)
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Grants

- Microsoft Azure Research Award CRM:0518970 **Microsoft**
Grant for computational agent-based modelling of financial systems for systemic risk analyses USD 20,000
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Working papers

- Paweł Fiedor, *Clearinghouse-Five: Determinants of voluntary clearing in European derivatives markets*.
In the European Union, there is obligation to centrally clear certain credit and interest rate derivative contracts, while other trades can be voluntarily cleared through a central counterparty if the parties to the contract wish to clear it thus. I use a dataset of all newly entered into derivatives contracts in the European Union between March 2016 and June 2017 to show the extent to which central clearing is being used for derivatives belonging to all five major asset classes, and to determine which characteristics of the contracts not under the clearing obligation affect the likelihood they would be centrally cleared on a voluntary basis. I show that currently only around 20% of credit and 40% of interest rate derivatives are centrally cleared, while equity, foreign exchange, and commodity derivatives are barely centrally cleared. I also show that there are significant effects of scale connected with central clearing, both in terms of previous clearing activity of the counterparty and the notional of the specific contract. Finally, I show that various characteristics of the contract, such as the maturity and the type of counterparty involved, also have significant impact on the probability of a trade being centrally cleared, but these effects tend to be ambiguous and depend on the specific combination of factors.
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Work in progress

- Yanis El-Omari, Paweł Fiedor, Sarah Lapschies, Eric Schaanning, Moritz Seidel, Francesco Vacirca, *Interdependencies in central clearing in the EU derivatives markets*.
 - ESRB Insurance Expert Group, *Macroprudential instruments for Insurance*.
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Policy Publications

- Emanuel Alfranseder, Paweł Fiedor, Sarah Lapschies, Pierre Marmara, Lucia Országhová, Paweł Sobolewski, *Assessing central counterparties in the EU – CCP indicators*, ESRB Occasional Paper 14, March 2018.
 - ESRB, *Regulatory risk-free yield curve properties and macroprudential consequences*, ESRB Report, August 2017.
 - Paweł Fiedor, Sarah Lapschies, Lucia Országhová, *Networks of counterparties in the centrally cleared EU-wide interest rate derivatives market*, ESRB Working Paper 54, September 2017.
 - Paweł Fiedor, Sarah Lapschies, Lucia Országhová, *Networks of counterparties in the centrally cleared EU-wide interest rate derivatives market*, National Bank of Slovakia Working Paper 7, September 2017.
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Interdisciplinary Publications

- **Journals**
 - P. Fiedor, *Structural Sustainability of the Polish Trade System*, Acta Physica Polonica A, 129(5), 1004-1007, 2016.
 - P. Fiedor, *Partial Mutual Information Analysis of Financial Networks*, Acta Physica Polonica A, 127(3), 863-867, 2015.
 - P. Fiedor, *Mutual Information-Based Hierarchies on Warsaw's Stock Exchange*, Acta Physica Polonica A, 127(3A), 33-37, 2015.
 - P. Fiedor, *Multiscale Analysis of the Predictability of Stock Returns*, Risks, 3(2), 219-233, 2015.
 - P. Fiedor, *Granger-Causal Non-Linear Financial Networks*, Journal of Network Theory in Finance, 1(2), 1-30, 2015.
 - T. You, P. Fiedor, A. Hołda, *Network Analysis of the Shanghai Stock Exchange Based on Partial Mutual Information*, Journal of Risk & Financial Management, 8(2), 266-284, 2015.
 - P. Fiedor, *Analysis of the Time Evolution of Non-Linear Financial Networks*, Acta Universitatis Lodzianis Folia Oeconomica 3 (314), 69-81, 2015.
 - P. Fiedor, *The Social Dynamics of the Peter Principle*, Journal of Engineering Science and Technology Review 8(1), 56-60, 2015.
 - P. Fiedor, *Networks in financial markets based on the mutual information rate*, Physical Review E 89, 052801, 2014.
 - P. Fiedor, *Information-theoretic approach to lead-lag effect on financial markets*, European Physical Journal B 87 (8), 168, 2014.
 - P. Fiedor, *Sector strength and efficiency on developed and emerging financial markets*, Physica A 413, 180-188, 2014.
 - P. Fiedor, A. Hołda, *A firm's perspective on econophysics-based currency risk analysis*, Financial Sciences, 4(21), 92-107, 2014.

P. Fiedor, *Financial Crises and the Future of the Real Economy*, Journal of Economics, Business and Management 2(2), 147-151, 2014.

P. Fiedor, *Refutation of the Economic Constant Hypothesis*, Cracow Review of Economics and Management 920, 22-32, 2013.

- **Book chapters**

P. Fiedor, *Noise-robustness of Networks in Financial Markets*, [in:] D. Kosiorowski, M. Snarska (eds.), KNOWLEDGE - ECONOMY - SOCIETY, Cracow University of Economics Foundation, 2016.

P. Fiedor, *The Economics of Consulting for SME*, [in:] M. Ćwiklicki, M. Jabłoński & V. Potocan (eds.), Management Consulting for Business and Public Administration, Cracow University of Economics Foundation, 2012.

P. Fiedor, *Taylor and 21st century consulting*, [in:] M. Ćwiklicki, M. Jabłoński & V. Potocan (eds.), Management Consulting for Business and Public Administration, Cracow University of Economics Foundation, 2012.

- **Conference proceedings**

P. Fiedor, *Maximum Entropy Production Principle for Stock Returns*, Proceedings of the Computational Intelligence for Financial Engineering and Economics Conference 2015, pp. 695-702, London, 2015.

P. Fiedor, *Frequency Effects on Predictability of Stock Returns*, Proceedings of the Computational Intelligence for Financial Engineering and Economics Conference 2014, pp. 247-254, London, 2014.

P. Fiedor, *Job Evaluation for Knowledge-Based Organizations*, Proceedings of of the 14th European Conference on Knowledge Management, pp. 860-867, Kaunas, 2013.

Invited Panellist

- **ESMA** **Paris, France**
ESMA EU Derivatives workshop 23rd April 2018
- **ESMA** **Paris, France**
ESRB Workshop on the CPMI-IOSCO PDF Data and the ESRB CCP Risk Indicators 6th July 2017

Invited Talks

- **Faculty of Computer Science and Management, Wrocław University of Technology** **Wrocław, Poland**
Information-theoretic approach to stock returns predictability on WSE 10th March 2015
- **Faculty of Management, Cracow University of Economics** **Kraków, Poland**
Econophysics-based maximum entropy principle for financial markets 13th November 2014
- **Faculty of Physics, University of Warsaw** **Warsaw, Poland**
Asymmetry and nonlinearity in the network analysis of financial markets 25th February 2014

Academic Conference Talks

- **2018 RiskLab/BoF/ESRB Conference on Systemic Risk Analytics** **Helsinki, Finland**
Clearinghouse-Five: determinants of voluntary clearing in European derivatives markets 29-30th May 2018
- **Irish Economic Association Conference 2018** **Dublin, Ireland**
Clearinghouse-Five: determinants of voluntary clearing in European derivatives markets 10-11th May 2018
- **15th International Conference CREDIT 2017** **Venice, Italy**
Networks of counterparties in the centrally cleared EU-wide interest rate derivatives market 28-29th September 2017
- **2017 RiskLab/BoF/ESRB Conference on Systemic Risk Analytics** **Helsinki, Finland**
Networks of counterparties in the centrally cleared EU-wide interest rate derivatives market 28-30th June 2017
- **INET Oxford-UCT workshop on Agent-Based Modelling for Systemic Stress Testing** **Oxford, UK**
Thoughts on System-Wide Stress Testing 9-10th March 2017
- **Computational Intelligence for Financial Engineering and Economics Conference** **Cape Town, RSA**
Maximum Entropy Production Principle for Stock Returns 8-10th December 2015
- **8th Symposium Physics in Economics and Social Science** **Rzeszów, Poland**
Structural Sustainability of the Polish Trade System 4-6th November 2015
- **Financial Risk & Network Theory 2015** **Cambridge, UK**
Structural Sustainability of the Global Supply System 9th September 2015
- **7th International Scientific Conference Faculty of Management CUE** **Kraków, Poland**
Noise-Robustness of Networks in Financial Markets 25th May 2015
- **Multivariate Statistical Analysis MSA 2014** **Łódź, Poland**
Analysis of the Time Evolution of Non-Linear Financial Networks 18th November 2014

- **7th Symposium Physics in Economics and Social Science**
Mutual information-based hierarchies on Warsaw's stock exchange Lublin, Poland
14th May 2014
 - **Computational Intelligence for Financial Engineering and Economics Conference**
Frequency Effects on Predictability of Stock Returns London, UK
27th March 2014
 - **2nd International Conference on Econophysics**
The Social Dynamics of the Peter Principle Kavala, Greece
13th September 2013
 - **14th European Conference on Knowledge Management - ECKM 2013**
Job Evaluation for Knowledge-Based Organizations Kaunas, Lithuania
6th September 2013
 - **3rd International Conference on Financial Management and Economics - ICFME 2013**
Financial crises and the future of the real economy Barcelona, Spain
10th August 2013
 - **II International Scientific Conference Towards Professional Consulting**
The Economics of Consulting for SME Kraków, Poland
18th October 2012
 - **II International Scientific Conference Towards Professional Consulting**
F. Taylor and 21st century consulting Kraków, Poland
18th October 2012
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Languages

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|------------|----------------------------|
| • Polish | Native |
| • English | Business English, C2 (CPE) |
| • German | B2 |
| • French | B1 |
| • Mandarin | A2 |
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Core Technical Skills

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| • Operation Systems | Windows, Linux - advanced user-level |
| • Office software | LaTeX, MS/Open Office, MS Project, MS Visio |
| • Statistical software | R, Matlab, Stata, Scipy |
| • Programming | C++, Python, Netlogo, SQL |
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Scientific Software Developed

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| • Black Rhino | https://github.com/cogeorg/blackrhino |
| • ABM template | https://github.com/cogeorg/abm_template |
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References

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|-----------------------------|---|
| • Dr. Kitty Moloney | Head of Market Based Finance, Central Bank of Ireland |
| • Francesco Mazzaferro | Head of the European Systemic Risk Board Secretariat |
| • Prof. Dr. Co-Pierre Georg | Associate Professor, University of Cape Town |
| • Prof. Dr. Artur Hołda | Professor, Cracow University of Economics |
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