



Michael Sigmund

Curriculum Vitae

I've always believed that if you put in the work, the results will come. (Michael Jordan)

Education

- 1999–2004 **Mag. rer. soc. oec.**, *Vienna University of Economics and Business Administration, Vienna, Special subjects.*
Operations Research, Econometrics, International Finance, Industrial Management
- 2002 **Mag. rer. soc. oec.**, *University of Texas at Austin, Vienna, Foreign Exchange Student.*
Money and Banking, Game Theory, International Finance
- 2004–2006 **Diploma in Economics**, *Institute for Advanced Studies, Vienna, Post-Graduate Program in Economics.*
- 2006–2008 **Dr. rer. soc. oec.**, *Vienna University of Economics and Business Administration, Vienna, Special subjects.*
Labor market, game theory, bounded rationality, learning dynamics

Master thesis

- title *Some applications of Game Theory in Social Sciences*
supervisors Wolfgang E. Katzenberger

Doctoral thesis

- title *A Game-theoretic Model of the Labor Market with integrated Search and Wage Dynamics*
supervisors Hanns Abele, Klaus Pötzelberger

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Unmarried, father of Magdalena (2012) and Isabella (2015)

description This thesis deals with the design of a completely new model of the labor market in a partial equilibrium framework. The foundation of the model is the theory of repeated games in connection with the modern microeconomic concept of bounded rationality. The full model can explain theoretically the co-existence of structural and frictional unemployment, the co-existence of open vacancies and job seekers over a long period of time, the high persistence of unemployment and the gradual reduction of unemployment after various shocks, wage differences between industries, and a non degenerate wage distribution in equilibrium. On an aggregate level my model questions the fundamental principle of random matching which is the heart of many macroeconomic labor market models.

Experience

Vocational

- 2006–2007 **Scientific assistant**, *Vienna University of Economics and Business Administration*, Vienna.
Substitute for o. Univ. Prof. DDr. Ulrich Berger at the Institute for Analytical Economics
- 2007 **Fixed Income Analyst**, *UniCredit CA IB*, Vienna.
Investment Banker
- 2008–2016 **Analyst**, *Oesterreichische Nationalbank*, Vienna.
Financial Stability and Macroprudential Supervision Division
- 2017 **Senior Analyst**, *Oesterreichische Nationalbank*, Vienna.
Foreign Research Division
- 2018-2019 **Senior Analyst**, *Oesterreichische Nationalbank*, Vienna.
Financial Stability and Macroprudential Supervision Division
- 2020-2022 **Senior Analyst**, *Oesterreichische Nationalbank*, Vienna.
Economic Analysis Division
- 2022- **Senior Analyst**, *Oesterreichische Nationalbank*, Vienna.
Research Section

Languages

- German native language
English full professional proficiency

Computer skills

- Operating systems Good knowledge of *Windows XP, Windows 7, Windows 10 and Linux*
- Statistical programs Advanced knowledge of *R project (see Sigmund & Ferstl, 2021), Matlab, STATA, Eviews*
- Text processing Advanced knowledge of *Microsoft Word, Powerpoint, Excel and Latex*

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Conferences

- **Surrey-Fordham Conference on Banking, Finance, Money and Institutions: The Post Crisis Era. (2013)** organized by the Centre for Money, Banking & Institutions (University of Surrey) and the Center for Research in Contemporary Finance (Fordham University) with Gunter et al. (2013).
- **Finance and Economics Conference (2013)** organized by the Lupcon Center for Business Research with Gunter et al. (2013).
- **RiskLab/BoF/ESRB Conference on Systemic Risk Analytics (2015)** with Siebenbrunner et al. (2017).
- **Tenth Financial Stability Christmas Seminar (2015) organized by the Central Bank of Slovakia** with Eidenberger et al. (2014b).
- **Risk in Financial Markets and Institutions: New challenges, New solutions (2016)** organized by the International Finance and Banking Society with Schmitz et al. (2017).
- **Portsmouth-Fordham Conference on Banking & Finance (2016)** organized by the Portsmouth Business School with Siebenbrunner et al. (2017).
- **European Finance and Banking Conference (2016)** organized by the University of Bologna with Schmitz et al. (2017).
- **Vietnam Symposium in Banking and Finance (2016)** organized by the Association of Vietnamese Scientists and Experts in France (AVSE), the International School of Vietnam National University (Hanoi), and the International Society for the Advancement of Financial Economics (ISAFE with Siebenbrunner et al. (2017) and Kerbl & Sigmund (2016).
- **Eleventh Financial Stability Christmas Seminar (2016) organized by the Central Bank of Slovakia** with Sigmund et al. (2017).
- **Fourth Research Workshop of the Task Force on Banking Analysis for Monetary Policy of the MPC (2017) organized by the ECB** with Kerbl & Sigmund (2016).
- **Conference on Computational Management Science (Pricing, Risk and Optimization in Management Science, 2017)** with Sigmund & Ferstl (2021).
- **Risklab/Bank of Finland/ESRB Conference on Systemic Risk Analytics, 2017)** with Kerbl & Sigmund (2016).
- **40th Anniversary 24th International Panel Data Conference (IPDC, 2017)** with Sigmund & Ferstl (2021).
- **33rd International Symposium on Money, Banking and Finance, annual meeting of the European Research Group (GdRE) on Money Banking and Finance (2017)** with Steininger & Sigmund (2020).
- **8th International Research Meeting in Business and Management (2017)** with Steininger & Sigmund (2020).
- **3rd European Central Banking Network (ECBN) Policy Research Conference in Ljubljana (2017)** with Doeme et al. (2017).

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- **2nd Conference on Network Models and Stress Testing for Financial Stability (2017)** organized by Banco de Mexico, the University of Zurich, the Bank of Canada and the Journal of Financial Stability with Siebenbrunner & Sigmund (2017).
- **Festival for New Economic Thinking (2017)**, Edinburgh Corn Exchange with Steininger & Sigmund (2020).
- **12th Financial Stability Christmas Seminar (2017)** organized by the Central Bank of Slovakia with Feldkircher & Sigmund (2017).
- **International Rome Conference on Money, Banking and Finance (16th Edition, 2017)** with Siebenbrunner & Sigmund (2017).
- **Paris Financial Management Conference (PFMC 2017)** with Doeme et al. (2017).
- **4th International Conference on Applied Theory, Macro and Empirical Finance (2018)** in Thessaloniki with Sigmund & Ferstl (2021).
- **Risklab/Bank of Finland/ESRB Conference on Systemic Risk Analytics, 2018)** with Sigmund & Siebenbrunner (2023).
- **F.E.B.S. Financial Engineering and Banking Society in Rom 2018** with Sigmund & Siebenbrunner (2023).
- **25th International Panel Data Conference (IPDC, 2018)** with Siebenbrunner & Sigmund (2019).
- **7th Workshop on Networks in Economics and Finance in Lucca (NETEF 2018)** organized by the University of Arkansas and the the School for Advanced Studies Lucca. with Sigmund & Siebenbrunner (2023).
- **Political Economy of Finance, University of Oxford (2018)** with Sigmund & Siebenbrunner (2023).
- **EBA Policy Workshop, Reaping the benefits of an integrated EU banking market, (2018)** with Sigmund (2020).
- **6th Research Workshop of the Monetary Policy Committee (ECB) Task Force on Banking Analysis for Monetary Policy (2019)** with Doeme & Sigmund (2018).
- **5th International Conference on Applied Theory, Macro and Empirical Finance (2019)** in Thessaloniki with Doeme & Sigmund (2018).
- **23rd Annual International Conference on Macroeconomic Analysis and International Finance (2019)** in Creta with Doeme & Sigmund (2018).
- **IBRN Meeting at the Federal Reserve Bank of New York** with Ehrlich et al. (2019).
- **4th BIS-CGFS workshop on Research on global financial stability: the use of BIS international banking and financial statistics** with Ehrlich et al. (2019).
- **7th Research Workshop of the Monetary Policy Committee (ECB) Task Force on Banking Analysis for Monetary Policy (2020)** with Sigmund & Valderrama (2020)

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- **6th International Conference on Applied Theory, Macro and Empirical Finance (2020) in Thessaloniki** with a new version of Siebenbrunner & Sigmund (2017)
- **10th International Conference of the Financial Engineering and Banking Society 2020** with a new version of Sigmund & Siebenbrunner (2023)
- **SNB Research Conference 2020 – Monetary Policy in a Low Interest Rate Environment** with Sigmund & Valderrama (2020)
- **37th Symposium on Money, Banking and Finance** with Sigmund & Zimmermann (2021)
- **10th International Conference of the Financial Engineering and Banking Society** with Sigmund & Zimmermann (2021)
- **26th International Conference on Panel Data (IPDC)** with Sigmund & Siebenbrunner (2020)
- **CEBRA 2021 Annual Meeting** with Sigmund & Valderrama (2020)

- **6th International Conference on Applied Theory, Macro and Empirical Finance (2022) in Thessaloniki** with Ernst & Sigmund (2022).
- **27th International Conference on Panel Data (IPDC)** with Raunig & Sigmund (2022).
- **Annual Meeting of the Austrian Economic Association (2022)** with Raunig & Sigmund (2022).
- **27th International Conference on Macroeconomic Analysis and International Finance (2023)** with Doeme & Sigmund (2022).

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Teaching

- 2009–2019 **Joint Vienna Institute**, *Lectures on, Macroeconomic Credit Risk Modelling, Bank Solvency and Funding Costs, Profitability of the Banking Sector, Evaluation of systemic financial sector risks and CESEE exposure of Austria, Macroprudential Supervision – the key lesson from the crisis, Comparing market power at home and abroad: Evidence from Austrian banks and their subsidiaries in CESEE* .
- 2017-2022 **Lauder Business School**, *Econometrics*, For the Master Program in Banking, Finance and Compliance.
- 2018 **Lauder Business School**, *Student Consultancy Project: How do Designated Regulatory Authorities set Counter Cyclical Buffer Rates outside and inside of Europe?*, For the Master Program in Banking, Finance and Compliance.
- 2019 **Lauder Business School**, *Student Consultancy Project: Measuring Productivity on the Firm Level?*, For the Master Program in Banking, Finance and Compliance.
- 2020 **Lauder Business School**, *Student Consultancy Project: Monetary Policy Rules*, For the Master Program in Banking, Finance and Compliance.
- 2020-2023 **WU**, *Vienna University of Economics and Business*, *Macroeconometrics*, For the Master Program in Economics (Applied Track).

References

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Referee for the following journals

- **Empirica, Empirical Economics, Journal of Financial Stability, International Journal of Central Banking, Applied Economics, International Journal of Forecasting, Journal of Banking and Finance, Political Behavior, Economic Modelling**

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Publications

- Albacete, N., Eidenberger, J., Krenn, G., Lindner, P., & Sigmund, M. (2014). Risk bearing capacity of households – linking microlevel data to the macroprudential toolkit. *OeNB Financial Stability Report*, 27, 95–110.
- Alessi, L., Antunes, A., Babecký, J., Baltussen, S., Behn, M., Bonfim, D., Bush, O., Detken, C., Frost, J., Guimaraes, R., Havranek, T., Joy, M., Kauko, K., Matějů, J., Monteiro, N., Neudorfer, B., Peltonen, T., Rodrigues, P., Rusnak, M., Schudel, W., Sigmund, M., Stremmel, H., Smidkova, K., van Tilburg, R., Vašíček, B., & Zigràiova, D. (2015). *Comparing different early warning systems: Results from a horse race competition among members of the Macro-prudential Research Network*. MPRA paper, University Library of Munich, Germany.
- Cetina, J., Schmitz, S. W., Sigmund, M., & Valdarama, L. (2015). Making supervisory stress tests more macroprudential: Considering liquidity and solvency interactions and systemic risk. *BCBS Working Papers*, 29.
- Doeme, S. & Sigmund, M. (2018). *The Impact of Unconventional Monetary Policy on Major European Banks' Interest Spreads*. Working paper.
- Doeme, S. & Sigmund, M. (2022). *How do macroprudential authorities set the countercyclical capital buffer?* Working paper.
- Doeme, S., Sigmund, M., & Ubl, E. (2017). *How to Assess the Effectiveness and Negative Side Effects of Macroprudential Policies: From Theory to Empirical Evidence*. Working paper.
- Ehrlich, P., Elsinger, H., Segalla, E., & Sigmund, M. (2019). *How does regulation affect banking complexity in Austria*. Working paper.
- Eidenberger, J., Liebeg, D., Schmitz, S. W., Seliger, R., Sigmund, M., Steiner, K., Strobl, P., & Ubl, E. (2014a). Macroprudential policy: A key lesson from the financial crisis. *OeNB Financial Stability Report*, 27, 83–94.
- Eidenberger, J., Neudorfer, B., Sigmund, M., & Stein, I. (2013). Quantifying Financial Stability in Austria - New Tools for Macroprudential Supervision. *OeNB Financial Stability Report*, 26, 62–81.
- Eidenberger, J., Neudorfer, B., Sigmund, M., & Stein, I. (2014b). What predicts financial (in)stability? a bayesian approach. *Deutsche Bundesbank Discussion Paper*, No. 36/2014.
- Ernst, N. & Sigmund, M. (2022). *Are Zombie Firms less productive?* submitted to OeNB Working Paper.
- Feldkircher, M., Fenz, G., Ferstl, R., Krenn, G., Neudorfer, B., Pühr, C., Reininger, T., Schmitz, S. W., Schneider, M., Siebenbrunner, C., M., S., & Spitzer, R. (2013). Arnie in action: The 2013 fsap stress tests for the austrian banking system. *OeNB Financial Stability Report*, 26, 100–118.
- Feldkircher, M. & Sigmund, M. (2017). Comparing market power at home and abroad: Evidence from austrian banks and their subsidiaries in cesee. *Focus on European Economic Integration*, Q3/2017, 59–77.

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- Gunter, U., Krenn, G., & Sigmund, M. (2013). Macroeconomic, market and bank-specific determinants of the net interest margin in Austria. *OeNB Financial Stability Report*, 25, 87–101.
- Hofmarcher, P., Kerbl, S., Gruen, B., Sigmund, M., & Hornik, K. (2014). Model uncertainty and aggregated default probabilities: new evidence from Austria. *Applied Economics*, 46(8), 871–879.
- Kerbl, S. & Sigmund, M. (2009). Cyclicalities of regulatory capital requirements: First evidence from Austria. *OeNB Financial Stability Report*, 18, 97–106.
- Kerbl, S. & Sigmund, M. (2011). What drives aggregate credit risk? *OeNB Financial Stability Report*, 22, 77–92.
- Kerbl, S. & Sigmund, M. (2016). From low to negative rates: an asymmetric dilemma. *OeNB Financial Stability Report*, 32, 120–135.
- Neudorfer, B., Sigmund, M., & Trachta, A. (2011). Detecting financial stability vulnerabilities in due time: Can simple indicators identify a complex issue? *OeNB Financial Stability Report*, 22, 64–76.
- Puhr, C., Schwaiger, M., & Sigmund, M. (2009). Direct cross-border lending by Austrian banks to Eastern Europe. *OeNB Financial Stability Report*, 17, 109–129.
- Puhr, C., Seliger, R., & Sigmund, M. (2012). Contagiousness and Vulnerability in the Austrian Interbank Market. *OeNB Financial Stability Report*, 24, 62–78.
- Raunig, B. & Sigmund, M. (2022). *The Single Supervisory Mechanism: Effects on Bank Performance and Capital Requirements*. OeNB Working Paper forthcoming.
- Schmitz, S., Sigmund, M., & Valderrama, L. (2020). Bank Solvency and Funding Cost: New Data and New Results. In L. Ong & A. Jobst (Eds.), *Stress Testing: Principles, Concepts, and Frameworks*, volume 1 chapter 8, (pp. 152–182). International Monetary Fund, 1 edition.
- Schmitz, S. W., Sigmund, M., & Valderrama, L. (2017). Bank solvency and funding cost: New data and new results. *IMF Working Paper*, No. 17/116.
- Schmitz, S. W., Sigmund, M., & Valderrama, L. (2019). The interaction between bank solvency and funding costs: A crucial effect in stress tests. *Economic Notes*, 48(2), e12130.
- Siebenbrunner, C. & Sigmund, M. (2017). *Determinants of interbank market rates: theories and empirical evidence*. Working paper. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3082784.
- Siebenbrunner, C. & Sigmund, M. (2019). Quantile Panel Estimation of Financial Contagion Effects. In M. Tsionas (Ed.), *Panel Data Econometrics: Empirical Applications*, volume 1 chapter 20, (pp. 639–664). Elsevier Academic Press, 1 edition.
- Siebenbrunner, C. & Sigmund, M. (2021). Learning regulator influence on internal risk weights. In *Proceedings of the Second ACM International Conference on AI in Finance* (pp. 1–8).
- Siebenbrunner, C., Sigmund, M., & Kerbl, S. (2017). Can bank-specific variables predict contagion effects? *Quantitative Finance*, 17(12), 1805–1832.

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- Sigmund, M. (2004). Game-theoretic applications in social sciences. Master's thesis, Vienna University of Economics and Business.
- Sigmund, M. (2008). *A Game-theoretic Model of the Labor Market with integrated Search and Wage Dynamics*. PhD thesis, Vienna University of Economics and Business, <http://epub.wu.ac.at/1858/1/document.pdf>.
- Sigmund, M. (2020). *The Capital Buffer Calibration for Other Systemically Important Institutions–Is the Country Heterogeneity in the EU caused by Regulatory Capture?* OeNB Working Paper 232. <https://www.oenb.at/dam/jcr:183293a1-4376-4f1a-b1aa-6d0f0344cc22/working-paper-232.pdf>.
- Sigmund, M. (2021). Assessing Macro-Prudential Policies: the Case of FX Lending. *Journal of Economics and Finance*, 45, 316–359.
- Sigmund, M. (2022). The Capital Buffer Calibration for Other Systemically Important Institutions–Is the Country Heterogeneity in the EU caused by Regulatory Capture? *Scottish Journal of Political Economy*, forthcoming.
- Sigmund, M. & Ferstl, R. (2021). Panel vector autoregression in r with the package panelvar. *The Quarterly Review of Economics and Finance*, 80, 693–720.
- Sigmund, M., Gunter, U., & Krenn, G. (2017). How do macroeconomic and bank-specific variables influence profitability in the austrian banking sector? evidence from a panel vector autoregression analysis. *Economic Notes*, 46(3), 555–586.
- Sigmund, M. & Siebenbrunner, C. (2020). *The moral hazard problem in banks' risk reporting*. mimeo.
- Sigmund, M. & Siebenbrunner, C. (2023). Do interbank markets price systemic risk? *Journal of Financial Stability*, forthcoming.
- Sigmund, M. & Stein, I. (2017). What predicts financial (in)stability? a bayesian approach. *CREDIT AND CAPITAL MARKETS*, 3, 299–336.
- Sigmund, M. & Valderrama, M. (2020). *No portfolio separation between loans and deposits - What does this imply for a negative interest rate environment?* Working paper.
- Sigmund, M. & Zimmermann, K. (2021). *Determinants of Contingent Convertible Bond Coupon Prices of Banks: An Empirical Analysis*. OeNB Working Paper 236.
- Steininger, L. & Sigmund, M. (2020). Reciprocity in bank regulatory reforms and income inequality: first evidence from a panel vector autoregression analysis. *Empirical Economics*, 59, 1537–1572.