

# Tom L. Dudda

PhD Student in Finance | Research Associate | TU Dresden

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Date of Birth May 17, 1994  
Nationality German  
Languages German (native), English (fluent)  
Programming R, Python, MATLAB

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## Research Interests

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Carbon Finance, Commodity Finance, Financial Econometrics, Mixed Data Sampling

## Research Output

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[abstracts are listed on the last page]

### Working Paper

1. *Common Drivers of Commodity Futures?* (with Tony Klein, Duc K. Nguyen, and Thomas Walther). doi: 10.2139/ssrn.4231994.
2. *Climate Risk and the Dynamic Correlation between Clean Energy and Technology Stock Markets* (with Elie Bouri, Lavinia Rognone and Thomas Walther), Submitted. doi: 10.2139/ssrn.4300269

### Work in Progress

1. *The Financialization of the European Futures Market for Carbon Emission Allowances* (with Tony Klein, Florentina Paraschiv, and Thomas Walther)

### Publications

1. Dudda, T.L., Klein, T., & Walther, T. (2021). Schätzung und Vorhersage “Realisierter Volatilität”. *WiSt - Wirtschaftswissenschaftliches Studium*, 50(4), 19–25. doi: 10.125358/0340-1650-2021-4-19. [VHB D]
2. Menkveld, A.J., Dreber, A., Holzmeister, F., Huber, J., Johannesson, M., Kirchler, M., Neusuess, S., Razen, M., Weitzel, U., ..., Dudda, T.L., ... (2023). Non-Standard Errors. *Journal of Finance*, forthcoming. doi: 10.125358/0340-1650-2021-4-19. [VHB A+]  
[participated as a member of a research team in the #fincap project]

## Education

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- 10/2020– **PhD Student in Finance** | TU Dresden (Germany)
- 2017–2020 **M.Sc. Business Management** | TU Dresden (Germany)  
Grade: 1.1 (with distinction, top 2%) · Thesis: *Applying VIX forecasting models to VIX futures trading*
- 2018 **Semester abroad** | Bond University (Australia)  
GPA: 4.0 (high distinction) · Placed on Vice-Chancellor’s List of Academic Excellence
- 2013–2017 **B.Sc. Business and Economics** | TU Dresden (Germany)  
Grade: 1.4 (top 10%) · Thesis: *Quantifying the market risk of banks with Value-at-Risk and Expected Shortfall within the Basel regulatory framework*
- Summer Schools**
- 2022 EABCN Training School (*virtual*): *What’s new in mixed frequency data, with applications to machine learning and big data*
- 2021 The International Institute of Forecasters (*virtual*): *Nowcasting & models for mixed frequency data* · VHB-ProDok (*Berlin*): *Machine Learning*
- 2020 University of Chicago (*virtual*): *SoFiE Financial Econometrics Summer School on the econometrics of mixed frequency (big) data*

## Presentations

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- 2022      5<sup>th</sup> Commodity Markets Winter Workshop (*St. Johan i.P.*) · Workshop on Carbon Finance FernUniversität Hagen (*virtual*) · 8<sup>th</sup> International Symposium on Environment and Energy Finance Issues (*virtual*) · Annual Conference, Commodity and Energy Markets Association (*Chicago*) · ZAFIN Finance and Sustainability Conference, Wrocław University of Economics & Business (*virtual*) · PhD Workshop in Finance, Zeppelin University (*virtual*) · HVB Doctoral Seminar (*Utrecht*) · 16th Conference on Energy Economics and Technology (ENERDAY, *Dresden*) · Brown Bag Seminar, TU Dresden (*Dresden*)
- 2021      Annual Conference, British Accounting and Finance Association (Doctoral Masterclass, *virtual*) · Finance Research Seminar, Utrecht School of Economics (*virtual*) · HVB Doctoral Seminar, Technical University of Chemnitz (*virtual*) · 6<sup>th</sup> Vietnam Symposium in Banking and Finance (*virtual*)
- 2019      6<sup>th</sup> Joint Seminar on Capital Markets and Risk Management (*Dresden*)
- 2018      3<sup>rd</sup> Joint Seminar on Capital Markets and Risk Management (*Wrocław*)

## Referee Activities

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Finance Research Letters · Energy Economics · The Energy Journal · Journal of Commodity Markets · Resources Policy · International Journal of Finance and Economics · International Review of Economics and Finance · Journal of Asian Business and Economic Studies

## Awards

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**Best PhD Paper in Finance** (*for Common Drivers of Commodity Futures, Annual Conference of the British Accounting and Finance Association 2021*) · **Victor-Klemperer Award** (*for outstanding achievements during the master's program Business Management, TU Dresden*) · **Best graduate in 2020 within the master's program Business Management** (*nexus e.V., Faculty of Business and Economics, TU Dresden*)

## Teaching

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### Technische Universität Dresden

- Financial Mathematics (*Master*, 40 students, tutorial since 2020)
- Professional Portfolio Management (*Master*, 40 students, tutorial since 2020)
- Research Seminar in Finance (*Master*, since 2020)
- Investment and Financing (*Bachelor*, 500 students, tutorial since 2021)
- Financial Management I (*Bachelor*, 100 students, tutorial 2017–2020)
- Financial Management II (*Bachelor*, 70 Students, tutorial 2017–2020)
- *Bachelor* Seminar in Finance (*Bachelor*, since 2020)
- Microeconomics (*Bachelor*, 50 students, tutorial 2015)

### University of Cooperative Education Saxony, Staatliche Studienakademie Dresden

- Derivatives (*Bachelor*, 25 students, lecture since 2021)
- Risk Management (*Bachelor*, 25 students, lecture since 2021)

## Working Experience

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- 06/2020–    **Research Associate** | Chair of Finance and Financial Services, TU Dresden (Germany)  
 Research · Teaching · University Administration: *Member of Hiring Committee (W3 Professor in Management Accounting and Control)*
- 03/2021–    **Lecturer** | Berufsakademie Sachsen (University of Cooperative Education), Staatliche Studienakademie Dresden, Bachelor's program "Finance – Banking" (Germany)
- Internships**
- 2019      Deutsche Bank AG | Risk Management Solutions (*3M*), Hamburg (Germany)
- 2017      KPMG AG | Governance & Assurance Services (*6M*), Dresden (Germany)
- 2016      Nachfolgekantor GmbH | Mergers & Acquisitions (*6M*), Dresden (Germany)
- 2015      Deutsche Bank AG | Private, Wealth & Commercial Clients (*2M*), Frankfurt a.M. (Germany)

2013 Commerzbank AG | Private Clients (*2M*), Braunschweig (Germany)

**Honorary Engagement**

2021– nexus e.V. | Co-Chairman (alumni association at the TU Dresden faculty of business and economics, 300+ members)

2016 IG Börse an der TU Dresden e.V. | CFO (university finance club, 100+ members)

2012–2013 TU Braunschweig | Voluntary Service (university sports center)

**References**

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## Abstracts

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### Common Drivers of Commodity Futures

with Tony Klein, Duc. K. Nguyen, Thomas Walther

We study potential drivers for a large cross section of commodity futures returns. Unlike previous studies, we examine the effect of variables with daily and monthly data availability using mixed-frequency Granger causality tests. We find real economic activity as a main driver on a monthly basis, whereas financial variables seem to affect returns at daily frequency. The linkages are time-varying for various stages of the financialization of commodity markets with an overall dissipating impact in the recent period of de-financialization. As our results strongly differ from traditional low-frequency Granger causality tests under the temporal aggregation of futures returns, we show the economic value of accessing information at a higher frequency in an out-of-sample trading study. Our findings emphasize the importance of using mixed-frequency techniques to uncover relationships between monthly-published macroeconomic variables and commodity prices.

### Climate Risk and the Dynamic Correlation between Clean Energy and Technology Stock Markets

with Elie Bouri, Lavinia Rognone, Thomas Walther

The transition from fossil fuels toward cleaner energy necessitates technological innovation, suggesting not only an association between clean energy and technology stocks but also a potential impact of climate risk on this association. In this paper, we examine the impact of climate risk on the nexus of clean energy and technology stocks using a time-varying correlation model. We find physical and transition climate risk to be positively associated with the long-term correlation between clean energy and technology stocks, whereas the effect of transition risk is more persistent. In contrast, the short-term correlation tends to decrease following shocks to physical climate risk, as clean energy stocks react stronger to physical risk shocks than technology stocks. Our analysis provides new insights into the heterogeneous role of climate risk that can be particularly relevant for investors and academics interested in the financial implications of climate change.

### The Financialization of the European Futures Market for Carbon Emission Allowances

with Tony Klein, Florentina Paraschiv, Thomas Walther

As the futures market for European carbon emission allowances (EUA) increasingly attracts financial investors seeking new risk-return profiles and diversification, we investigate whether this market is already subject to financialization. To measure the degree of financialization, we first identify fundamental variables that should drive the prices of EUA futures. We regress returns and volatility of EUA futures on their fundamental drivers and variables serving as indicators for the influence of financial investors. Using  $R^2$  decomposition, we examine to what extent financial variables explain returns and volatility of EUA futures in relation to their fundamental drivers and how this relationship has evolved from trading phase II through the beginning of phase IV of the EU ETS. Our results indicate an emerging financialization as the importance of financial variables for explaining the variation in EUA futures returns increases over recent years.

### Non-Standard Errors\*

with Albert J. Menkveld et al. (2023). *Journal of Finance*, forthcoming.

In statistics, samples are drawn from a population in a data-generating process (DGP). Standard errors measure the uncertainty in estimates of population parameters. In science, evidence is generated to test hypotheses in an evidence-generating process (EGP). We claim that EGP variation across researchers adds uncertainty: Non-standard errors (NSEs). We study NSEs by letting 164 teams test the same hypotheses on the same data. NSEs turn out to be sizable, but smaller for better reproducible or higher rated research. Adding peer-review stages reduces NSEs. We further find that this type of uncertainty is underestimated by participants.

\*Participated as a member of a research team within the Finance Crowd Analysis Project (<https://fincap.academy/>)

### Schätzung und Vorhersage “Realisierter Volatilität”

with Tony Klein and Thomas Walther (2021). *WiSt – Wirtschaftswissenschaftliches Studium*, 50(4), 19–25.

Volatility as a universal risk measure is of pivotal importance to financial markets. It plays a vital role in risk and portfolio management as well as for derivative pricing. Using intraday data can improve the accuracy of volatility estimates. This article introduces the concept and modeling of realized volatility based on intraday returns. We demonstrate parameter estimations and forecasting of realized volatility in the HAR-RV model for DAX30 returns.