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When you walk through a storm
Hold your head up high
And don't be afraid of the dark
At the end of a storm
There's a golden sky
And the sweet silver song of a lark
Walk on through the wind
Walk on through the rain
Though your dreams be tossed and blown
Walk on, walk on
With hope in your heart
And you'll never walk alone

You'll never walk alone

'You'll Never Walk Alone' by Gerry & the Pacemakers
Songwriter: Oscar Hammerstein II and Richard Rodgers

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Contents

Submitted research papers in chronological order

1. Hippert, B., Uhde, A. and Wengerek, S. T. (2019). Portfolio benefits of adding corporate credit default swap indices: Evidence from North America and Europe. *Review of Derivatives Research*, 22(2):203-259.

2. Wengerek, S. T., Hippert, B. and Uhde, A. (2019). Risk allocation through securitization – Evidence from non-performing loans. *Working Paper*, Paderborn University.

3. Wengerek, S. T. (2020). Share price reactions to tariff imposition announcements in the Trump era – An event study of the trade conflict. *Working Paper*, Paderborn University.

Part I Synopsis

1 Motivation

As timeliness and relevance are two important factors in academic research, this cumulative dissertation is influenced by current developments in the financial sector and ongoing academic and political debates. Accordingly, the three submitted research papers focus on distinctive research topics, which are motivated as follows.

First, in times of fragile financial markets, rising correlations among different asset classes and a policy of low interest rates, asset managers and investors face the challenge to generate sufficient risk-return structures of financial portfolios despite the threat of declining risk-diversification opportunities (e.g., Solnik et al., 1996; Hunter and Simon, 2005; Wu et al., 2005; Cappiello et al., 2006; Mensi et al., 2013; Silvennoinen and Thorp, 2013). Under such difficult conditions, capital market investors typically restructure their portfolios towards liquid 'safe-haven' assets or less correlated alternative investments (e.g., commodities) in order to stabilize portfolio outcomes. However, as an increased trading activity in commodity markets ('financialization of commodities') has led to stronger volatility risk-spillovers, and due to the fact that even sovereign bond markets have been affected by liquidity constraints and greater return-correlation dependencies during the Global Financial Crisis and the European Sovereign Debt Crisis (Silvennoinen and Thorp, 2013; Dufour et al., 2017), the scope for portfolio risk-diversification has become tight. In recent years, however, especially credit default swap (CDS) indices have attracted the attention of institutional investors and asset managers, since they are primarly traded on a conservative basis and are much less sensitive to potential defaults as compared to a single-name CDS (Liu et al., 2017). Against this background, Hippert et al. (2019) introduce CDS indices as a new asset class and empirically analyze the benefits when adding corporate CDS indices to a traditional financial portfolio consisting of stock and sovereign bond indices.

Second, the intense debate on how to reduce the large amounts of non-performing loans (NPLs) on European banks' balance sheets is one of the most discussed issues in recent years. This is due to the fact that large amounts of NPL exposures result in higher funding costs, worsen capital and profitability ratios, and stronger capital requirements on the microprudential level. Furthermore, NPLs have also deteriorated the resilience and the sustainability of the European banking market from a macroprudential point of view. Accordingly, tackling the issue of too

large amounts of NPLs on European banks' balance sheets is one of the top three priorities for the European Central Bank's (ECB's) supervisory work, that aims at ensuring the safety and soundness of the European banking system (European Central Bank, 2017). In addition, as a response to the degeneration and drying up of the securitization market due to the Global Financial Crisis and the beginning of the European Sovereign Debt Crisis, banking regulators have released extensive regulatory and legal reforms which support the revitalization of the European securitization market (European Union, 2017a,b). Among these reforms, especially the introduction of the European regulation framework for simple, transparent and standardized (STS) securitizations in 2019 could be a step into the right direction. Moreover, since STS securitizations provide a framework for the development of a primary and secondary market for NPLs, the ECB proposed *loan securitization* as an effective instrument to transfer NPLs out of the banks' balance sheets (European Central Bank, 2017). Against this background, Wengerek et al. (2019) investigate if securitization was an effective instrument to allocate NPLs to capital market investors until the European securitization market dried up in 2010.

Third, in 2018 and 2019 the Trump administration has renegotiated several important trade agreements and imposed multiple rounds of import tariffs against foreign trading partners. As a backlash to the U.S. trade protectionism, several affected countries responded with retaliatory trade restrictions and introduced tariffs on American products, too. Meanwhile, the ongoing trade dispute between the U.S. and China has become an important topic in academic and political debates. This is due to the fact that the trade dispute may not only directly affect U.S. companies and the U.S. macroeconomic environment, but that also stock market investors' perceptions may be influenced. In this context, U.S. stock market investors may not only evaluate the effects of protective tariffs by the U.S. government, but also the impact of retaliatory tariffs as set by affected countries. Taking this into account, Wengerek (2020) empirically investigates if and to what extent stock market investors shift their perceptions on U.S. companies due to a series of recent protective and retaliatory tariff announcements by examining abnormal share price reactions.

The remainder of this cumulative dissertation is organized as follows. Section 2 of Part I summarizes the three submitted research papers of this cumulative dissertation. In addition, it provides information about the scientific dissemination and the contributions of respective authors. The submitted research papers are presented in Parts II to IV in chronological order.

2 Summary of the submitted research papers

This section provides an overview of the three submitted research papers which are included in this cumulative dissertation. In the following, each subsection gives a brief summary of the respective research paper with detailed information about identified research gaps, contributions to related strands of the theoretical and empirical literature, academic and practical implications as well as potential hints for future research. Additionally, while respective empirical methodologies, data sources and research questions are reported in Table 1, Tables 2 to 4 present details on the workflow, the contributions made by the individual authors and information on the scientific dissemination for each submitted research paper, respectively.

2.1 Hippert et al. (2019)

In Part II of this dissertation Hippert et al. (2019) empirically investigate the out-of-sample portfolio benefits when adding North American and European investment-grade corporate CDS indices to a traditional financial portfolio consisting of stock and sovereign bond indices.

Analyzing CDS indices in a portfolio context, Hippert et al. (2019) contribute to several strands of the related theoretical and empirical literature. *First*, the paper at hand extends existing studies, which investigate portfolio effects of various asset classes next to stock and sovereign bond indices (Black and Litterman, 1992; Abanomey and Mathur, 1999; Anson, 1999; Cheung and Miu, 2010; Daskalaki and Skiadopoulos, 2011; Füss et al., 2016; Bessler et al., 2017; Consiglio et al., 2017; Liu et al., 2017), by discussing the possible economic gains of trading multi-name CDS indices. *Second*, as previous related literature solely focuses on single-name CDS (Berndt and Obreja, 2010) and liquidity patterns of CDS indices (Junge and Trolle, 2015), Hippert et al. (2019) gain novel insights regarding the statistical properties of main and sector-specific CDS index returns, especially in a portfolio context. *Third*, the authors support existing literature by providing further results on the return and volatility dynamics as well as the information processing between stock, sovereign bond and corporate CDS markets (Acharya and Johnson, 2007; Fung et al., 2008; Schreiber et al., 2012; Belke and Gokus, 2014).

Following DeMiguel et al. (2009) and Bessler et al. (2017), Hippert et al. (2019) employ a mean-variance out-of-sample estimation approach in order to empirically investigate the

Table 1: Overview of submitted research papers

Research paper	Methodology	Data sources	Research question
Hippert et al. (2019)	Out-of-sample portfolio optimization	Markit, Refinitiv's Datastream and EIKON	Does the inclusion of CDS indices add value to multi-asset traditional portfolios consisting of stock and sovereign bond indices?
Wengerek et al. (2019)	Linear (fixed effects) and dynamic panel regressions	BankScope, Barth et al. (2001, 2004, 2008, 2013), Demirgüç-Kunt and Detragiache (2002), Demirgüç-Kunt et al. (2015), ECB Statistical Data Warehouse, FitchRatings, Moody's, national central banks, Refinitiv's Datastream and EIKON, Standard & Poor's, World Bank's WDI	Can European banks reduce their amounts of NPLs by means of true sale securitization transactions?
Wengerek (2020)	Event study	Bown and Kolb (2019), Compustat - Capital IQ, CRSP, European Commission, Hoberg-Moon Offshoring Repository database, Ministry of Commerce People's Republic of China, Ministry of Industry and Trade of the Russian Federation, Refintiv's Eikon, WTO, USBC - International Trade Data, USTR	How do stock market investors perceive announcements of protective tariffs by the U.S. and retaliatory tariffs against the U.S.?

portfolio benefits for CDS index buyers. With regard to their baseline model, the authors implement realistic investment constraints, i.e. budget restrictions and short sale constraints, and allow for a differentiation between conservative and aggressive types of investors by setting an upper volatility bound. Next to excess returns and standard deviations, also the downside risk and performance characteristics of the calculated portfolios are measured by the Value-at-Risk, Sharpe Ratio, Sortino Ratio, Omega Ratio and the portfolio turnover. Furthermore, a variety of model robustness checks is performed in order to verify the baseline results. In this context, the authors introduce transaction costs, relax short sale constraints, vary the upper volatility bound and the risk aversion coefficients and implement a mean-conditional Value-at-Risk approach (Rockafellar and Uryasev, 2000) as well as the Black-Litterman asset allocation model (Black and Litterman, 1992) in order to minimize the portfolio's tail risk and to address the shortcomings of the mean-variance approach.

Hippert et al. (2019) find that corporate CDS indices provoke a sufficient return above the risk-free rate along with a high (downside) risk-reduction potential in a portfolio context during the time period from 2006 to 2014. The significant (downside) risk diversification is persistent irrespective of investigated CDS markets, investor-types and sub-periods, including the Global Financial Crisis and European Sovereign Debt Crisis. The observed portfolio effects are due to the fact that institutional investors substitute sovereign bond indices rather than stock indices by corporate CDS indices due to better risk-return characteristics. This baseline finding remains robust even when performing necessary robustness checks. In addition, a large variety of sensitivity analyses provides further important results. In sum, Hippert et al. (2019) demonstrate that multi-name corporate CDS indices are a suitable instrument for institutional investors with a strategic focus on a long-term conservative portfolio management.

Since capital market investors became more aware of sovereign CDS (indices) during the European Sovereign Debt Crisis, and since Hippert et al. (2019) exclusively restrict their analysis to corporate CDS indices, future academic research may address the potential investment characteristics (e.g., risk-return-performance properties, correlation structures) of sovereign CDS in a portfolio context. Although sovereign CDS are different from corporate CDS contracts in terms of credit events, 'doc clauses', traded term-structures, underlying risk factors and investors' trading motives (Augustin et al., 2014), related empirical literature (e.g., Acharya et al., 2014; Bedendo and Colla, 2015) reveals co-movements in the CDS spreads of sovereigns and their

companies due to spillover effects, especially for financial institutions (sovereign-bank nexus). Therefore, future research may also examine the interrelation between sovereign and corporate credit risk by means of realized CDS index returns and the resulting implications for traditional portfolios.

Table 2: Hippert et al. (2019): Working process and scientific dissemination

Panel A: Workflow and contributions made by author
• Co-authorship with B. Hippert and A. Uhde (B. Hippert (45%), S. T. Wengerek (45%), A. Uhde (10%))
• Idea and first concretization by B. Hippert and S. T. Wengerek
• Elaboration of the theoretical framework and literature review by B. Hippert and S. T. Wengerek
• Compiling of data by B. Hippert and S. T. Wengerek
• Contact with data providers and practitioners by S. T. Wengerek
• Conceptual development and implementation of the empirical methodology by B. Hippert and S. T. Wengerek
• Evaluation of results by B. Hippert and S. T. Wengerek
• First draft by B. Hippert and S. T. Wengerek
• Feedback, comments and corrections by A. Uhde and conference participants
• Revision due to comments by B. Hippert and S. T. Wengerek
• Additional statistical implementation for the referee reports by B. Hippert and S. T. Wengerek
• Responses to the reviewer by B. Hippert, A. Uhde and S. T. Wengerek
• Research assistance by H. Becker, F. Beckmann, S. Herwald, M. Kerkemeier, M. Lengacher and C. Uhde
Panel B: Scientific dissemination
• The work on this paper started in October 2014
• Presentation of first ideas in the TAF Brown Bag Seminar in Paderborn (November 2014)
• Presentation at the Hypovereinsbank Ph.D. Workshop in Kiel (July 2015)
• Presentation at the Fakultätsforschungsworkshop of Paderborn University in Bad Arolsen (September 2015; co-author)

Table 2: Hippert et al. (2019): Working process and scientific dissemination (continued)

Panel B: Scientific dissemination (continued)
• First draft in July 2016
• Presentation at the International Rome Conference of Money, Banking and Finance (December 2016)
• Presentation at the 2016 Paris Financial Management Conference (December 2016; co-author)
• Presentation at the Annual Meeting of the Midwest Finance Association in Chicago (March 2017)
• Revision after comments from A. Uhde and conference participants (September 2016 - July 2017)
• Submission to the Journal of Banking and Finance (VHB Jourqual: A) in June 2017
• Receipt of the referee report (reject) from the Journal of Banking and Finance in July 2017
• Submission to the Review of Derivatives Research (VHB Jourqual: A) in July 2017
• Receipt of the first referee report (major revisions) in October 2017
• Resubmission in December 2017
• Receipt of the second referee report (minor revisions) in April 2018
• Resubmission in May 2018
• Accepted for publication in the Review of Derivatives Research in September 2018
• Print version available since July 2019
• Awarded with the Dean's Young Scholar Research Award of the Faculty of Business Administration and Economics in October 2019

2.2 Wengerek et al. (2019)

In Part III of this dissertation Wengerek et al. (2019) analyze the relationship between true sale loan securitization and the issuing banks' non-performing loans to total assets ratios (NPLRs) by employing a sample of 648 securitization transactions issued by 57 stock-listed banks across the EU-12 plus Switzerland over the period from 1997 to 2010.

Wengerek et al. (2019) contribute to the existing theoretical and empirical literature in several ways. *To begin with*, since academic research has paid no attention to the impact of credit (risk) securitizations on the issuing banks' NPL exposures directly, the research

paper reduces this gap. Hence, the paper is the first that empirically investigates if true sale securitizations were an effective instrument to allocate NPLs to capital market investors until the European securitization market dried up in 2010. *Second*, Wengerek et al. (2019) gain novel insights regarding the loan risk allocation process through true sale securitizations. Moreover, the analysis provides important policy implications for the vital discussion on reducing NPL exposures and regulating securitization markets. *Finally*, the authors extend the strand of related studies (e.g., Salas and Saurina, 2002; Louzis et al., 2012; Klein, 2013; Ghosh, 2015), which examines bank-specific and macroeconomic determinants of NPLs, by analyzing the impact of the banking regulatory environment on a bank's NPL exposure.

In order to empirically investigate the relationship between true sale loan securitization and the issuing banks' NPLRs, Wengerek et al. (2019) employ a time- and bank-fixed effects linear panel model with clustered robust standard errors at the bank level for their baseline analysis. As baseline results may be biased due to a likely persistence in the time series of NPL data, or due to a probable endogeneity between NPLs, loan securitizations and bank-specific control variables, the authors additionally implement a one-step system Generalized Methods of Moments (system-GMM) estimator as provided by Arellano and Bond (1991) and generalized by Arellano and Bover (1995) as well as Blundell and Bond (1998).

The analysis initially reveals an NPLR-reducing effect during the boom phase (2002-2007) of securitization transactions. It is suggested that banks may (partly) securitize NPLs as the most risky junior tranche and do not (fully) retain these loans as a quality signal towards less informed investors in imperfect capital markets. However, as a reverse effect is observed during the crises period from 2008 to 2010, this indicates that issuing banks demonstrated 'skin in the game'. Considering the results from the one-step system-GMM estimator regression, the authors rule out that results from their baseline linear fixed effects model are biased by a time persistence in the NPL data or due to endogeneity concerns. Moreover, results from a variety of sensitivity analyses generate further important implications. Overall, findings provided by Wengerek et al. (2019) contribute to recent proposals from European authorities and institutions. In addition, they support the view that true sale securitization may be a beneficial instrument to reduce NPL exposures and distribute loan risk more widely within the European financial system. However, the analysis also reveals several limitations of the loan risk allocation process through

securitization, which must be taken into account by national authorities, European institutions and regulators.

Since the number of securitizations with NPLs as underlying assets continuously increased during the last years, which is especially due to the efforts of the Italian government, future research may analyze the impact of these securitization transactions on the NPL exposures and the performance of Italian commercial banks. Moreover, since the STS securitization framework has only recently been introduced in 2019, the still pending evaluation of short- and long-term implications for the loan risk allocation process and the sustainability of the European banking system provides a broad universe for future research.

Table 3: Wengerek et al. (2019): Working process and scientific dissemination

Panel A: Workflow and contributions made by author
• Co-authorship with B. Hippert and A. Uhde (S. T Wengerek (90%), B. Hippert (5%), A. Uhde (5%))
• Idea and first concretization by S. T. Wengerek
• Elaboration of the theoretical framework and literature review by S. T. Wengerek
• Compiling of data by S. T. Wengerek
• Conceptual development and implementation of the empirical methodology by B. Hippert and S. T. Wengerek
• Evaluation of results by S. T. Wengerek
• First draft by S. T. Wengerek
• Feedback, comments and corrections by B. Hippert, A. Uhde and conference participants
• Revision due to comments by S. T. Wengerek
• Research assistance by S. Herwald, M. Kerkemeier and M. Lengacher
Panel B: Scientific dissemination
• The work on this paper started in October 2016
• First draft in May 2018
• Presentation at the Barcelona Graduate School of Economics Summer School (June 2018)
• Presentation at the Hypovereinsbank Ph.D. Workshop in Siegen (July 2018)
• Revision after comments from A. Uhde and conference participants in August and September 2019

Table 3: Wengerek et al. (2019): Working process and scientific dissemination (continued)

Panel B: Scientific dissemination (continued)
• Submission to the Journal of Financial Intermediation (VHB Jourqual: A) in October 2018
• Presentation at the 31st Australasian Finance and Banking Conference in Sydney (December 2018)
• Receipt of the referee report (reject) from the Journal of Financial Intermediation in January 2019
• Presentation at the Annual Meeting of the Southwestern Finance Association in Houston (March 2019)
• Presentation at the Annual Meeting of the Eastern Finance Association in Miami (April 2019)
• Revision of the paper after comments from the referee report and conference participants from April to August 2019
• Submission to the Journal of Money, Credit and Banking (VHB Jourqual: A) in September 2019
• Receipt of the referee report (reject) from the Journal of Money, Credit and Banking in September 2019
• Submission to the European Financial Management (VHB Jourqual: B) in September 2019
• Receipt of the referee report (reject) from the European Financial Management in December 2019

2.3 Wengerek (2020)

In Part IV of this dissertation Wengerek (2020) employs a unique sample of 2,849 tariff imposition announcements by and against the United States (U.S.) over the period from 2018 to 2019. The study empirically analyzes stock market investors' perceptions towards a series of recent trade restriction announcements by examining abnormal share price reactions from stocks issued by 859 U.S. companies.

Since empirical studies that investigate the relationship between tariff announcements and abnormal stock returns are scarce (e.g., Egger and Zhu, 2019; Huang et al., 2019), Wengerek (2020) contributes to the existing literature in several ways. *First*, the author employs the non-parametric generalized rank t-statistic as proposed by Kolari and Pynnonen (2011) as

well as a GARCH(1,1) model in order to control for abnormal stock return serial correlation, event-induced volatility, and cross-sectional correlation induced by event day clustering and autoregressive conditional heteroskedasticity. *Second*, as related studies do not consider confounding events, which may heavily bias the results, Wengerek (2020) addresses this issue by controlling for fundamental (e.g, announcements of mergers and acquisitions) and tariff-related (e.g., tariff-increase announcements) confounding events. *Finally*, as related empirical studies solely focus on specific tariff announcements from the U.S. and China, Wengerek (2020) extends the scope of analysis by considering *all* announced U.S. tariffs and retaliatory actions as proclaimed by seven foreign countries from January 2018 until August 2019.

Following Brown and Warner (1985), a standard event study methodology is employed in order to empirically investigate abnormal stock returns due to tariff announcements. Since abnormal stock returns are defined as the difference between realized excess stock returns and model-expected stock returns, The Fama and French (1993) three-factor asset pricing model is implemented to calculate model-expected stock returns. Finally, in order to evaluate the statistical significance of (cumulative) average abnormal stock returns the non-parametric generalized rank t-test is utilized since this test procedure is suggested to outperform parametric and other non-parametric approaches (Kolari and Pynnonen, 2011).

The study reveals significantly negative tariff-induced (cumulative) average abnormal stock returns during a symmetric three-day event window. This baseline result is observed independent from whether the Trump administration threatens safeguard tariffs to protect domestic companies, or foreign countries proclaim retaliatory trade restrictions. In addition, the analysis reveals that U.S. stock market investors' negative perceptions are mostly driven by tariff announcements involving China. Based on these findings, the author suggests that investors generally perceive tariff imposition announcements by and against the U.S. as a harmful intervention for U.S. companies since protective tariffs may trigger retaliatory tariffs, which in turn reduce U.S. firms' values and future cash flows. In addition, results from sensitivity analyses indicate that the perception of U.S. safeguard tariff and Chinese retaliation announcements by U.S. stock market investors depends on a variety of sector, tariff, trade and firm characteristics.

In January 2020, U.S. President Donald Trump and the Chinese Vice Premier Liu He signed the '*U.S.-China Phase 1 trade deal*'. In this context, future research may analyze if and how removals of tariffs (e.g., exclusions from announced lists, suspensions) are perceived by U.S.

stock market investors. Moreover, despite the reduction of several imposed tariff rates and the suspension of some threatened tariffs, the majority of imposed tariffs are still in place and the threat of further announcements remains, especially for non-Chinese countries (e.g., France's Digital Services Tax, tariffs against European car manufacturers). Therefore, a further promising research question may be whether the reorientation of U.S. protectionist measures away from China may provoke a change in investors' perceptions of tariff announcements by and against non-Chinese countries. Finally, as the history of the trade war is not too long, the analysis of long-term implications provides a broad universe for future research.

Table 4: Wengerek (2020): Working process and scientific dissemination

Panel A: Workflow and contributions made by author
• Single authored paper
• Research assistance by M. Daniel, S. Herwald, N. Klocke and M. Lengacher
Panel B: Scientific dissemination
• The work on this paper started in October 2018
• First draft in December 2019
• Revision due to comments from B. Hippert, A. Uhde and S. Warkulat in January 2020
• The paper has not yet been presented or submitted

References

Abanomey, W. S. and Mathur, I. (1999). The hedging benefits of commodity futures in international portfolio diversification. *The Journal of Alternative Investments*, 2(3):51–62.

Acharya, V., Drechsler, I., and Schnabl, P. (2014). A pyrrhic victory? Bank bailouts and sovereign credit risk. *The Journal of Finance*, 69(6):2689–2739.

Acharya, V. V. and Johnson, T. C. (2007). Insider trading in credit derivatives. *Journal of Financial Economics*, 84(1):110–141.

Anson, M. J. (1999). Maximizing utility with commodity futures diversification. *The Journal of Portfolio Management*, 25(4):86–94.

Arellano, M. and Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies*, 58(2):277–297.

Arellano, M. and Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68(1):29–51.

Augustin, P., Subrahmanyam, M. G., Tang, D. Y., Wang, S. Q., et al. (2014). Credit default swaps: A survey. *Foundations and Trends® in Finance*, 9(1–2):1–196.

Barth, J. R., Caprio, G., and Levine, R. (2001). The regulation and supervision of banks around the world: A new database. *World Bank Publications Volume 2588*.

Barth, J. R., Caprio, G., and Levine, R. (2008). Bank regulations are changing: For better or worse? *Comparative Economic Studies*, 50(4):537–563.

Barth, J. R., Caprio Jr, G., and Levine, R. (2004). Bank regulation and supervision: What works best? *Journal of Financial Intermediation*, 13(2):205–248.

Barth, J. R., Caprio Jr, G., and Levine, R. (2013). Bank regulation and supervision in 180 countries from 1999 to 2011. *Journal of Financial Economic Policy*, 5(2):111–219.

Bedendo, M. and Colla, P. (2015). Sovereign and corporate credit risk: Evidence from the Eurozone. *Journal of Corporate Finance*, 33:34–52.

Belke, A. H. and Gokus, C. (2014). Volatility patterns of CDS, bond and stock markets before and during the financial crisis: Evidence from major financial institutions. *International Journal of Economics and Finance*, 6(7):53–70.

Berndt, A. and Obreja, I. (2010). Decomposing European CDS returns. *Review of Finance*, 14(2):189–233.

Bessler, W., Opfer, H., and Wolff, D. (2017). Multi-asset portfolio optimization and out-of-sample performance: An evaluation of Black-Litterman, mean-variance, and naïve diversification approaches. *The European Journal of Finance*, 23(1):1–30.

Black, F. and Litterman, R. (1992). Global portfolio optimization. *Financial Analysts Journal*, 48(5):28–43.

Blundell, R. and Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1):115–143.

Bown, C. P. and Kolb, M. (2019). Trump's Trade War Timeline: An Up-to-Date Guide. *Peterson Institute for International Economics Publications*.

Brown, S. J. and Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, 14(1):3–31.

Cappiello, L., Engle, R. F., and Sheppard, K. (2006). Asymmetric dynamics in the correlations of global equity and bond returns. *Journal of Financial Econometrics*, 4(4):537–572.

Cheung, C. S. and Miu, P. (2010). Diversification benefits of commodity futures. *Journal of International Financial Markets, Institutions and Money*, 20(5):451–474.

Consiglio, A., Lotfi, S., and Zenios, S. A. (2017). Portfolio diversification in the sovereign credit swap markets. *Annals of Operations Research*. forthcoming.

Daskalaki, C. and Skiadopoulos, G. (2011). Should investors include commodities in their portfolios after all? New evidence. *Journal of Banking & Finance*, 35(10):2606–2626.

DeMiguel, V., Garlappi, L., and Uppal, R. (2009). Optimal versus naive diversification: How inefficient is the 1/n portfolio strategy? *Review of Financial Studies*, 22(5):1915–1953.

Demirgüç-Kunt, A. and Detragiache, E. (2002). Does deposit insurance increase banking system stability? An empirical investigation. *Journal of Monetary Economics*, 49(7):1373–1406.

Demirgüç-Kunt, A., Kane, E., and Laeven, L. (2015). Deposit insurance around the world: A comprehensive analysis and database. *Journal of Financial Stability*, 20:155–183.

Dufour, A., Stancu, A., and Varotto, S. (2017). The equity-like behaviour of sovereign bonds. *Journal of International Financial Markets, Institutions and Money*, 48:25–46.

Egger, P. H. and Zhu, J. (2019). The US-Chinese Trade War: An Event Study of Stock-Market Responses. *CEPR Discussion Paper No. DP14164*.

European Central Bank (2017). Guidance to banks on non-performing loans.

European Union (2017a). Regulation (EU) 2017/2401. *Official Journal of the European Union*, 60(L347):1–34.

European Union (2017b). Regulation (EU) 2017/2402. *Official Journal of the European Union*, 60(L347):35–80.

Fama, E. F. and French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33(1):3–56.

Fung, H.-G., Sierra, G. E., Yau, J., and Zhang, G. (2008). Are the us stock market and credit default swap market related?: Evidence from the cdx indices. *The Journal of Alternative Investments*, 11(1):43–61.

Füss, R., Kaiser, D. G., and Schindler, F. (2016). Dynamic linkages between hedge funds and traditional financial assets: Evidence from emerging markets. In *Risk Management in Emerging Markets: Issues, Framework, and Modeling*, pages 543–583. Emerald Group Publishing Limited.

Ghosh, A. (2015). Banking-industry specific and regional economic determinants of non-performing loans: Evidence from US states. *Journal of Financial Stability*, 20:93–104.

Hippert, B., Uhde, A., and Wengerek, S. T. (2019). Portfolio benefits of adding corporate credit default swap indices: Evidence from North America and Europe. *Review of Derivatives Research*, 22(2):203–259.

Huang, Y., Lin, C., Liu, S., and Tang, H. (2019). Trade Networks and Firm Value: Evidence from the US-China Trade War. *CEPR Discussion Paper No. DP14173*.

Hunter, D. M. and Simon, D. P. (2005). A conditional assessment of the relationships between the major world bond markets. *European Financial Management*, 11(4):463–482.

Junge, B. and Trolle, A. B. (2015). Liquidity risk in credit default swap markets. Swiss Finance Institute Research Paper 13-65, EPFL and Swiss Finance Institute.

Klein, N. (2013). Non-performing loans in CESEE: Determinants and impact on macroeconomic performance. *IMF Working Paper WP13:72*.

Kolari, J. W. and Pynnonen, S. (2011). Nonparametric rank tests for event studies. *Journal of Empirical Finance*, 18(5):953–971.

Liu, J., Khiewngamdee, C., and Sriboonchitta, S. (2017). The role of asian credit default swap index in portfolio risk management. In *Robustness in Econometrics*, pages 435–447. Springer.

Louzis, D. P., Vouldis, A. T., and Metaxas, V. L. (2012). Macroeconomic and bank-specific determinants of non-performing loans in greece: A comparative study of mortgage, business and consumer loan portfolios. *Journal of Banking & Finance*, 36(4):1012–1027.

Mensi, W., Beljid, M., Boubaker, A., and Managi, S. (2013). Correlations and volatility spillovers across commodity and stock markets: Linking energies, food, and gold. *Economic Modelling*, 32:15–22.

Rockafellar, R. T. and Uryasev, S. (2000). Optimization of conditional value-at-risk. *Journal of Risk*, 2:21–42.

Salas, V. and Saurina, J. (2002). Credit risk in two institutional regimes: Spanish commercial and savings banks. *Journal of Financial Services Research*, 22(3):203–224.

Schreiber, I., Müller, G., Klüppelberg, C., and Wagner, N. (2012). Equities, credits and volatilities: A multivariate analysis of the European market during the subprime crisis. *International Review of Financial Analysis*, 24:57–65.

Silvennoinen, A. and Thorp, S. (2013). Financialization, crisis and commodity correlation dynamics. *Journal of International Financial Markets, Institutions and Money*, 24:42–65.

Solnik, B., Boucrelle, C., and Le Fur, Y. (1996). International market correlation and volatility. *Financial Analysts Journal*, 52(5):17–34.

Wengerek, S. T. (2020). Share price reactions of u.s. companies to tariff imposition announcements in the trump era – an event study of the trade conflict. *Working Paper, Paderborn University*.

Wengerek, S. T., Hippert, B., and Uhde, A. (2019). Risk allocation through securitization – Evidence from non-performing loans. *Working Paper, Paderborn University*.

Wu, C., Li, J., and Zhang, W. (2005). Intradaily periodicity and volatility spillovers between international stock index futures markets. *Journal of Futures Markets*, 25(6):553–585.