Empirical Essays in Finance

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Jan Schnitzler

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Foreword

This volume is the result of a research project carried out at the Finance Department of the Stockholm School of Economics (SSE). This volume is submitted as a doctor's thesis at SSE. In keeping with the policies of SSE, the author has been entirely free to conduct and present his research in the manner of his choosing as an expression of his own ideas. SSE is grateful for the financial support provided by the Swedish Bank Research Foundation (BFI) and the Jan Wallander and Tom Hedelius Foundation, which have made it possible to fulfill the project.

Göran Lindqvist

Director of Research
Stockholm School of Economics

Magnus Dahlquist

Peter Wallenberg Professor of Finance
Head of Department of Finance
Stockholm School of Economics

To my parents, Agnes and Götz

Acknowledgments

When I started at Stockholm School of Economics, a wise colleague told me the biggest challenge to completing a PhD is to survive what feels like an ever-lasting research cycle. Back then I had a vague idea what that meant. Now, after many years and moments of frustration, I understand the sentiment. Defending my thesis represents a milestone in my career and many helped me to get here. I would like to take this opportunity to express my gratitude to my colleagues, friends, and family for their continuous support and encouragement.

First, I would like to thank my advisor, Per Strömberg, for the direction he provided me with during my studies. He supported my intentions to work on different topics, and I am particularly grateful that I could rely on his economic intuition in all cases. I would also like to thank my co-advisor, Ulf von Lilienfeld-Toal, who continuously encouraged me, and kept a positive attitude during each and every re-iterative discussion of my results.

While working as a teaching assistant at the department, I learned a lot about financial topics and the art of teaching them from Mike Burkart, Cristina Cella, Paolo Sodini, Per Strömberg, and Roméo Tédongap. Furthermore, I am grateful to Magnus Dahlquist for helpful suggestions for my research, Mike Burkart for integrating work and football so seamlessly within the department, and Laurent Bach for answering all econometric questions that could come to my mind. Finally, I would also like to thank the rest of the faculty for creating such a productive and interactive research environment: Anders Anderson, Ramin Baghai, Bo Becker, Clas Bergström, Marieke Bos, Peter Englund, Mariassunta Giannetti, Michael Halling, Jungsuk Han, Bige Kahraman, Daniel Metzger, Francesco Sangiorgi, and Irina Zviadadze.

Setting up in a foreign country while being occupied with time-consuming research projects is indeed a challenge. Thanks to my fellow classmates - I enjoyed every single moment. I am grateful for having been able to share this experience with my friends Patrick Augustin, Johannes Breckenfelder, and Hamid Boustanifar, who were a source of inspiration at all times, and helped me to excel at whatever I was doing. Additionally, I would like to thank my Swedish friends from other economic disciplines: Johan Egebark, Mathias Ekström, Johan Grip, and Linus Hasselström who were not only my

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Introduction

My doctoral thesis *Empirical Essays in Finance* contains four research papers in different fields of financial economics. Each chapter is self-contained and may be read independently. All projects were developed and executed during my PhD studies at the Department of Finance of the Stockholm School of Economics. In the remaining part of this introduction I briefly describe what each paper is about and how I got interested in the topic. Thereafter, I give an outlook on the main results. The first paper is based on a single-authored working paper that I presented during the academic job market 2013/2014. The initial idea developed during a discussion of the S&P 500 inclusion literature in Gur Huberman's PhD course at Columbia Business School. Making use of shares held by corporate control holders as a proxy for scarcer stock supply, I suggest a cross-sectional test of the S&P 500 inclusion. The second paper is co-authored with Ulf von Lilienfeld-Toal. Our work is based on extensive efforts to construct a comprehensive database for 13D filings, which are required to be filed by activist shareholders owning more than 5% of a US based corporation. Building on recent work about shareholder activism by hedge funds, we study activist outcomes of different types of investors in our large sample. The third paper started in a cooperation with Kommuninvest AB, which is a financial institution specialized on municipal finance in Sweden. The paper discusses the organizational structure of such a municipal credit agency and compares its portfolio of municipal loans with the one provided by commercial banks. I greatly acknowledge Kommuninvest's support of giving me access to their database and helping me collect data of commercial bank lending. The fourth paper is co-authored with my colleagues Patrick Augustin, Hamid Boustanifar, and Johannes Breckenfelder. In contrast to the previous essays included in my thesis, the starting point for our paper is at the macroeconomic spectrum of financial topics, sovereign credit risk. In particular, we estimate to what extent sovereign credit risk may have negative externalities on corporate borrowing costs.

In the first paper, *Stock Price Elasticity and Control Ownership*, I suggest a novel cross-sectional test of the S&P 500 index inclusion effect. Such stock index inclusions offer an interesting research design because they lead to increased demand for the stock

from index-tracking funds that is unrelated to positive investment outlooks. This provides estimates for the price pressure of stock demand. The contribution of this paper is that it provides a cross-sectional test based on stock supply, which I measure by the fraction of shares held by corporate control holders. The main result suggests that the smaller the free float, the larger the price impact of the index inclusion. The float-adjustment of S&P 500 index weights in 2005 enables a second test in a natural experiment. As predicted by the price pressure hypothesis, the cross-sectional price impact of control ownership declines after the reform and effectively disappears. Unlike in the earlier part of the sample, even the well-known S&P 500 average inclusion return reverts quickly. This finding is consistent with the interpretation that arbitrage has become more efficient in the last decade.

The second paper is titled *What matters for Investor Activism? An investigation of Activists' Incentives vs. Activist Types* and provides a broad empirical assessment of shareholder activist campaigns in the US. Our analysis is based on a complete sample of Schedule 13D filings. We first document the high frequency in which these events occur. Relating to existing literatures on hedge fund activist campaigns, we compare the stock price reaction of filing announcements for different activist types. We find that announcements of activist hedge fund holdings are not accompanied with larger abnormal returns. The only group of activist filers standing apart with a smaller effect are financial institutions. However, more important economic determinants are activists' ownership stakes and the length of reported filings. We interpret this as evidence for the relative importance of shareholder incentives.

The third paper, *Municipal Lending Institutions in Sweden*, analyzes a publicly owned financial institution that solely focuses on municipal lending, known as a municipal credit agency. Our empirical approach compares loans provided by this institution with a sample of municipal loans offered by commercial banks. We report evidence that credit spreads of commercial bank loans are on average 15bp higher. This difference is particularly strong in a sample of small municipal loans. The business model of a municipal credit agency is simple. It raises long-term credit by issuing highly rated bonds in international capital markets and uses these funds to improve access and liquidity for municipal debt. Thereby, it may realize refinancing advantages over commercial banks that could be passed on to municipalities. In addition, municipalities participating in this institution sign a joint guarantee for liabilities, which effectively puts a coinsurance mechanism in place. Time-series variation of when municipalities begin to participate in the municipal credit agency allows us the estimation of an alternative panel model. We find that credit spreads decrease by 13bp after a municipality joins

the municipal credit agency. Using the same framework, we cannot detect evidence that this membership affects the fiscal discipline of municipalities in a negative way. During a financial crisis, such an institution may mitigate spillover effects on municipal credit markets as its asset and funding base may be less affected.

The fourth and last paper, *Sovereign Credit Risk and Corporate Borrowing Costs*, estimates spillover effects onto corporate borrowing costs caused by sovereign credit risk. Our empirical setup follows Acharya, Drechsler, and Schnabl (2014) who use the recent bailout of Irish banks to quantify the risk transfer from financial institutions to the public balance sheet and back to the financial sector. To establish a causal relationship from sovereign credit risk to corporate borrowing costs, we use the announcement of the first Greek bailout on April 11, 2010 as a quasi-natural experiment. This event represents an explicit violation of the Maastricht Treaty and increased the perception of sovereign risk across Europe. Our main result suggests that a 1% increase in sovereign credit risk raises corporate borrowing costs by 0.1% more after the bailout. The magnitude of our estimate is as large for non-financial companies as it is for financial companies. Testing cross-sectional predictions of sovereign credit risk, we find more pronounced effects in countries that belong to the Eurozone, that are more financially distressed, and that have weaker property rights. Lastly, we also find a larger effect for firms that have large public ownership stakes and that are more bank dependent.