Essays in Empirical Finance

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To my family

Foreword

This volume is the result of a research project carried out at the Department of Finance at 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 her research in the manner of her choosing as an expression of her own ideas.

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Director of Research
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Professor and Head of the
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Vilnius, June 1, 2016

Egle Karmaziene

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Introduction

This thesis consists of four self-contained essays on empirical finance and concerns two major themes: household saving and agents' behavior in stock markets. First, I seek to better understand the savings motives of entrepreneurial households. Second, I study the incentives and behavior of stock markets' participants – analysts, traders, and managers of mutual funds. Although the themes are different, they are linked by a policy-driven theme and the use of empirical finance methodology.

The first chaper, entitled *Motives for Entrepreneurial Saving: Evidence from Sweden*, is co-authored with Fatemeh Hosseini Tash. It evaluates the drivers of a high saving rate of entrepreneurs. Previous literature has found that business-owners save at a higher rate than the rest of the population (Gentry and Hubbard (2004)). However, data limitations prevented the researchers from empirically evaluating the motives for the elevated saving rate. We used a unique dataset that links Swedish households' wealth and income to the financial statements of their firms. We investigated the decision to enter entrepreneurship, stay in it, or leave it.

We document that, in Sweden, entrepreneurial households start saving at a higher rate than the rest of the population, usually two years before starting the business; the rate increases even more once the person starts a firm. Next, we hypothesize that if entrepreneurs save at elevated rate for precautionary reasons, then those who experience higher levels of risk should save at a higher rate. We find support for this prediction: firm-owners in risky industries save a higher proportion of their income and the effect rises from founders of unlimited liability firms. The legal form of their ventures enhances the need for saving – being liable for firm's debts in the case of bankruptcy highlights the need for precautionary saving. Finally, we hypothesize that if a business-owner saves for the firm's invest-

ments, then those owners who encounter better investment opportunities will save more in order to accumulate capital. We provide suggestive evidence that owners of limited liability firms save for investments of their ventures on their personal and business accounts. The results have implications for policy makers, who are currently seeking to increase the levels of entrepreneurship. Our findings suggest that lowering requirements to start a limited liability firm may increase the number of ventures.

The second chaper, entitled *Beware of the Spider: Exchange traded funds and the 2008 short-sale ban,* is co-authored with Valeri Sokolovski. In this paper, we examine how short-selling changed during the short sales ban on financial-sector stocks. Consistent with expectations, we document that short sales of banned stocks decreased significantly during the ban period. Interestingly, we find that even though sales of exchange-traded funds (ETFs) were not banned, the traders did not replace shorting stocks with shorting financial-sector ETFs. These findings are consistent with past literature showing that despite deteriorating quality of equity markets during the short-sale ban, traders did not use likely substitutes – inverse ETFs or derivatives.[1]

However, we document that traders migrated to shorting the largest and most liquid ETF in the world: the S&P 500 Spider. We argue that short-selling a broad market index ETF, which remained unbanned, was a viable method of circumnavigating the ban without raising suspicion from regulators. Additionally, we offer evidence that the supply of ETF shares available for lending was able to be increased rapidly to meet the demand through ETFs' creation mechanism ("create-to-lend"). We believe that this finding is important for policy-makers in order to implement efficient financial markets regulation.

In the third paper, *Incentives of Financial Analysts: Trading Turnover and Compensation*, I study the incentives for sell-side security analysts to issue biased recommendations. Past theoretical literature has predicted that analysts might issue overly optimistic recommendations in order to induce more trading and commissions received by the broker in expectation of

[1] See, e.g., Battalio and Schultz (2011), Grundy et al. (2012), Beber and Pagano (2013), Boehmer et al. (2013), Hendershott et al. (2013).

higher compensation.[2] Empirical literature has shown that biased research generates abnormal levels of trading.[3] However, due to sensitive information about personal income, it was not able to test the existence of the link between trading and compensation. Using hand-collected data on the most active analysts in Sweden, I document that analysts are not compensated for covering stocks with high turnover; their income increases only in the form of abnormal turnover that their research generates for the broker. Moreover, in line with studies showing that young analysts are better off herding than issuing bold research, I find that brokerage houses only compensate more experienced analysts for influential research.[4]

The fourth paper, *Mutual Funds Flows and Investor Sentiment*, examines the relationship between mood in the markets and how investors allocate capital to funds. Consistent with past studies, I find that flows are higher to funds with good past performance.[5] The shape of the flow–performance relationship among open-end funds varies with investor sentiment. This link is stronger when the market tone is optimistic. Cross-sectional comparison reveals that the convexity of the relationship is more pronounced among funds that receive less demand, especially among risky funds in low-investor-sentiment quarters. Managers of such funds that are underperforming have incentives to increase the risk of their portfolios; they do this by betting more on the market index and buying larger stocks in low-sentiment quarters. Applying Baker and Wurgler's (2006) findings suggests that this strategy is suboptimal.

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[2] See, e.g., Hayes (1998).
[3] See, e.g., Jackson (2005).
[4] See, e.g., Scharfstein and Stein (1990), Hong, Kubik and Solomon (2000), Leone and Wu (2007).
[5] See, e.g.,Chevalier and Ellison (1997), Sirri and Tufano (1998).

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