

Essays on Currency Risk and Financial Frictions

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To my mother, Margarita, and my wife, Kirsten

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 doctoral 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.

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Stockholm, April 27, 2017

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Introduction

This doctoral thesis consists of four independent empirical papers in financial economics. Although my work analyses three different financial markets (currencies, credit default swaps and exchange traded funds) the common thread is financial frictions. In my first paper, I empirically test (and find evidence in support of) the idea that a concentration of a large number of levered speculators in the currency carry trade is driving the extreme losses observed in the data. In my second paper, my co-author and I survey the literature on risk based explanations for the currency carry trade and find that the risk based story is incomplete. In my third paper, my co-authors and I ask what is driving the trading of sovereign credit default swaps (CDS). We find rich cross-sectional and time series variation in sovereign CDS trading and suggest that the bulk may be driven by hedging motives. My final paper focuses on the short-sales of equity exchange traded funds (ETFs). My co-author and I find that ETFs were actively used to bypass the 2008 short-sale ban. The list of papers comprising this thesis is as follows.

Crowds, Crashes, and the Carry Trade

Currency carry trades exhibit sudden and extreme losses. A popular explanation is that these losses are to some extent driven by leveraged carry trade speculators amplifying negative shocks through forced unwinding of their positions. A testable implication is that the likelihood of large carry trade losses (crashes) increases with the level of carry trade activity (crowdedness). To test it, I develop a measure of crowdedness based on daily abnormal currency return correlation among the target currencies. I show that between 40% and 50% of the largest carry trade losses occur in periods of high crowdedness. I further demonstrate that high levels of crowdedness double the probability of realizing an extreme carry trade loss after controlling for FX volatility, FX liquidity, equity volatility and funding liquidity. Finally, I show that carry trade crowdedness negatively forecasts monthly carry trade returns.

The Benchmark Currency Stochastic Discount Factor

(joint with Erik Fredriksen)

The question of what is the appropriate stochastic discount factor (SDF) for pricing the positive predictable excess returns for investments in high interest rate currencies and the negative predictable excess returns for investments in low interest currencies remains open in the literature. A number of competing candidate currency SDFs currently exist. We use a relative entropy minimization approach of Ghosh, Julliard and Taylor (2016) to extract the *most likely* SDF to price the interest rate sorted currency portfolios *out-of-sample*. Our *out-of-sample* SDF performs better in the cross-sectional asset pricing tests than the currently available currency return pricing models. Additionally, our estimated SDF offers an intuitive benchmark to which the existing currency pricing models can be compared, hence offering a tractable framework within which we survey the literature on currency risk premiums.

Why Do Investors Buy Sovereign Default Insurance?

(joint with Patrick Augustin, Marti G. Subrahmanyam and Davide Tomio)

We provide empirical evidence of a significant complementarity between the size of a country's debt and the net amount of insurance purchased against default by its government, based on a novel data set of net notional amounts outstanding for single-name sovereign credit default swaps (CDS) from October 2008 to September 2015. Domestic and international debt, the underlying reference obligation for many CDS contracts, reflect different information sets and, together with the size of the economy, explain up to 75% of the cross-country variation in net insured positions. Unlike for CDS spreads, for which a single principal component accounts for 54 percent of the cross-sectional variation, common global factors explain only up to 7 percent of the variation in sovereign CDS net notional amounts outstanding, consistent with findings that net sovereign insurance is driven primarily by country-specific risk. We further pinpoint two economic channels that explain the net trading in sovereign CDS: (a) country-specific credit risk shocks that change banks' capital requirements based on regulatory rating thresholds, and (b) the issuance, but not the announcement, of domestic and international debt. Our findings suggest a strong hedging motive for the use of sovereign CDS.

Beware of the Spider: Exchange Traded Funds and the 2008 Short-Sale Ban

(joint with Egle Karmaziene)

This paper examines the effects on exchange traded funds (ETFs) of the 2008 short-sale ban on financial-sector stocks. We show that while short sales of banned stocks decreased significantly during the ban period, financial-sector ETFs and the biggest and most liquid ETF - the S&P 500 Spider - experienced a surge in short sales. We argue that short selling equity ETFs, which remained unbanned, was a viable method of circumnavigating the ban. 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").