

## SUMMARY OF RESEARCH

**Galin Todorov**

The first chapter of my dissertation sets up an empirical model that examines the impact of US market returns (referred to as returns spillovers) and US market conditional volatility (referred to as volatility spillovers) on the returns and conditional volatilities of twenty-one frontier markets during the period between December 1st, 2005 and January 15th, 2010. Using daily country data from the MSCI Barra, we find that spillovers from the USA to frontier markets are rather weak, implying limited exposure of Frontier markets to shocks from the US. Our results suggest that it is not the lagged US market returns that have influence, rather it is the expected US market returns that impact frontier market returns. The inference is that frontier markets absorb news from the USA almost immediately at the time of the news release. This implies that frontier markets might not at all be inefficient, rather, their real and financial sectors might be resilient to influence from the US. From the perspective of a global financier, this finding means that there might exist some diversification benefits from investing in these developing economies. From the perspective of a developing country policy maker it means that a potential increase in capital flows from the US does not necessarily increase local market volatility even in times when the US economy is deteriorating.

The second chapter of my dissertation explores the US stock index return and volatility spillovers on the mean and volatility of stock index returns of 21 Frontier markets. We entertain potential time-variation in spillovers in mean returns by considering a time-varying parameter (TVP) model. Spillovers in volatility are modeled by augmenting a standard GARCH(1,1) model with current and one-period lagged US conditional volatility effects. The resulting model can be cast in state space form. However, it is not time-invariant as the 'coefficient' multiplying the state variable (the TVP parameter) is current period US returns. The model is estimated by the Kalman Filter. Our TVP model detects statistically significant time-variation in return spillovers and statistically and quantitatively important volatility spillovers for most Frontier markets. Several important hypotheses of interest are tested using a variety of restricted versions of the general model. Perhaps not surprisingly, Frontier countries are characterized as neither completely segmented nor completely integrated. An important contribution of the paper is a detailed analysis of the relative contributions from US and own-country lagged effects on both the mean and volatility of returns in

Frontier countries. Our results indicate possible orthogonality in the contribution of current US and lagged own-country returns on Frontier countries mean returns.

The third chapter of my dissertation examines the risk-return relationship in twenty Frontier country stock markets by setting up an international version of the intertemporal capital asset pricing model (International ICAPM). The systematic risk in this model comes from covariance of Frontier market stock index returns with world returns, proxied by US stock index returns. We also incorporate own country variances as additional determinants of Frontier country returns. Our model allows for the covariance risk to be time-varying. Time-varying correlations are captured by utilizing the Dynamic Conditional Correlations (DCC) model. The premium per unit of covariance risk is allowed to vary over time as well. Thus, both the risk and risk premium on Frontier country market returns are time-varying in our model. We find the conditional correlations, although modest on average, to vary over time, and suggestive of substantial diversification benefits from investing in Frontier markets versus a portfolio holding just US stocks. These correlations display no time trend, suggesting that diversification benefits have not diminished with recent globalization. Our results suggest statistically significant impact of both US covariance risk and own country variance risk in explaining Frontier country returns. Time-variation in the price of covariance risk is also found to be statistically significant for most Frontier market returns. However, own country variance risk is found to be quantitatively more important.