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Frontier market transaction costs and diversification[☆]



Ben R. Marshall^{*}, Nhut H. Nguyen, Nuttawat Visaltanachoti

School of Economics and Finance, Massey University, Private Bag 11-222, Palmerston North, New Zealand

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ABSTRACT

Frontier markets, sometimes referred to as “emerging emerging markets,” have high transaction costs so investors who rebalance their portfolios monthly do not receive diversification benefits. Rebalancing every three months or longer, however, leads to diversification gains. Diversification benefits are larger in time periods with lower transaction costs and this is linked to risk aversion. Higher risk aversion results in larger transaction costs and larger return correlations between the United States and frontier markets. There is no cross-country relation between diversification benefits and transaction costs or development. Our results are based on comprehensive measures of transaction costs for 19 frontier markets.

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1. Introduction

Frontier market stock returns have relatively low correlations with developed and emerging market stock returns. However, frontier markets have relatively high transaction costs so it is important to account for these before reaching a conclusion on the diversification benefits

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^{*} Corresponding author. Tel.: +646 356 9099; fax: +646 350 5651.

E-mail addresses: b.marshall@massey.ac.nz (B.R. Marshall), n.h.nguyen@massey.ac.nz (N.H. Nguyen), n.visaltanachoti@massey.ac.nz (N. Visaltanachoti).

international investors in these markets can receive. Frontier markets, which are sometimes referred to as “emerging emerging markets,” (Quisenberry, 2010, p. 40)¹ have become increasingly popular with investors. Standard & Poor’s (S&P) and Morgan Stanley both calculate indices for these markets.

Our paper contributes to the literature as follows: First, we document the cost of trading in frontier markets. Our analysis is based on tick data so we are able to calculate high-frequency measures of the cost of trading, such as effective spread, quoted spread, and price impact. A recent paper by Fong, Holden, and Trzcinka (2011) documents the cost of trading in over 40 developed and emerging country exchanges, but little is known about frontier market transaction costs.

Second, we report the net (post-transaction cost) benefits of frontier market diversification. Transaction costs are an important consideration for investors. De Roon, Nijman, and Werker (2001) show that, while emerging markets appear to provide diversification benefits, these disappear once transaction costs are considered. Balduzzi and Lynch (1999) find investors who ignore transaction costs in the asset allocation process can face a utility of wealth loss of as much as 16.9%.

Third, we investigate the link between transaction costs and diversification benefits. Since transaction costs vary across both countries and across time, we consider whether there is also cross-country and time variation in diversification benefits, and whether these are linked to transaction cost variation. We are unaware of existing papers addressing these questions. Finally, we examine whether there is evidence of frontier markets providing less diversification benefits as they become more developed.²

Unlike previous frontier market studies, we calculate returns for individual stocks and measure each stock’s transaction cost. We also estimate transaction costs for stocks in our two benchmark portfolios using the Corwin and Schultz (2012) high–low price spread estimator. Corwin and Schultz (2012) show their proxy does a good job of reflecting the actual transaction costs, as measured using high-frequency data. However, as a robustness check we also estimate the benchmark portfolio’s transaction costs using the Roll (1984) measure and find our results do not change. The first benchmark portfolio gives U.S. and emerging market exposure. U.S. returns and transaction costs are for NYSE, AMEX, and NASDAQ stocks. Emerging market returns and transaction costs are based on individual stock data for 21 emerging markets. The second benchmark portfolio is based on U.S. exposure only. U.S. equity market returns are very highly correlated with developed market returns (correlation coefficient of 0.972 in our sample period) so we do not include other developed markets in our analysis.

Our analysis is based on 19 frontier market countries for which we have matched return and transaction cost data. Data for six countries are available in 2002, the start of our sample period. Data for the others are available at various intervals after this date. These 19 countries represent over 80% of the market capitalization of all frontier markets included in the MSCI Frontier Market Index in March 2011, and the value-weighted frontier market index we generate from individual stocks within each country has a monthly return correlation of 0.85 with the MSCI Frontier Market Index.³

Speidell and Krohne (2007), Speidell (2008), Jayasuriya and Shambora (2009), and Cheng, Jahan-Parvar, and Rothman (2009) all find that frontier market returns have either low correlations with U.S. or global returns and/or they provide diversification benefits prior to transaction costs. More recently, Berger, Pukthuanthong, and Yang (2011, 2013) show that the diversification benefits extend to frontier market exchange-traded funds (ETFs), which have been created since 2008. ETFs are an obvious way for international investors to achieve frontier market exposure. However, these are very illiquid compared to the frontier markets themselves. For instance, the most liquid ETF, the Guggenheim Frontier Markets⁴ ETF, traded on the NYSE Arca, has had an average monthly value traded of less than US\$20 million since its inception in 2008 through the end of 2010.⁵ In contrast, the stocks included in our study had a total monthly average value traded in excess of US\$11 billion. Institutional investors

¹ Quisenberry (2010) attributes this term to Merrill Lynch.

² We thank an anonymous referee for suggestions we consider these points.

³ Average market capitalization is calculated for 2005–2009 using *S&P Global Stock Markets Factbook* data.

⁴ Previously called the Claymore/BNY Frontier Markets ETF (ticker FRN).

⁵ Other frontier market ETFs include the Market Vectors Africa Index (AFK), Market Vectors Gulf States Index (MES), PowerShares MENA Frontier Countries (PMNA), and WisdomTree Middle East Dividend (GULF) ETFs. The average monthly value traded from inception to the end of 2010 ranges from just US\$4.1 million (GULF) to US\$8.7 million (AFK).

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