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Market maturity and mispricing☆

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ABSTRACT

Relying on the Stambaugh, Yu, and Yuan (2015) mispricing score and on 45 countries between 1994 and 2013, I document economically meaningful and statistically significant cross-sectional stock return predictability around the globe. In contrast to the widely held belief, mispricing associated with the 11 long/short anomalies underlying the composite ranking measure appears to be at least as prevalent in developed markets as in emerging markets. Additional support for this conjecture is obtained, among others, from tests for biased expectations based on the behavior of anomaly spreads surrounding earnings announcements as well as from within-country variation in development.

1. Introduction

In their marketing materials, mutual fund companies often claim that emerging markets yield better opportunities for stock picking than developed markets.[1] However, the evidence is mixed. Dyck, Lins, and Pomorski (2013) and Huij and Post (2011) indeed find that active management outperforms passive management in emerging markets or is at least successful enough to cover its expenses. In contrast, Busse, Goyal, and Wahal (2014), Eling and Faust (2010), Ferreira, Keswani, Miguel, and Ramos (2013), or Kang, Nielsen, and Fachinotti (2011) report that mutual funds tend to underperform traditional benchmarks, and find little to no evidence for stock picking skill, superior performance, or performance persistence in emerging markets.

With respect to more specific measures of potential mispricing, particularly studies with early sample periods, such as Bekaert and Harvey (2002) or Bhattacharya, Daouk, Jorgenson, and Kehr (2000), tend to conclude that there could be larger inefficiencies in emerging markets. More recent results in Griffin, Kelly, and Nardari (2010) point to higher transaction costs and information costs in emerging markets, but also show that proxies for the violation of the weak form of market efficiency as well as the post-earnings-announcement drift are similar in developed and emerging markets. Other studies find that specific return

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[1] For instance, M&G Investments (2015, p. 18) states that "emerging markets are less efficient than developed markets, many market participants have short-term time horizons, and rapid swings in investor sentiment mean prices can often deviate from fundamentals." Fidelity (2014, p. 7) states that "emerging markets are widely accepted to be less efficient than developed stock markets. (...) These factors coupled with greater incidence of risks augur for an active approach."

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phenomena even tend to be stronger in markets deemed to be more developed. Examples include Titman, Wei, and Xie (2013) and Watanabe, Xu, Yao, and Yu (2013) on the asset growth effect, Eisdorfer, Goyal, and Zhdanov (2014) on the financial distress anomaly, or Barber, George, Lehavy, and Trueman (2013) on the earnings announcement premium.

In essence, the contrasting views can be illustrated with two quotes from recent interviews[2]: "Emerging markets are less efficient than developed markets" (Richard Thaler). There is "nothing convincing we know of" to support such an assertion (Eugene Fama). In sum, the empirical evidence is far from conclusive. In this paper, I aim to revisit this controversial debate. My findings pose a challenge to the widespread perception of necessarily stronger cross-sectional mispricing in emerging markets.

Based on the Morgan Stanley Capital International (MSCI) market classification, I first construct a comprehensive international stock market data set, which covers 115 million firm days between January 1994 and December 2013. I then implement the cross-sectional composite mispricing metric proposed in Stambaugh, Yu, and Yuan (2015). Their methodological innovation is to condense the information contained in 11 well-established or recently proposed anomalies in an aggregate mispricing score for each stock month. Stambaugh, Yu, and Yuan (2015) show that both the alpha and the associated *t*-statistic are much higher in their U.S. sample when sorting on the mispricing score as opposed to averaging the estimates for the individual anomalies. In other words, the approach appears to capture inefficiencies particularly well.

Additional credibility for this conjecture comes from Akbas, Armstrong, Sorescu, and Subrahmanyam (2015). They show that "dumb money" (as proxied for by mutual fund flows) exacerbates mispricing as indicated by the metric, whereas "smart money" (as proxied for by hedge fund flows) attenuates mispricing. Further supporting evidence is provided in Stambaugh, Yu, and Yuan (2012, 2014) who show that investor sentiment drives the dynamics of each of the 11 individual anomalies underlying the mispricing score. In sum, the Stambaugh, Yu, and Yuan (2015) score arguably represents a state-of-the-art approach to identify cross-sectional mispricing based on publicly available information. For brevity, I will thus refer to this metric as "mispricing" in the remainder of the paper.

I find strong evidence for mispricing around the globe, with point estimates exceeding U.S. estimates for about a third of the 45 developed and emerging markets considered in the baseline analysis. For the average country and based on long/short mispricing quintiles, the equally weighted (value-weighted) alpha in local currency relative to a country-specific (Fama and French, 1993) three-factor model is about 107 (84) basis points (bp) per month over the 1994–2013 period.

Notably, mispricing associated with the 11 (Stambaugh, Yu, and Yuan, 2015) anomalies appears to be at least as prevalent in developed markets as in emerging markets. In fact, the alpha difference between developed and emerging markets tends to be positive, and it is often statistically significant and economically meaningful. This key finding is robust. It holds among different firm-level return weighing schemes (equally weighted or value-weighted), different country-level return weighing schemes (country average or country composite), different asset pricing models (raw returns, local factor models, global factor models), and different treatment of currency effects (local currency or USD).

All anomalies underlying the mispricing score as well as the return predictive power of the score itself were originally documented in the U.S. stock market. In this context, my key finding could be driven by two different aspects of data mining, broadly defined. First, statistical biases in the sense of Fama (1991), McLean and Pontiff (2016), or Schwert (2003) could have inflated the historical magnitude of seemingly anomalous returns in the U.S. stock market. However, many countries produce larger long/short spreads, and my results also hold after the exclusion of the U.S. as well as in post-publication years of anomalies. These findings suggest that data snooping is not a major issue.

Second, and more relevant for my purpose, the academic effort of identifying variables that reliably predict differences in cross-sectional average returns has been mainly concentrated on developed markets so far. For instance, Harvey, Liu, and Zhu (2016, p. 5) document that there are "hundreds of papers and factors" focusing solely on the U.S. market. In contrast, emerging markets appear to be "comparatively under-researched" (Fidelity, 2014, p. 7). This asymmetric attention likely has led to a better understanding of which factors truly have predictive power for returns in more mature stock markets, and the Stambaugh, Yu, and Yuan (2015) mispricing score could be partly based on such variables.[3] It is thus important to stress that my results are subject to the caveat that mispricing in emerging markets could be associated with other anomalies, perhaps yet undiscovered.

Furthermore, and as discussed in Griffin, Kelly, and Nardari (2010), comparing the relative degree of Stambaugh, Yu, and Yuan (2015) mispricing across markets is challenging as the level and the cost of information production are hard to measure. While by no means conclusive, my attempts to better understand and interpret the findings continue to support the insights from the baseline analysis.

Most notably, I explore the predictability of the market reaction around earnings announcements as well as of sell-side analysts' forecast errors. Engelberg, McLean, and Pontiff (2015) perform a similar analysis for a broad range of cross-sectional return phenomena in the U.S. market. They

[2] http://media.pimco.com/Documents/15-0088-03-DCD-AprilThaler.pdf and https://www.dimensional.com/famafrench/questions-answers/qa-seeking-the-inefficient-asset-class.aspx.

[3] Nevertheless, the findings in Green, Hand, and Zhang (2014), Hou, Xue, and Zhang (2015), and Jacobs (2015) collectively indicate that many of the individual anomalies underlying the Stambaugh, Yu, and Yuan (2015) mispricing score do not necessarily belong to the strongest return predictors in the U.S. stock market in terms of economic magnitude and statistical significance. In addition, I find that more than 80% of individual anomaly spreads produced in developed markets are as large or larger than those produced in emerging markets.