

## Uncovered Equity “Disparity” in Asian Emerging Markets

Ana-Maria Fuertes, Kate Phylaktis, and Cheng Yan<sup>1</sup>

*“The increasing size and equity content of current capital flows has not yet inspired a new financial market paradigm for exchange rate theory, in which exchange rates, equity market returns, and capital flows are jointly determined.”*

Hau and Rey, (2006)<sup>2</sup>

### 1. Introduction

If a country’s equity market is expected to appreciate (e.g., when MSCI announced that it would include 226 China large-cap A shares to the MSCI Emerging Markets Index in June 2017), should we expect its currency to appreciate or depreciate? This question matters to international equity investors, policymakers and academics. An investor holding foreign equities is exposed to exchange rate fluctuations by nature. Policymakers care about this relation as valuation changes-- induced by foreign exchange and equity returns--generate significant swings in international investment positions. However, little is known about the relation between foreign exchange rates (hereafter FX) and international equity returns.

Consider a US portfolio manager with money invested in Japan. When the Japanese stock market rises relative to the US, the manager is overweight with Japanese equities and, to return to a neutral position and decrease the additional exchange rate exposure, sells Japanese stock and then sells the Japanese yen proceeds for US dollars. The sale of yen for dollars causes the yen to depreciate

<sup>1</sup> Ana-Maria Fuertes is a Professor in Financial Econometrics, Cass Business School, City University London, 106 Bunhill Row, London, UK, EC1Y 8TZ, [A.Fuertes@city.ac.uk](mailto:A.Fuertes@city.ac.uk). Kate Phylaktis is a Professor in International Finance, Cass Business School, City University London, 106 Bunhill Row, London, UK, EC1Y 8TZ, [k.phylaktis@city.ac.uk](mailto:k.phylaktis@city.ac.uk). Cheng Yan is a Senior Lecturer in Essex Business School, Essex University, Colchester, UK, CO4 3SQ, [cheng.yan@essex.ac.uk](mailto:cheng.yan@essex.ac.uk). This White Paper is adapted from Ana-Maria Fuertes, Kate Phylaktis, and Cheng Yan (2016), “Uncovered Equity Disparity in Asian Emerging Markets”, Cass Emerging Markets Group Working Paper EMG-01-2016. Available at: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3205055](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3205055). We gratefully acknowledge the National Stock Exchange of India (NSE) and New York University (NYU) Stern School of Business (NSE--NYU Stern) Initiative for the Study of Indian Capital Markets.

<sup>2</sup> Hau, H. and H., Rey (2006). Exchange rates, equity prices and capital flows. *Review of Financial Studies* 19, 273–317.

at the same time that the Japanese stock market is outperforming. This is called uncovered equity parity (UEP) condition (e.g. Hau and Rey 2006). UEP is relevant for at least two reasons. On the one hand, it asserts that foreign net equity flows drive FX returns, which have been notoriously difficult to predict using other macro-economic variables. On the other hand, from the perspective of international portfolio management, it is also important for global investors, as investments in foreign equity markets inevitably involve investing in FX.

The evidence is however not supportive for emerging markets (EMs), known as the failure of UEP in EMs (Kim, 2011)<sup>3</sup>, as most (if not all) studies find a positive rather than a negative correlation between EM equity and FX returns (Kim, 2011; Cho, et al., 2016<sup>4</sup>; Cenedese, et al., 2015<sup>5</sup>). The reasons for this are unclear. We innovatively conjecture and formally test whether it is because the foreign investors in aggregate buy (rather than sell) more local equity when the EM equity market appreciates (return-chasing hypothesis).

## **2. Our Study**

This paper makes two contributions to the literature.<sup>6</sup> First, it analyses the dynamics of foreign equity markets, FX markets, and capital flows using an unbalanced panel of daily data for eight East Asian emerging markets (EMs) from 1996 to 2013 which includes the recorded trades of all foreign investors in the six EMs, paired with daily closing prices of the Bombay Stock Exchange (BSE) Sensitive 30 Index in India (SENSEX), National Stock Exchange (NSE) CNX Nifty 500 Index in India (NIFTY50), Jakarta JSX Composite Index in Indonesia, the Kospi and Kosdaq Indices in Korea, the PSE Composite Index in the Philippines, the TWSE/TAIEX Index in Taiwan, and the Bangkok SET Index in Thailand. These data enable more accurate inferences on UEP in EMs than the monthly/quarterly bilateral flows used in prior studies.

Second, after confirming the evidence against UEP in EMs documented by Kim (2011) and Cho

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<sup>3</sup> Kim, H (2011). The risk adjusted uncovered equity parity. *Journal of International Money and Finance* 30, 1491-1505.

<sup>4</sup> Cho, J. W., Choi, J. H., Kim, T., and W., Kim (2016). Flight-to-quality and correlation between currency and stock returns, *Journal of Banking and Finance* 62, 191–212.

<sup>5</sup> Cenedese, G., Payne, R., Sarno, L., and G. Valente (2015). What do stock markets tell us about exchange rates? *Review of Finance* 31, 1-36.

<sup>6</sup> Fuertes, A.-M., Phylaktis, K., and C. Yan (2016). Uncovered equity “disparity” in emerging markets. Cass Emerging Markets Group Working Paper EMG-01-2016. Available at: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3205055](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3205055)

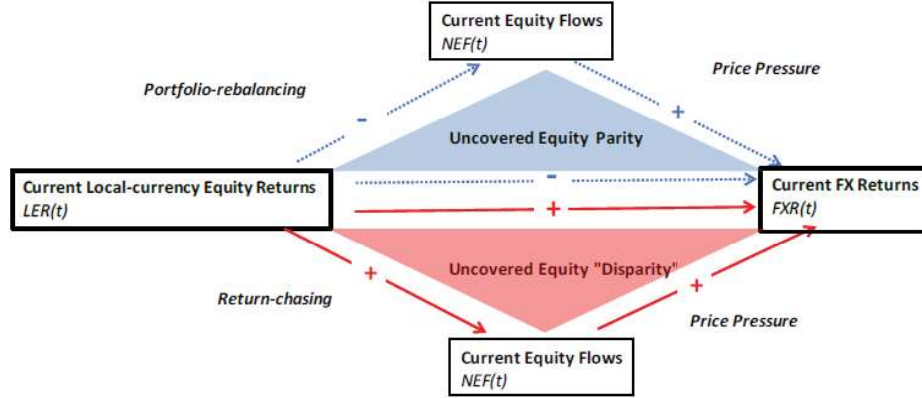
et al. (2016)--we do find that local EM equity return improvements go hand-in-hand with currency appreciation which suggests that the relationship is instead positive. We assess the mechanisms leading to what we call the uncovered equity “disparity” in EMs.

### **3. Results**

The first mechanism towards UEP requires that, in line with the notion of portfolio rebalancing, foreign equity investors rebalance away from (toward) countries whose equity/FX markets have recently appreciated (depreciated). The evidence from our paper challenges this mechanism for UEP as a contemporaneous or lead-lag relationship between EM equity returns and net investment flows of US investors into EM equity. We find that net equity flows respond positively to both current and past local-currency equity returns. Net equity flows are oblivious to past FX returns, echoing the results of Curcuru et al. (2014) for U.S. equity investors, which suggests that foreign equity investors in EMs mainly use exchange rate as a vehicle.

Motivated by these findings, we investigate whether foreign investors in EMs predominantly pursue return-chasing strategies. We formally test whether equity flows of foreign investors in EMs are driven by high EM expected equity returns. Decomposing the current returns into the expected and unexpected components, we find that there is a significantly positive relation between the expected component and current flows but a much weaker positive relation with the unexpected component, which formally endorses the return-chasing hypothesis.

The second mechanism towards UEP implies that a decrease in net equity flows comes hand-in-hand with domestic currency depreciation. We provide favorable evidence of this mechanism, namely, the contemporaneous relation between FX returns and net equity flows is significant and positive. Therefore, in the context of the Hau and Rey (2006) theoretical framework, altogether the findings of this study indicate that the UEP failure in EMs can be ascribed to the absence of the first mechanism--the evidence that foreign investors increase their equity holdings in those EMs that have recently outperformed and is aligned with return-chasing (as opposed to portfolio rebalancing) strategies. This finding rationalizes the uncovered equity “disparity” in EMs as Figure 1 illustrates. The relationships represented in the top graph of the figure (dotted lines) summarize the two prevailing mechanisms according to the Hau and Rey (2006) theoretical model and the UEP prediction. The bottom part of the figure (continuous lines) illustrates the mechanisms documented empirically in our paper.



**Figure I: Uncovered Equity (Dis)Parity.** *The figure plots the mechanisms towards (and away from) the Uncovered Equity Parity prediction according to the Hau and Rey (2006) theoretical framework.*

Our daily data allows us to explore other aspects of the failure of the UEP in EMs, and compare our explanation to existing explanations in the literature. Our results hold after we control for the global equity volatility. We also find that the uncovered equity “disparity” is time-varying and asymmetric. On the one hand, we find an upward time trend in the correlations between local-currency equity and FX returns in our six EMs using moving correlations, which aligns well with the return-chasing hypothesis but is at odds with Kim (2011)’s risk-based explanation which implies that there should be a downward time trend in these correlations given the fact that EMs are gradually integrated into the global financial system. On the other hand, as borne out also by the dynamic correlation analysis, the “disparity” is magnified in periods of economic downturn--such as during the Global Financial Crisis in late 2000s which suggests that flight-to-quality may have played some role in these periods. Our return-chasing explanation requires neither the presence of a global equity volatility factor (Cenedese et al., 2015) nor flight-to-quality behavior (Cho et al., 2016).

#### 4. Conclusion

The portfolio-rebalancing theoretical framework of Hau and Rey (2006) enables the UEP hypothesis that local currency equity returns and FX returns are negatively related. The empirical evidence thus far has not been supportive of UEP in EMs. Using daily data on net equity flows, local-currency

equity returns and FX returns for six Asian emerging markets (EMs) covering more than 13 years up to 2013, we confirm the UEP failure in EMs and investigate the underlying mechanisms to provide an explanation.

We find evidence against the first mechanism underlying the UEP prediction in two respects. First, foreign EM equity investors in aggregate do not respond to FX movements, suggesting that they mainly use EM currencies as a necessary vehicle to invest in EM equities. Second, foreign EM equity investors on the whole pursue return-chasing strategies which lead to a positive correlation between the local-currency equity returns and FX returns. But we find strong support for the second mechanism underlying the UEP: there is evidence of a strong contemporaneous positive relation between net equity flows and FX returns. Our results hold after we control for global equity volatility. We also find that the failure of UEP in EMs is time-varying and asymmetric as it magnifies in economic downturns and financial crisis.

Our findings have important implications. With regard to foreign equity flows, policymakers should not just monitor equity or FX markets, but also the interconnections between these two markets and capital flows. The current turmoil in the equity and FX markets in EMs, which have been accompanied by huge capital outflows from the EMs is a reminder of the importance of examining their dynamics jointly. Although our data set is richer than typical data sets of prior UEP studies, it is still limited in that we only have flows of all the recorded trades of foreign investors, but do not have information about the nationalities of each foreign investor. As a result, we can only reveal the overall effects of the foreign investors in our sample markets, but are not able to distinguish the potential different effects of different nationalities. A practical implication for EM equity market participants is that they may want to pay more attention to FX hedging strategies since foreign currency movements do not offset local-currency equity returns but rather represent an additional risk factor exposure for FPIs.