ABFER
ASIAN BUREAU OF FINANCE AND ECONOMIC RESEARCH
ABFER 9th ANNUAL CONFERENCE
23 - 26 MAY 2022 • Hybrid

Dollar Beta and Stock Returns

Valentina BRUNO (American University), Ilhyock SHIM (Bank for International Settlements) and Hyun Song SHIN (Bank for International Settlements)

The financial channel of exchange rates has taken increasing importance in recent decades with deeper global financial integration and interdependence of banking and capital market activity. As a result, the exchange rate's effect on the economy through the financial channel has become more pronounced.

At the 9th annual conference of the Asian Bureau of Finance and Economic Research (ABFER), Professor Valentina Bruno (American University), Ilhyock Shim (Bank for International Settlements), and Hyun Song Shin (Bank for International Settlements) presented their study titled Dollar Beta and Stock Returns that shows how the financial channel of exchange rates operates through changes in risk-taking by investors and is reflected in the response of financial conditions, particularly stock market returns, to exchange rate movements.

More specifically, the authors have shown that higher stock returns in local currency terms tend to go hand-in-hand with an appreciation of the local currency against the dollar.

According to the authors, their study has made three analytical contributions that facilitate a systematic understanding of the impact of the financial channel of exchange rates on domestic financial conditions.

First, the authors introduce a summary measure of the sensitivity of an emerging market economy's stock returns to the dollar exchange rate – the dollar return multiplier – which gauges the strength of the financial channel of exchange rates in a country's stock market. The dollar return multiplier is defined as the ratio of the dollar-denominated stock returns to the local currency-denominated stock returns.

The authors show that across all the emerging market economies, the dollar return multiplier is greater than 1, which suggests that stock returns tend to be positive when the local currency is appreciating against the dollar, while returns tend to be negative when the local currency is depreciating against the dollar.

Figure 1 (pasted below) in the paper plots the relationship between stock market returns denominated in local currency and US dollars for Brazil, Korea, Mexico, and Malaysia. For each of these economies, the points cluster around a line steeper than 45°. This pattern supports that when viewed from the perspective of a global investor who evaluates returns in dollar terms, both gains and losses in local currency are amplified when converted into returns in dollars.

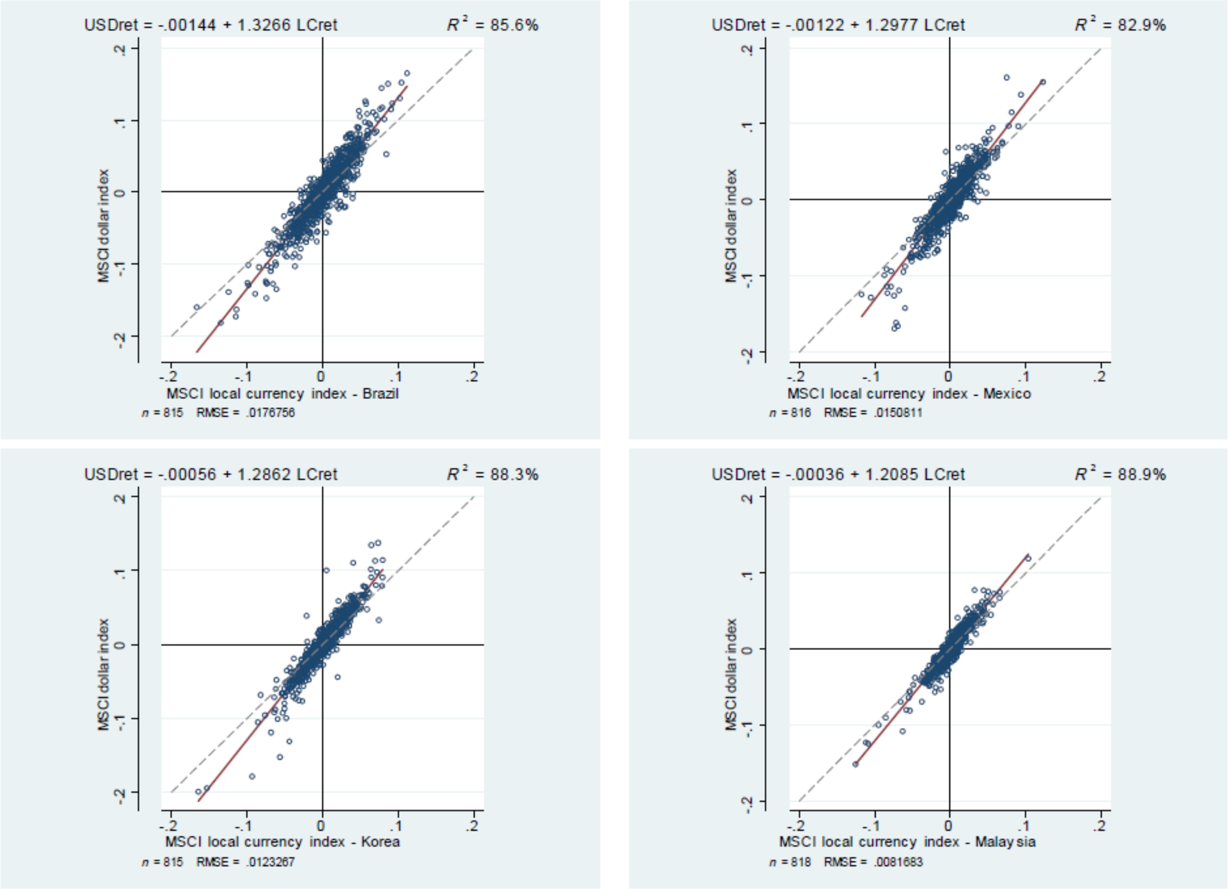

Figure 1: **Dollar return multiplier for Brazil, Korea, Mexico and Malaysia**

The dollar return multiplier underlines how a stronger dollar is associated with "risk-off" episodes in stock markets: lower stock returns in local currency terms are associated with even lower returns in dollar terms.

The authors then investigate the role of the broad dollar index as a global factor. They illustrate that while the dollar return multiplier highlights the role of the bilateral dollar exchange rate, a more systematic panel analysis reveals that it is the broad dollar index that plays a significant role. Specifically, when the authors regress the log difference of the MSCI index on the log difference of the broad dollar index and the bilateral dollar exchange rate, respectively, controlling for the country-level variables (GDP growth, inflation, current account deficit, stock market capitalisation), the log difference of the broad dollar index is statistically significant while the log difference of the bilateral exchange rate is not.

The authors go a step further to examine whether the broad dollar index has attributes of a cross-section asset pricing factor. The analogy is with the CAPM applied to the international context. If the broad dollar index were indeed a risk factor, investors would be compensated in the form of higher returns for having exposure to stock markets that were more sensitive to it.

To investigate this question, the authors introduce the concept of the "dollar beta," defined as the sensitivity of stock returns to swings in the broad dollar index. The authors examine the relationship between the MSCI index return in local currency and the US dollar by plotting (annual) rolling dollar betas for each country's local currency MSCI return against the log return on the broad US dollar index for major Asian EMEs. They find a strong correlation between the broad US dollar index and the MSCI local currency indexes.

The authors then obtain the cross-section relationship between the average MSCI country index return and the country's dollar beta.

The authors find that emerging market stock indices that have a high dollar beta tend to have higher average returns as depicted in the Figure below (Figure 4 of the original paper). This means that investors who hold stocks in a high dollar beta stock market are compensated for the higher risk by a higher average return. In this sense, the dollar beta emerges from their analysis as a cross-section asset pricing factor for EMEs.

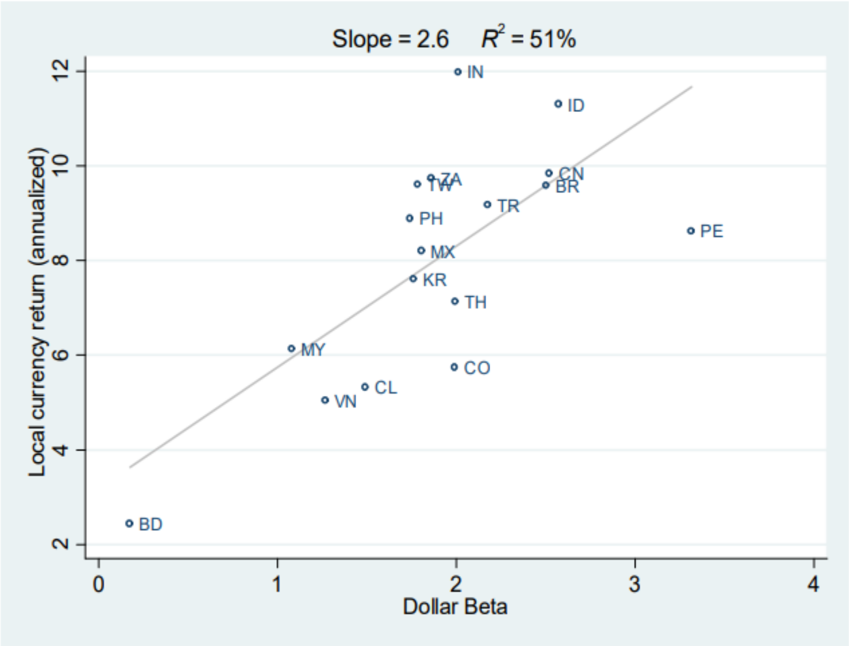

Figure 4: **Dollar beta and Returns.** Beta is transformed into positive values (i.e. beta is multiplied by -1) for ease of exposition.

Finally, the authors highlight that their findings hold several policy implications for EMEs to the extent that the financial channel of exchange rates has implications for the conduct of monetary policy and the macro stabilization frameworks.

First, the mutually reinforcing relationship between an appreciation of the US dollar and the weakening of domestic stock market returns and bond yields suggests monitoring exchange rates as a complement to other market indicators to gauge global financial conditions.

Second, the development of capital markets that reduce the sensitivity of financial conditions to exchange rate fluctuation will expand the scope of domestic policy choices.

Third, central banks and financial authorities may need to monitor the size of foreign financial investments and the characteristics of investors.

Finally, a better understanding of the mechanisms behind the financial channels of exchanges can contribute to strengthening the emerging market economic policy framework, as noted in BIS (2019) and IMF (2020).