The Predictive Power of Cumulative Exchange Rate Deviations and Its Applications

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Abstract

Empirical studies observe that currency exchange rates often deviate from the purchasing power parity (PPP) theoretical values. Previous literature also recognises that exchange rate deviations are self-correcting over time. This study shows that, for bilateral rates of eight developed country currencies for the period 1974 to 2004, exchange rate deviations accumulated over a five-year period were partially corrected over the following three years. Further, this research shows that cumulative PPP deviations can provide reliable information for predicting future directions of exchange rate movements.

A new approach to managing currency risk is proposed in this study to improve international stock portfolio performance. Constructing internationally diversified portfolios, the strategy explicitly recognises currency risk and manages this risk by excluding assets denominated in over-valued currencies. Using quarterly data from eight countries with freely floating currencies over the period 1991 to 2004, the strategy outperformed the MSCI world index in terms of risk reduction and return improvement between 2.18 and 5.08%. Depending on the country selected, the proposed strategy realized between 1.50 and 4.68% higher annualised returns than an equally-weighted total diversification strategy. Most of the improvements remained after adjusting for risk.

Next, a strategy for managing exposure to transactions denominated in foreign currencies is developed, which incorporates both forward rate premiums and predictions of exchange rate movements based on accumulated deviations from PPP. This strategy requires hedging long positions when a foreign currency is over-valued and the forward contract is trading at a premium. The exposures are left uncovered under other conditions. When this strategy was evaluated across seven currencies from the view points of eight countries; for the period 1986 to 2004, it increased domestic cash flow returns and reduced return volatilities when compared against an unhedged strategy.

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