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## Uncovered Equity Parity and rebalancing in international portfolios<sup>☆</sup>



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### A B S T R A C T

Portfolio rebalancing is a key driver of the Uncovered Equity Parity (UEP) condition. According to UEP, when foreign equity holdings outperform domestic holdings, domestic investors are exposed to higher exchange rate exposure and hence repatriate some of the foreign equity to decrease their exchange rate risk. By doing so, foreign currency is sold, leading to foreign currency depreciation. We examine the relationship between U.S. investors' portfolio reallocations and returns and find some evidence consistent with UEP: Portfolio shifts are related to past returns in the *underlying* equity markets. But we argue that a motive other than reducing currency risk exposure is likely behind this rebalancing. In

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particular, U.S. investors rebalance away from equity markets that recently performed well and move into equity markets just prior to relatively strong performance, suggesting tactical reallocations to increase returns rather than reduce risk.

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## 1. Introduction

A new parity condition has emerged in the international finance literature, the uncovered equity parity condition (UEP) of [Cappiello et al. \(2005, 2007\)](#), [Hau and Rey \(2006\)](#), and [Kim \(2011\)](#). UEP is exciting in part because it provides another way of thinking about exchange rate movements, which have been notoriously difficult to predict ([Meese and Rogoff, 1983](#); [Cheung et al., 2005](#)).

The main intuition behind the UEP condition is one of portfolio rebalancing. There are two distinct steps. First, when foreign equity holdings outperform domestic holdings, domestic investors are exposed to higher relative exchange rate exposure and decide to repatriate some of the foreign equity to decrease exchange rate risk. Second, the associated selling of foreign currency leads to foreign currency depreciation.

Evidence supporting the second step of UEP is abundant, as order flow has been shown to impact exchange rates ([Evans and Lyons, 2002](#); [Dunne et al., 2010](#); [Filipe, 2012](#)). However, evidence supporting the first step does not exist; we attempt to fill this void by examining the evidence on the mechanisms behind UEP. One part of the mechanism has investors rebalancing international equity portfolios away from (toward) countries whose markets have recently done well (poorly). Do they? Or do they continue to purchase the equities of countries whose markets have recently performed well? UEP presumes the former, but this behavior would seem to be counter to the presumed behavior driving carry trades in which a high yielding currency is expected to appreciate and continue to appreciate, or returns chasing in general.<sup>1</sup>

We examine this issue from an empirical perspective, using the most recent update of the [Bertaut and Tryon \(2007\)](#) data on U.S. investors' monthly equity positions across 42 markets from 1990 to 2010. We find strong evidence supporting the second leg of UEP: equity flows are contemporaneously positively correlated with currency movements, a relationship consistent with price pressure. This finding is neither controversial nor surprising, as many others have found such evidence.

More elusive has been evidence supporting the first leg of UEP, which itself has two parts. One part is that when foreign equity holdings outperform domestic holdings, domestic investors decide to repatriate some of the foreign equity. The second part is why investors do this. In particular, UEP presumes that the selling of foreign equity holdings that recently outperformed owes to a desire to reduce the now higher exchange rate exposure.

We tackle these two subcomponents in turn. First, we find strong evidence—once appropriate techniques and data are used—that investors do indeed sell foreign equity markets that recently performed well. This behavior is asymmetric, as we do not find increased flows into markets that recently performed very poorly. So this only constitutes partial evidence supporting a condition behind UEP, but it is nonetheless robust evidence.

The second subcomponent, why investors engage in this behavior, is somewhat more difficult to ascertain. UEP suggests investors reallocate to lessen the increased risk of currency exposure. An indirect test of this is to see if investors reallocate because of past currency movements. They do not. U.S.

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<sup>1</sup> By carry trade, we mean simultaneously shorting one or more low-interest rate currencies and buying one or more high interest rate currencies. See, among many others, [Lustig et al. \(2011\)](#). This strategy will be profitable as long as the low interest rate currencies do not appreciate too much against the high interest rate currencies. On returns chasing in international equity markets, see [Bohn and Tesar \(1996\)](#), [Brennan and Cao \(1997\)](#), and [Curcuru et al. \(2011\)](#), among others.

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