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Is there momentum or reversal in weekly currency returns? $\stackrel{\text{\tiny{\scale}}}{\rightarrow}$



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ABSTRACT

We investigate whether momentum or reversal is the dominant phenomenon in short horizon (one- to four-week) foreign exchange rate returns. We find, based on a broad sample of 63 emerging and developed market currencies, evidence of momentum rather than reversal. Momentum strategy returns are as large as 8% p.a. The short-term momentum effect appears to be robust. Returns are larger in the earlier sub-period but still exist in the more recent period. The strategies are also profitable when the USD is appreciating or depreciating but they perform better in business cycle expansions.

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1. Introduction

It is well established that there is medium-term (3–12 month) cross-sectional momentum in equity markets (e.g. Jegadeesh and Titman, 1993).¹ Gutierrez and Kelley (2008) show this long-lasting return continuation follows a cross-sectional reversal in short term (1–2 week) equity returns. More recently, Menkhoff et al. (2012a) find evidence of momentum in 1–12 month foreign exchange (FX) returns in 48 different currencies of up to 10% p.a., while Asness et al. (2013) find currency momentum profits of over

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¹ Pan et al. (2013) show that equity momentum exists at weekly frequencies. Chan et al. (2000) show that momentum effect is present in international equity markets. Griffin et al. (2003) find that momentum effect is stable around the world in both good and bad economic states.

3% p.a. in 10 currencies. Okunev and White (2003), who form momentum winner and loser portfolios using moving averages, report momentum profits of up to 7% p.a. in eight currencies, while Chong and Ip (2009) report this approach generates net returns of approximately 20% p.a. in emerging market currencies. However, the literature leaves the following question unanswered - Is there cross-sectional momentum or reversal in weekly currency returns? We address this question by considering return dynamics over 1–4 week look-back and holding periods.² The momentum strategy we implement involves taking long (short) positions in currencies that have appreciated (depreciated) the most against the USD. The reversal strategy is the inverse of this. Long (short) positions are established in currencies that have depreciated (appreciated) the most. We rank the currencies every period on the basis of lagged excess returns and form zero investment long-short portfolios from a momentum perspective. If the Winner–Loser (W–L) portfolio returns are positive (negative), there is evidence in favour of momentum (reversal). We consider look-back (J) and holding periods (K) of 1, 2, 3 and 4 weeks. Consequently, we implement a total of 16 strategies using weekly and monthly spot and forward data on 63 currencies. The period we focus on is November 1997 to July 2013. However, we also conduct a robustness check on fewer currencies for the January 1972 to October 1997 period.

We find large and statistically significant positive excess returns for almost all the holding and lookback periods we consider. There is strong evidence in favour of short-term momentum and against short-term reversal. For example, a three-week look-back and one-week holding period strategy yields 8.13% p.a. Similarly, a three-week look-back and two-week holding period strategy yields 7.70% p.a. We find a significant increase in momentum returns as we increase the look-back period. Momentum returns are larger in the earlier sub-period, not related to FX carry trade strategy returns, and are stronger during US expansions than recessions. We also observe momentum returns during both UP and DOWN states of the FX market. However, the returns are higher during the DOWN states (periods following a depreciation of a basket of major currencies versus the USD) of the FX market. Furthermore, momentum returns are lower when FX volatility is higher. Finally, breakeven transaction costs range from 2 bps for the very short-term strategies which involve more frequent trading to 97 bps for the monthly strategy.

While inconsistent with weak-form version of the efficient market hypothesis (e.g. Fama, 1970, 1991), the empirical evidence of under and overreaction does have theoretical foundations. Barberis et al. (1998), Daniel et al. (1998) and Hong and Stein (1999) develop models based on behavioural biases, like investor under-reaction, overconfidence, conservatism and self-attribution bias which explain these phenomena.

The rest of this paper is organized as follows. We describe our data and portfolio construction methodology in Section 2. Section 3 details the empirical results of various long-short currency strategies. Section 4 illustrates the various robustness checks and performance of momentum strategies under different market circumstances. Section 5 contains a discussion of possible explanations for currency momentum. We conclude our discussion in Section 6.

2. Data and methodology

2.1. Data

For our core analysis we use log spot and forward exchange rate (foreign currency units per USD) data on weekly and monthly frequencies for 63 emerging and developed market currencies from Thomson Reuters Datastream. These currencies are the same as those used by <u>Burnside et al. (2007)</u>. This data series start in November 1997 and end in July 2013. We use mid exchange rates for all currencies and sample the data on every Wednesday. Our data set varies over the sample period due to the fact that the forward exchange rate data was not available for some currencies from the beginning of

² We use the term "cross-sectional momentum" to make it clear we refer to buying (selling) currencies based on their past returns relative to other currencies rather than the time-series momentum of Moskowitz et al. (2012), which suggests buying and selling based on the past performance of the asset itself. Cross-sectional reversal is also measured relative to other currencies unlike the reversal of Jegadeesh (1990), Lehmann (1990) and Lo and MacKinlay (1990), which is based on the auto-covariance structure in the time series of individual asset returns. From this point on we use the terms "momentum" and "reversal" to refer to cross- sectional momentum and reversal respectively.

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