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Empirical evidence on the currency carry trade, 1900–2012[☆]



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ABSTRACT

Most of the currency literature investigates the risk and return characteristics of the currency carry trade after the collapse of the Bretton Woods system. In order to gauge the long-term currency carry premium, we extend the sample to 20 currencies over the period 1900 to 2012. We find modest Sharpe ratios in the range of 0.2–0.4 for carry trading over this period. This is markedly lower than the Sharpe ratios above 0.6 reported for recent sample periods. We document that carry trading occasionally incurs substantial losses, which fits well with risk-based explanations for deviations from uncovered interest parity. We find that large carry trading losses do not necessarily coincide with large losses in global equity markets. Our results help to better understand the source and nature of excess returns on the carry trade.

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1. Introduction

The carry trade in currency markets means that an investor invests in short-term deposits from currencies with a high interest rate (the so-called “investment currencies”) and finances this purchase with a short-term loan in currencies with a low interest rate (the so-called “funding currencies”).

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Alternatively, the currency carry trade can also be implemented using currency forward contracts. When investors are risk-neutral and act rational, according to Uncovered Interest Parity (UIP), the currency that earns the high interest rate is expected to depreciate by as much as the interest rate differential. If UIP holds, then the expected excess return on the currency carry trade is zero. However, there is a growing body of literature indicating that the carry trade has statistically and economically significant positive excess returns and a Sharpe ratio about double that of equity markets; see for example [Neely and Weller \(2013\)](#).

The early literature in this field consists of [Hansen and Hodrick \(1980\)](#), [Bilson \(1981\)](#), and [Fama \(1984\)](#), among others. These studies have in common that their main empirical results are established on research samples starting in 1973 when the Bretton Woods system ended and many currencies started floating. These early researchers find violations of UIP in their relatively short sample periods with a limited number of currencies. Since then, a large body of literature has developed updating the sample period and extending the number of currencies.

Interestingly, several papers also try to find evidence of carry trading going back further in history. For example, [Lustig and Verdelhan \(2007\)](#) start their sample in 1953 instead of 1973. Moreover, several studies have investigated UIP going back even further in time. [Lothian and Wu \(2011\)](#) use a sample covering two centuries (1800–1999) for two currency pairs (US dollar/UK sterling and French franc/UK sterling) and conclude that, although there are prolonged periods that UIP does not hold, there is little evidence against UIP over the long run.¹ Other studies, such as [Byers and Peel \(1991\)](#) and [MacDonald and Taylor \(1990, 1991\)](#), investigate whether UIP holds in historical samples. They examine currency forward markets during the period 1920–1926, when the British pound was off the gold standard, using one- and three-month forward prices documented by [Einzig \(1937\)](#) at the weekly frequency. A recent study by [Accominotti and Chambers \(2013\)](#) investigates the profitability of the carry trade using monthly data for eight currency forwards over the Interwar period 1920 to 1927 and 1932 to 1939, and conclude that carry trading was also profitable in these periods. [Dimson et al. \(2012\)](#) use a sample of 19 currencies over the period 1900 to 2011 and document a negative real excess return of –0.4 percent per year on the carry trade during the period 1900–1950.

Despite the existence of these papers on historical carry trading, the empirical evidence before the collapse of the Bretton Woods system is relatively scarce. Admittedly, today's currency markets function differently from those in the early 20th century. However, the differences should perhaps not be overstated, as [Einzig \(1937\)](#) documents active currency forward markets in several currencies in the late 19th and early 20th century.² These periods of active currency markets coincide with periods of financial globalization, but there have been several periods of reversals of globalization during the last century as well. Some of the carry trading strategies would have been difficult or even impossible to execute due to restrictions on the international movement of capital during several periods in history. Even today there are some capital restrictions that can make carry trading cumbersome. For example, currency convertibility restrictions require trading non-deliverable forward contracts with possibly different interest rates than the domestic interest rate. [Doukas and Zhang \(2013\)](#)'s results suggest that carry trading returns are larger for those currencies that have to be traded with non-deliverable forward contracts. The disadvantage of our analysis is that we do not have information on capital constraints prevailing in the long sample we investigate. Hence, for some years and some currencies, our analysis may be more of a thought experiment than an actual implementable trading strategy.

These arguments could be used against the insights of historical analysis on currency carry trading. However, one of the explanations put forward in the literature for the existence of profitable carry trades relates to rare events such as large currency crashes or changes in currency or monetary policy regimes. Extending the period of analysis to periods in which different currency regimes were present

¹ In addition, [Lothian and Taylor \(2000\)](#) investigate Purchasing Power Parity using more than 200 years of data.

² [Jobst \(2009\)](#) documents that exchange rate stabilization by the Austro-Hungarian Central Bank during the period 1896–1913 was much more modern than is sometimes recognized. For example, the central bank was engaging in carry trading using currency forward markets during the late 19th and early 20th century. [Einzig \(1937\)](#) documents that active forward markets existed in Vienna and Berlin in the 1880-s. Other forward exchange centres existed in Brazil, Chile, Japan, and Russia at the end of the 19th and beginning of the 20th century.

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