





Everything  
You Always  
Wanted  
to Know  
About  
the Carry  
Trade, and  
Perhaps  
Much  
More

by  
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Frankel**

## THE CARRY TRADE

About 10 years ago, the phrase “carry trade” made the leap from investment bank trading rooms to the Markets section of *The Wall Street Journal*. More recently, readers of high-end financial pages have been treated to assertions that the carry trade is “unwinding,” with consequences galore for international financial markets. My guess, though, is that the notion of the carry trade and its implications are still Greek to all but the most devoted consumers of financial news. If you’d like a translation, read on.

### SOME BASICS

The carry trade is the name of the strategy of going short (betting the foreign exchange value will fall) in a low-interest rate currency like the Japanese yen, while simultaneously

going long (betting the foreign exchange value will rise) in a high-interest rate currency like the New Zealand dollar. In the narrowest sense of the carry trade, the speculator borrows in yen, converts the proceeds to New Zealand dollars, and invests in securities denominated in those dollars. The New Zealand assets are the ones being “carried,” much as a Toyota dealer might carry an inventory of Camrys financed with a bank loan.

But that’s only the bare-bones definition of the carry trade. The speculator need not literally borrow anything: it still qualifies as the carry trade if he or she simply shuffles an asset portfolio, moving assets from the low-interest-rate currency into the high-interest-rate currency. In Japan, it is said that Mrs. Watanabe – shorthand for the typical woman in the street – has in recent years learned



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to play the foreign exchange market as a way of escaping the limited low-interest alternatives for investing that are available to her domestically. Indeed, a useful, still-broader definition of the carry trade would cover any investment strategy that involves shifting out of low-interest-rate assets and into anything else – like emerging-market debt, equities, real estate or commodities.

Note, too, that the low-interest-rate currency need not be the yen. Loans in Swiss francs have long been available at low interest rates, thereby engendering a carry trade of their own. Even the U.S. dollar and the euro have been available at low enough interest rates in recent years to finance a carry trade into the currencies of high-return countries including Australia, Brazil, Hungary, Iceland, India, Indonesia, Mexico, New Zealand, Russia, South Africa and Turkey. As a result, many of these same emerging-market countries, as well as the Persian Gulf states and others, are experiencing large money inflows and inflation, while real estate bubbles have appeared around the globe.

The carry trade also has implications for private investment strategies. Going short on low-interest currencies and long on high-interest-rate ones has paid off on average. But “on average” masks a world of hurt. The strategy produces big losses when the high-interest-rate currency (or equivalent asset) does in fact fall in value.

For example, we know well that those who

went long (that is, invested) in U.S. real estate financed by borrowing at low interest rates did badly once interest rates rose and housing appreciation ceased in 2006 and 2007. The same thing could happen with other highly visible asset plays. As of this writing (November 2007), anyone who is currently short yen and long in euros could be in for a big disappointment, in spite of the fact that the difference in interest rates between the two currencies is a whopping four percentage points.

## **DÉJÀ VU?**

This is not the first time the carry trade has driven currency markets. In the last big emerging markets boom (1990 to mid-1996), pundits explained that Asia, Latin America and the post-Soviet transition states were now good places to invest because free-market capitalism had decisively triumphed over central planning. But a trio of prominent economists (Guillermo Calvo, Leo Leiderman and Carmen Reinhart) offered a more prosaic explanation for the new enthusiasm.

Low returns in the rich countries, they suggested, were at least as important in explaining the capital flows to emerging markets as were the market reforms in the latter – and these flows could reverse if and when interest rates in the United States went back up. They were proven correct in 1994, when the United States raised interest rates and the Mexican peso crashed – an earlier instance of a reversal in the carry trade.

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By the mid-1990s, U.S. interest rates had recovered, but Japanese rates had fallen almost to zero. Now the carry trade generally meant borrowing or going-short in yen and long in anything with the word “dollar” in it – not just U.S. dollars, but Australian dollars, New Taiwan dollars and Hong Kong dollars. By the same token, investors went long in Korea, Thailand, and other Southeast Asian countries, where securities were available in U.S. dollars. When the world’s major central banks lowered interest rates again in the fall of 1998 (in reaction to contagious crises associated with Russia’s precipitous currency de-

marks, suggesting that perhaps financial markets had not yet fully gotten the point.

A lively convergence play called for going short in marks and long in one of the other currencies. This strategy paid off splendidly for a few years, as the speculators collected high interest rates without paying the penalty in exchange-rate depreciation.

Yet another early example of the phenomenon arose in the United States in the early 1980s. The high real interest rates produced by Reaganomics attracted capital from Japan and other foreign countries. For four years, from 1981 to 1984, investors long in the dollar and short in another currency made out

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preciation and the collapse of the Long Term Capital Management hedge fund) they injected new life into the carry trade.

Another earlier incarnation of the carry trade was in the “convergence plays” seen during the formative stages of European monetary integration. At the time of the Maastricht Treaty in December 1991, which set forth the obligations of prospective members in the monetary union, it seemed that the permanent fixing of exchange rates among the members’ currencies was at hand (to be followed by their eventual merging into the euro). Yet currencies like the Swedish kronor, Italian lira, pound sterling, Finnish markka and Portuguese escudo were still paying substantially higher interest rates than German

like bandits. Not only did they earn a substantial interest differential, but on top of that the dollar appreciated strongly.

### **CARRY (OUT) IS NOT ALWAYS A FREE LUNCH**

The strategy of investing where interest rates are high, to the exclusion of where they are low, might seem like a no-brainer. Certainly “chasing yield” has been a prime motivation for investors since the time of the earliest cross-border currency flows. But as is the case so often in finance, if it were always that easy to make money others would have already done so on a massive scale – and in the process would have “arbitraged” away the opportunity for profit.

In theory, if yen securities pay interest of only 1 percent and equivalent securities denominated in, say, Australian dollars pay 7 percent, the difference should represent the compensation that investors require to offset fears of depreciation of the Australian dollar against the yen. For simplicity, think of it as offsetting expected depreciation – that is, speculators’ best guess as to where the exchange rate is likely to go in the future.

In other words, if the Australian dollar investments pay 7 percent, it’s probably because speculators fear it will depreciate against the yen in the near future. If the Australian dollar turns out to decline in exchange value at a rate of 6 percent, nothing will have been gained by the currency play: 7 percent interest, less 6 percent depreciation equals a 1 percent return – the same return that could be had with a straightforward investment in yen. Of course, the Australian dollar may turn out to depreciate faster or slower than this, but that uncertainty is hardly an incentive in itself to go long in the Australian currency. The technical term for the condition under which the interest differential precisely offsets expected currency depreciation is “uncovered interest parity.”

Another name for what we are talking about here comes from the market in forward exchange – the big market in which parties agree to trade currencies at a fixed rate at some fixed date in the future. “Unbiasedness of the forward discount” means that an investor could not expect to make a profit by buying a currency today and simultaneously selling it in the forward market, because the difference between today’s exchange rate and forward market exchange rates exactly offsets expected appreciation. (“Uncovered interest parity” and “unbiasedness of the forward discount” amount to different names for virtually the same condition, because the forward

discount is equal to the interest differential; thus if one is an unbiased predictor then they both are.)

The only problem here is the massive evidence suggesting that, looking backward, interest rate differences haven’t reflected subsequent exchange rate movements. When one currency pays a high interest rate, it does not later, on average, depreciate correspondingly. If anything, the markets seem to behave per-



versely, with currencies that can be borrowed at low interest rates more often than not depreciating with respect to high-interest-rate currencies! Not only do those who hold a currency like the Australian dollar gain on interest, but more often than not they also gain through appreciation of the currency.

This conclusion is not just based on anecdotal evidence. There is also a huge collection of academic studies testing whether the interest differential – or equivalently, the forward discount – on average correctly predicts

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movements in exchange rates. The studies go back three decades, to the early years after most major governments stopped trying to fix exchange rates and began to leave currency pricing to markets.

Think about this strange result: one can expect to make money on average by shorting a low-interest-rate currency (the one selling at a forward premium) and going long in the



high interest rate currency (the one selling at a forward discount). This is called forward discount bias. The forward rate is not just a poor predictor of the future exchange rate, but a biased predictor. Only in developing countries with high inflation rates do currencies with high interest rates or high forward discounts tend to point the right direction (toward depreciation) – and even then, the bias does not fully disappear.

### WHEN THE CARRY TRADE GETS CARRIED AWAY

Each of the periods mentioned in which speculators earned high returns from the carry

trade ended with rapid reversals. In 1992, the upward pressure on the German mark vis-à-vis the Italian lira and British pound proved too strong, and the latter were forced to devalue. Thus, a winning convergence play abruptly turned into a big loser. In 1997 and 1998, Thailand, Korea, Indonesia, Russia and Brazil all underwent large devaluations against the dollar, bringing disaster to what had long been a successful carry trade in their currencies. And in just one week in 1998 (Oct. 4 to 10), the yen rose 16 percent against the dollar, thereby reversing years of profitable carry trade from shorting the low-interest-rate yen and going long into the higher-paying dollar.

The carry trade has been likened to picking up pennies in front of a steamroller. Most of the time the activity pays off. But every once in a while, the low-interest-rate currency undergoes a sudden appreciation, and anyone caught short is squashed.

What causes these reversals of the carry trade? Sometimes unforeseen events or new information regarding economic fundamentals leads investors to pull out of the high-interest-rate currency, or the carried asset, all at once. Examples include the early stages of the 1992 crisis in the European Exchange Rate System, political instability in Mexico in early 1994, and the subprime housing mortgage crisis in the United States in 2007.

But often the market reaction seems excessive, at best an overdue correction to unjustified enthusiasm in favor of the carried asset. Whatever one thinks of the economic fundamentals of East Asian economies in the 1990s, there was nothing in the way of new information in mid-1997 that could explain the timing of the collapse of Thailand's currency,

which triggered the Asia crisis. The carry traders themselves are often the very ones who lead the turnaround; this is the phenomenon known as unwinding the carry trade.

Sometimes, the reversal is triggered by a tightening of monetary policy in the low-interest-rate country – however necessary or well-intentioned the regulators' actions may be. Examples include the role of the Federal Reserve in helping to precipitate the international debt crisis of 1982, the role of the Bank of Japan in 1990 in setting off a five-year yen appreciation that tied the Japanese economy in knots, and the role of the Fed in helping precipitate the collapse of the Mexican peso in 1994.

#### **WHAT NEXT?**

What most people especially care about today, of course, is the recent carry trade and the prospects of its reversal. There can be little doubt that the easy credit policy of the Fed and the other major central banks, beginning in 2001, inspired movement into lesser currencies as well as a diverse range of other assets that share only the characteristic of being riskier than U.S. Treasury securities. Many economists (including me) have thought for the past three years that market perceptions of risk had fallen to irrational lows, as reflected in the low interest rates at which the governments of developing countries, unqualified American home buyers and high-risk businesses could borrow money. Carry traders, were literally carried away.

Another complementary explanation is that professional traders have been mindlessly plugging past measures of market volatility into their pricing models, rather than thinking afresh about potential risks. As we all know now, the underpricing of risk in mortgages ended abruptly in August 2007.

The big question is whether shoes will

drop in other sorts of assets. The Fed, the European Central Bank and the Bank of Japan are still setting interest rates at levels that make investments in (among other countries) Australia, Brazil, Hungary, India, Mexico, New Zealand, Russia, South Africa and Turkey seem attractive. As a result, the carry trade continues. And one real worry is the failure of a new convergence play: Hungary or other high-interest rate countries that are in line to join the European Monetary Union could be the source of the next currency crisis.

The most closely watched possibility is a reversal of the yen-dollar carry trade. The risk

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is substantial. What is hard to predict is whether the dollar will land hard – defined here as a landing in which the dollar's fall drags down the U.S. securities markets.

The Fed and the global financial markets have long been accustomed to viewing the dollar as the ultimate safe haven, where money goes when the going gets tough. But the United States now has a four-decade legacy of a declining dollar, in part attributable to high spending accommodated by easy credit from the Fed. (The biggest exception, of course, was the dramatic tightening of monetary policy in 1981 under the direction of Paul Volcker.) If Asians and oil exporters accelerate the transfer of their cash reserves from the dollar to the euro, the United States may finally lose its privileged safe-haven status – as did the United Kingdom over the first half of the last century. **M**