

Introduction

On March 19th, officials at the Bank of Japan (BOJ) declared that they will abandon a series of unconventional policies implemented to stimulate the economy and overcome its deflationary malaise. This decision marked the conclusion of a bold experiment, as they aimed to achieve sustained consumption-based measures of inflation of 2.0%.

For the first time since 2007, the bank has increased its policy rate objective on overnight loans, shifting it from a range of minus 0.1% to zero to a range of zero to 0.1%. This decision marks the BOJ's departure from its previous negative-interest-rate policy, making it the last central bank to do so.

Additionally, the central bank will cease its purchase of exchange-traded funds and eliminate its yield-curve-control framework, which serves as a mechanism to limit the yields on long-dated bonds. Nevertheless, the Bank of Japan emphasized that its position would continue to be accommodative: the removal a cornerstone in its suite of unconventional policies would not signal the start of a tightening cycle.

After the 2008 global financial crisis, the US implemented "unconventional" monetary policies, the distinguishing feature of which was that the central bank actively began to use its balance sheet to directly affect market prices and conditions beyond a short-term, typically overnight, interest rate.

Among these unconventional policies were large-scale asset purchases, negative policy rates and formal commitments to maintain a given policy stance (conditionally or unconditionally), otherwise known as forward-guidance as a policy setting tool. Large-scale asset purchases then commonly became synonymous with "quantitative easing" or simply, "QE".

In 2011, the European Central Bank also resorted to QE, raising the issue of the effectiveness of such policies. However, it was, in fact, the Japanese economy that provides the earliest case study of the efficacy of unconventional monetary policies, since its central bank was the first to resort to extended policy measures at significant scale in 2001. Injections of liquidity into the financial system, coupled with the zero lower bound in large economies gives investors in the foreign exchange (FX) market an incentive to exploit risk-free interest-rate differentials between sovereigns.

Japan case study

The housing market in Japan experienced a significant collapse in the early 1990s. The banking and housing markets have a strong inter-dependence. To provide economic stimulus, the Bank of Japan implemented a reduction in its policy rate to 0.5% in 1995 and subsequently to zero in 1999. Nevertheless, this measure was inadequate in reviving aggregate demand.

In March 2001, the Bank of Japan (BOJ) initiated the implementation of its QE programme, while maintaining a policy rate in close proximity to zero. The adjustment of the policy environment involved the modification of current account balances maintained by commercial banks at the BOJ, which exerted an impact on the economy through two distinct channels, often referred to as the "portfolio-rebalancing channel" and the "expectations channel".

The primary objective of the QE strategy is for the central bank to acquire long-dated assets (typically government bonds and mortgage-backed securities), with the intention of diminishing their prospective returns (reducing their yields) and thereby encouraging investors to re-allocate their holdings towards alternative assets from the corporate sector.

Ultimately, the purpose was to reduce firms' borrowing costs, thereby encouraging fixed-capital investment and fostering demand-led growth. This phenomenon became widely described in academic and practitioner circles as the "portfolio-rebalancing channel".

Through the mechanism of the "expectations channel", the central bank endeavours to decrease both short-term and long-term interest rate expectations (i.e. across the entire yield curve) to stimulate economic growth. Guiding the expectations for future borrowing costs down increases the propensity of economic agents to want to seek credit extension. The US economy had precisely the same situation in 2007: the global financial crisis commenced with the collapse of the housing bubble, prompting the Federal Reserve to lower its policy rate and initiate quantitative easing with a substantial infusion of liquidity.

QE policies are inherently advantageous for carry trades due to the near-zero interest rate and substantial infusions of liquidity. Both of these monetary policy mechanisms are particularly advantageous. Nevertheless, the outflow of capital results in a

devaluation of the “funding currency”. Hence, a predicament emerges: on one side, QE should stimulate the economy by means of portfolio re-balancing, but simultaneously, the outflow of capital results in the currency’s devaluation.

The dynamics of carry-trade strategies

Carry trades are typically investments in FX markets and the existence of excess returns in the FX markets are one of the more robust puzzles in international finance. It violates the axioms around uncovered interest parity (UIP) and the notion that the forward interest rate should be the rational market expected value of the future spot rate.

Essentially, the UIP condition states that the interest rate differential between riskless assets denominated in a foreign and domestic currencies is equal to the rate at which the foreign currency is expected to depreciate against the domestic currency. It is perhaps not surprising that many academic authors have focused on interest rate differentials in attempts to explain the existence of excess returns in the foreign exchange market. While several plausible explanations abound, exhaustive reconciliations remain elusive, and the prevailing literature is replete with such terms as the “UIP Puzzle” and the “Forward Premium Puzzle”.

As long as UIP holds, the outcome of investing in a high interest rate (high “carry”) sovereign is offset by the depreciation of that same currency, such that “arbitrage-like” returns are nullified. The seminal paper by Fama (1984) acknowledged that UIP does not hold in the short term. Accordingly, investors in the FX market are willing to exploit interest rate differentials by borrowing in low-yield currencies to invest in high-yield currencies. As Japan implemented QE, at a zero policy rate for several years, the yen was a key funding currency for carry trades over the past two decades.

By way of illustration, since the beginning of 2020, remarkably, a carry trade comprised of borrowing in yen and parking in the Mexican peso has made a far bigger profit even than an investment in the S&P 500.



Source: Bloomberg, March 2024

In fact, empirical evidence shows that currencies with high interest rates generally do not depreciate as much as the UIP phenomenon would imply. On the contrary, they often tend to appreciate. The reverse holds for currencies with low interest rates. Therefore, it is known to be profitable to invest in high-yield currencies by borrowing low-yield currencies or by buying the forward discount currency.

Carry trades are generally lucrative because investors who enter such a strategy are likely to make profits from two sources: the interest rate differential between the two currencies and the appreciation of the high-interest-rate currency that was originally bought at a forward discount.

As some academic studies have shown, carry trades are especially popular in periods of booming global financial markets when investors’ risk appetite is high and volatility is low, whereas during “bust” periods investors become more risk averse. Consequently, in “boom” times, carry trade activity helps to strengthen high-yield currencies whereas the sudden unwinding of positions during adverse market conditions causes the high-yield currencies to sharply decrease. Under adverse market

conditions, investors turn to low-interest-rate currencies, which they regard as haven currencies, thereby causing them to appreciate.

The most obvious explanation for the existence of excess returns is that carry trades are risky and hence the average excess returns include a risk premium. While risk-based explanations are common in the literature, there is a wide divergence of opinion on the extent of the risk. Theories, such as adverse selection problems between participants in the foreign exchange markets, have been put forward as explaining the forward premium puzzle.

For example, economic agent models have been presented in which adverse selection problems between market makers and traders rationalise a negative covariance between the forward premium and changes in exchange rates. They posit that as long as it is difficult to forecast exchange rates using public information and there are informed traders that make positive expected profits, then there must be a forward premium puzzle.

As an example, suppose, on the basis of public information, the British pound is expected to depreciate. Then uninformed traders (whose model relies on public information) are likely to sell the pound forward. It follows that, if the market maker receives a buy order, he attaches a high probability that the order came from an informed trader who expects the pound to appreciate. Consequently, the market maker quotes a high price for the buy order, that is, a high forward exchange rate. The forward premium (evaluated at the ask rate) is, on average, high when the pound depreciates. This model therefore captures the negative correlation that defines the forward premium puzzle.

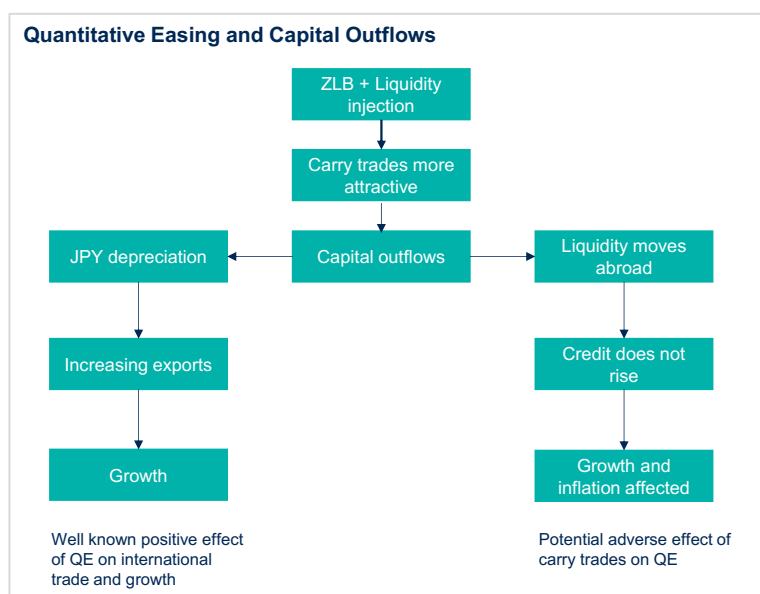
Back to Japan

After the 1999 announcement of the BoJ, FX market investors were informed that the Japanese interest rate would remain equal to zero until deflation ended. Hence, the interest differential between high interest rate countries and Japan would remain high. In this context, borrowing in yen to invest in high-yield currencies implied a high carry-trade gain (all else equal).

Moreover, QE policy would be a signal for investors in the FX market that it was the precisely correct moment to bet against UIP.

Over this period, excess returns of carry trades, were positive on average. Moreover, focusing on net future positions in the yen, we observe that they are mainly negative over this period, reflecting capital outflows. The economic intuition is that the central bank injects liquidity into the banking sector in order to boost credit and growth. However, part of this liquidity goes abroad through carry trades as illustrated by the diagram below:

Graph: Mechanism of unconventional monetary policy and the dynamics of the carry trade



Source: Chuffart, *International Economics 2020*

Focusing on the left side of the diagram, via liquidity injections capital outflows were accompanied by substantial depreciation of the yen which benefited the Japanese economy by making exports more competitive. As a matter of fact, the yen's depreciation is positively correlated with Japanese stock price indexes. By improving profits of Japanese exporting companies, the yen's depreciation enhanced substantial capital gains for Japanese companies with large external assets.

However, looking at the right side of the diagram, by increasing liquidity, QE policy invites carry trades and exports part of the liquidity injected by the central bank abroad, offsetting the positive effect on credit and growth. Accordingly, carry trades hamper the impact of QE on growth through the credit channel. It is worth noting that, after a delay, net positions in the yen increase, reflecting a well-known characteristic of carry investments.

Indeed, carry trade return increases gradually until investors decide to sell the high return currency. Accordingly, investors are long in the high yield currency until they expect a lower return. Then, investors sell the high yield currency. Because Japan is the source country (low yield currency), we observe the opposite effect. Investors are short in yen until they adjust their positions and become long.

Conclusion

The overall idea of this article was to briefly discuss how carry trades have adversely affected the efficacy of QE in Japan. By exporting liquidity, carry trades cancelled out the portfolio re-balancing channel, hampering the impact of the policy on growth. While implementing QE, a central bank buys long-term securities to reduce their yields and increase investors' incentive to buy assets benefiting the private sector. In so doing, borrowing costs decrease, and the propensity and attractiveness of fixed capital investment increases, raising aggregate demand and growth.

However, the empirical evidence suggests that investors in the FX market invested capital abroad. Accordingly, the much of the unconventional policy did not increase the incentive to buy corporate assets but rather foreign assets, cancelling the positive effect of the policy on growth. Overall, empirical evidence reveals that carry trades have hampered quantitative easing effectiveness in Japan by reducing the impact of the policy on aggregate demand.

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