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GLOBAL MACRO RESEARCH 30 YEARS IN CURRENCY MARKETS

MARCH 2023



BNY MELLON | INVESTMENT MANAGEMENT

IN 2023 INSIGHT WILL HAVE BEEN ACTIVELY MANAGING CURRENCY RISK FOR ITS CLIENTS FOR OVER 30 YEARS. OUR CURRENCY TEAM LOOKS AT THE INCREDIBLE CHANGES THAT HAVE OCCURRED IN CURRENCY MARKETS OVER THIS PERIOD AND HOW APPROACHES TO CURRENCY MANAGEMENT HAVE EVOLVED AS A RESULT.

EXECUTIVE SUMMARY

- As the world has opened up, there has been an explosion in cross-border transactions, from portfolio flows and trade to remittance flows and tourism, all contributing to ever greater currency market liquidity – dwarfing that found in both equities and bonds // 3
- With investors embracing a global opportunity set, currencies have become an increasingly important driver of investment returns // 5
- The strategies used for currency management have become more complex, evolving to deal with volatile capital flows // 7
- Currency markets are no longer just a potential source of risk or of alpha, but are increasingly used to add diversification // 10

THE SHORT HISTORY OF FREE-FLOATING CURRENCIES

BETWEEN 1944 AND THE EARLY 1970S, FIXED CURRENCIES WERE THE NORM

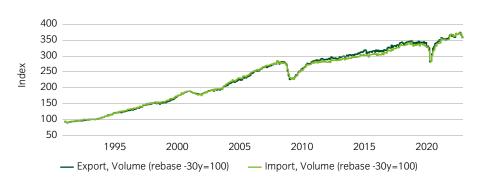
As we contemplate the simplicity of transacting between different currencies in the modern world, it seems hard to believe that currencies have only been free-floating since the early 1970s. In 1944, with World War II still being fought, representatives from 44 Allied nations met in Bretton Woods in the US and agreed to a system of fixed currencies that would become known as the Bretton Woods system. Under Bretton Woods, countries committed to convert their currencies at fixed rates to the US dollar, with foreign investors and central banks then able to convert their US dollars to gold at a fixed rate.

This changed in 1971 when President Nixon ended the convertibility of the US dollar into gold. With the system in disarray, the International Monetary Fund (IMF) called for the ten largest economies to come together to agree a way forward. Another deal was struck later that year – the Smithsonian Agreement, which saw the US dollar devalued by 8.5% versus gold. By 1973, the system had descended into chaos, with the US devaluing by a further 10% versus gold, before abandoning the Smithsonian Agreement and allowing its currency to become free-floating.

THE GLOBAL FINANCIAL SYSTEM HAS CHANGED ALMOST BEYOND RECOGNITION

Although globalisation was already in motion through the 1990s, the accession of China to the World Trade Organization in 2001 commenced a new era for global trade. Trade barriers were removed, and cross-border supply chains became the norm. The main beneficiary of this shift was China, which gained a significant market share in many manufacturing markets. World trade volumes surged (see Figure 1), with trade volumes in emerging markets doubling relative to their developed counterparts (see Figure 2).

Figure 1: Globalisation has led to a surge in global trade¹







^{1, 2} Source: Macrobond. Data as at 31 January 2023.



In addition to trade, the liberalisation of capital accounts has led to a boom in cross-country portfolio flows. Investors are no longer restricted to their domestic markets but can search for opportunities globally. At the same time, most large corporations are now multi-national by nature, with their scale increasing in line with their now global customer base. For the largest, market capitalisations now eclipse the GDPs of medium-sized economies.

As the world has opened, migration has increased, with workers from the developing world moving to fill labour shortages and take advantage of the higher wages available in developed markets. Remittance flows – migrant workers sending money home to help friends and family – have become an increasingly important international capital flow (see Figure 3). Competition for these transactions has led to technological solutions that have pushed down costs and added to market liquidity. Tourism has also become a major source of capital and driver of economic activity in some economies – but can also be volatile, as the pandemic clearly revealed. Rapidly growing numbers of outbound tourists from China were suddenly cut off during the pandemic as China imposed harsh lockdowns as part of their zero-COVID strategy (see Figure 4).

Figure 3: Remittance flows have grown significantly³

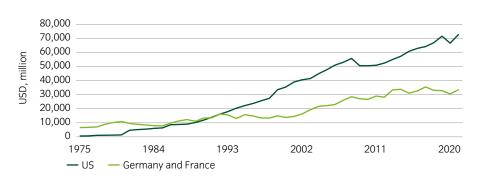
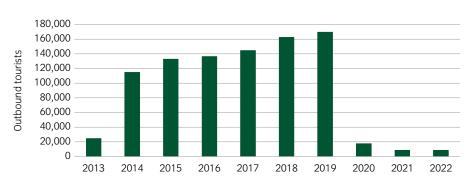
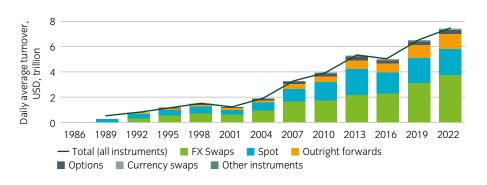


Figure 4: Chinese outbound tourism collapsed after COVID⁴



These factors have combined to catapult this relatively new asset class to become the largest and most liquid in the world. By 2022, daily turnover in global currency markets had reached close to \$8 trillion (see Figure 5) – a tenfold rise since the early 1990s. Liquidity in currency markets now dwarfs that found in both equities and bonds.

Figure 5: Turnover in global currency markets has just kept on growing⁵



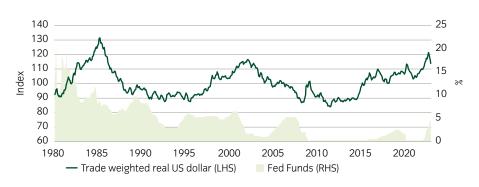
^{3,4} Source: Macrobond. Data as at 31 January 2023. ⁵ Source: Macrobond. Data as at 31 January 2023.

CURRENCY RETURNS HAVE BECOME A SIGNIFICANT DRIVER OF BROADER INVESTMENT RETURNS

THE US DOLLAR IS OUR CURRENCY, BUT YOUR PROBLEM

After a broad upward trend that started in 2011, the US dollar has climbed to multi-decade highs on an inflation adjusted basis (see Figure 6). Although suffering a minor setback into the end of 2022, it remains at levels not seen since the Volcker era, when former Fed Chair Paul Volcker took US interest rates up to 20%. This has started to cause discomfort around the world, and some central banks such as the Bank of Japan, have been forced to intervene to stem the dollar's rise – as famously couched by the former US Treasury Secretary, John Connally, in the 1970s by the phrase, "The US Dollar is our currency, but your problem".

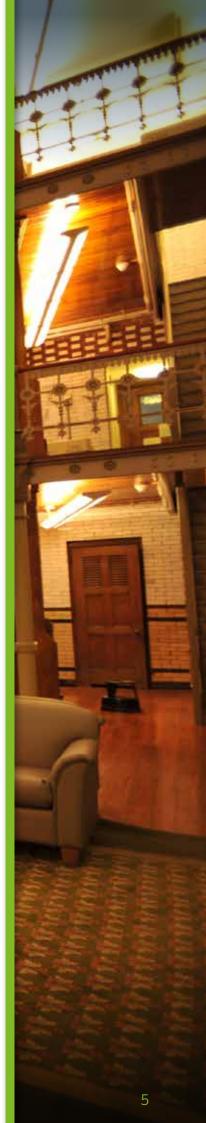
Figure 6: Trade weighted dollar is at the highest level since the 1980s⁶



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⁶ Source: Bloomberg, US Federal Reserve, 31 January 2023. Trade weighted US dollar is the US Fed Trade Weighted Real Broad Dollar Index.





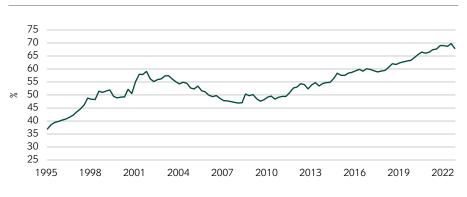
MAJOR EQUITY INDICES ARE NOW HEAVILY WEIGHTED TO THE US DOLLAR

The dominance of many US multi-nationals on the world stage, especially in the technology sector has, combined with the strength in the dollar, raised the market capitalisation of US equities relative to other markets. As at the end of January 2023, the weight of US equities within the MSCI World Index was close to 70% (see Figure 7), having increased from less than 50% just over a decade ago.

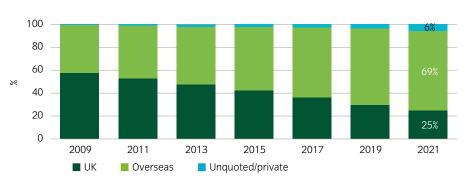
With investors in many markets increasingly shifting away from domestically biased portfolios to hold a basket of international equities, and many benchmarking against indices such as the MSCI World Index, this should have resulted in significant US dollar risk being added. For example, in the UK, pension funds held just 25% of their equity risk in UK listed equities at the end of 2021 (see Figure 8). Although the dollar's strength will have buoyed investment returns for those with unhedged exposures over the past decade, there is a risk that the dollar could become a significant headwind for returns if it weakens back to historical averages in the decade ahead.

Although US investors benefit from the dominance of US markets as it limits their need to invest overseas, international exposure is still notable at roughly 15% to 20%⁷ of total assets. As the trough to peak move in the DXY since the global financial crisis has been roughly 50%, it is clear that currency risk is meaningful even for US investors.

Figure 7: The market cap of the MSCI US Index is close to historical highs versus the MSCI World Index⁸







⁷ Source: Callan Market Pulse Q2 2022.

⁸ Source: Bloomberg, MSCI. Data as at 31 December 2022.

⁹ Source: https://www.ppf.co.uk/news/purple-book-2021.

SIMPLE STRATEGIES USED TO BE EFFECTIVE

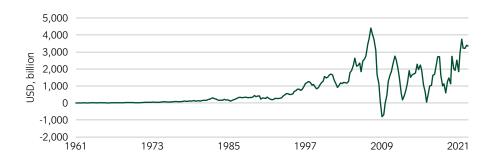
CARRY AND MOMENTUM WORKED WELL PRE-2008

Years ago, the most common way to approach currency investment was via simpler strategies such as carry and momentum. Investors would look for currencies with high interest rates and take a position in them relative to a currency with a low interest rate, seeking to extract the interest rate differential (or carry) over time. This type of trade became extremely popular in markets such as Japan, where Japanese retail investors would purchase currencies such as the Australian dollar to try to generate income given the zero-interest rate policy of the Bank of Japan. The alternative was to seek those currencies that were trending and try to take advantage of that momentum to profit from a continuation in the trend. Until the global financial crisis, these approaches were successfully used by many investors to generate returns in currency markets.

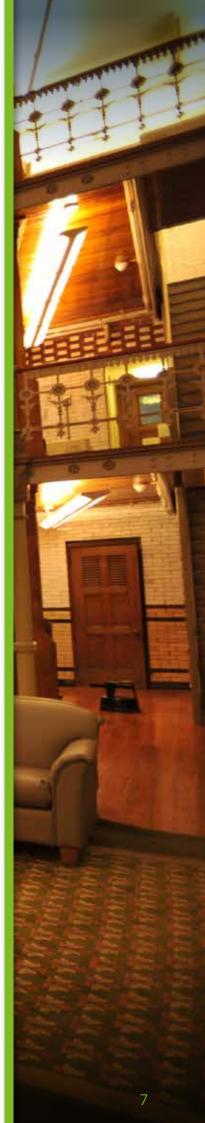
AFTER THE GLOBAL FINANCIAL CRISIS, CURRENCY MARKETS BECAME MORE COMPLEX

In an ever more global world for financial markets, capital mobility has gathered pace – flowing freely between countries in search of attractive investment opportunities. This came to an abrupt halt in the global financial crisis; the financial sector was forced to deleverage, and international capital flows experienced significant disruption. In the era of low yields and quantitative easing that followed, capital flows have continued to be highly volatile, perhaps best illustrated via the US financial account (see Figure 9).

Figure 9: After the financial crisis, global financial account flows have become more volatile¹⁰







THE SHIFT FROM SINGLE-FACTOR TO MULTI-FACTOR

WITH SIMPLE APPROACHES NO LONGER SUFFICIENT, THE APPROACH TO ACTIVE MANAGEMENT HAS EVOLVED

Active management has had to evolve to deal with the complex interplays between currencies, interest rates and international flows.

Although carry and momentum strategies still play a role in currency markets, most currency investors would now look at a broader range of factors to explain currency moves, combining a range of quantitative factors with macro-economic analysis to choose appropriate currency pairs to fit an investment view. A single factor approach has shifted to a multi-factor approach.

Core drivers of currency markets

Macro analysis

Discretionary macro analysis is carried out at a global and country level. Within individual countries, there is a focus on issues such as cyclical performance, structural imbalances and any special situations that could lead to event risk.

QUANTITATIVE FACTORS





Figure 10: Information Ratio (IR) per MSCI World monthly return¹¹

The benefits of this multi-factor approach can be clearly seen in the chart above. On the surface, the expected return of each individual factor is similar – they all have similar volatility adjusted returns. But, if we look at the behaviour against different market backgrounds – we define these backgrounds by classifying the performance of an international equity benchmark in different quartiles – we can clearly see the difference. The Carry factor clearly exhibits pro-cyclical behaviour as it returns the highest risk adjusted returns when equity markets are very strong and the worse when equity markets are weak. The Quality factor is the opposite, while the volatility factor appears to have no correlation whatsoever with the market background. Indeed, carefully crafting building blocks so that they are clearly defined, firmly grounded in sound economic rationale and uncorrelated with each other is a powerful way to construct a portfolio that can be expected to withstand volatile and ever-changing market conditions.

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¹¹ Source: Insight and Bloomberg. The information ratio for each signal is simulated assuming transaction costs and implemented on the portfolio assuming a specified risk target without taking into account any fees. Performance is sorted into quartiles based on returns of the MSCI World Index as a proxy for global risk conditions. MODEL RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, MODEL RESULTS DO NOT REPRESENT ACTUAL TRADING/RETURNS AND MAY NOT REFLECT THE IMPACT THAT MATERIAL ECONOMIC/MARKET FACTORS MIGHT HAVE. CLIENTS' ACTUAL RESULTS MAY BE MATERIALLY DIFFERENT THAN THE MODEL RESULTS PRESENTED.





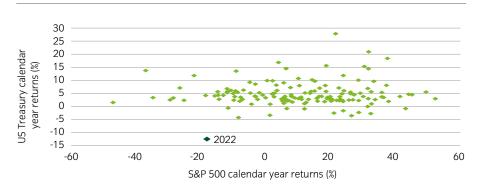
MORE TARGETED SOURCE OF DIVERSIFICATION

TRADITIONAL SOURCES OF DIVERSIFICATION MAY NO LONGER BE AS RELIABLE IN FUTURE

During the global financial crisis, major central banks introduced quantitative easing, or bond purchase programmes, to their policy toolkits. This started a process that led to the suppression of government bond yields around the world, with the response to the pandemic further fuelling this trend.

Soaring inflation forced central banks to reverse this policy in 2022, pushing government bond yields higher in their battle against inflation, which in turn caused most equity markets to decline sharply. The traditional role of bond markets as a diversifying asset to equity risk broke down as both markets experienced significant price declines (see Figure 11).

Figure 11: 2022 – A particularly bad year for bonds and equities (S&P 500 Index vs US Treasury returns $(1872 - 2022)^{12}$



Although higher yields should provide greater scope for historical relationships between bond and equity pricing to reassert themselves, experiences through this period have left some managers looking beyond bond markets for alternative sources of diversification. Currency-based strategies that seek to either take advantage of the relationship between currency markets and other asset classes or generate returns independently can fulfil this role – potentially adding alternative sources of diversification in a world where traditional assets may no longer be so reliable in the future.

THERE IS A STRUCTURAL BIAS TOWARDS USD STRENGTH DURING RISK-OFF EVENTS

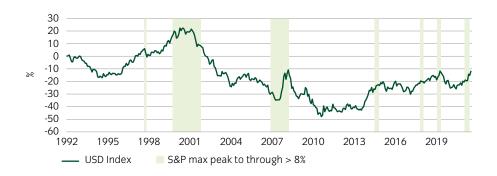
Perhaps the best example of how currency markets can be used to add diversification can be shown by the behaviour of the US dollar during risk-off events, which are often characterised by investors reducing risk and repatriating investments. The US dollar (USD) is one of the key currencies in these environments, in part because of its reserve currency status and high liquidity. The USD 'safe-haven' risk premia has been extensively documented in academic literature (see e.g., Maggiori (2013) US Dollar Safety Premium¹³). The resulting strengthening of the USD versus a basket of currencies during risk-off events is structural and particularly elevated during times of significant market stress.

¹³ M. Maggiori (2013) The U.S. Dollar Safety Premium, AFA 2013 San Diego Meetings Paper https://www.dallasfed.org/~/media/documents/institute/events/2013/526Maggioripaper.pdf

¹² Source: Insight as at 31 December 2022.

We illustrate this in Figure 12, which shows the performance of an equally weighted basket of a long US dollar position against a basket of nine developed market currencies (which we have called the USD Index). Against this we have highlighted periods where there are significant downturns in the S&P 500 Index, and the US dollar strengthens in each of these episodes historically.

Figure 12: The USD has historically performed well during periods of significant drawdown in the S&P 500 $\rm Index^{14}$



DIFFERENT FACTORS CAN HAVE VERY DIFFERENT CORRELATIONS WITH RISK ASSETS

This relationship can be demonstrated most effectively when we examine the different factors that can be used to explain currency moves that we outlined earlier. In Figure 13, we can see that each of these factors has historically varied significantly in terms of information ratios and correlations with a traditional 60%:40% equity/bond mix. Factors based on inefficiencies related to currency market participant behaviour (such as Value) have low correlations while Carry, as a pro-cyclical factor, has a much higher correlation. Quality is a more defensive factor and has an inverse correlation. By taking advantage of these variations in expected returns during different market conditions, investors can potentially add significant diversification benefits with the additional of an active currency strategy to their portfolios.

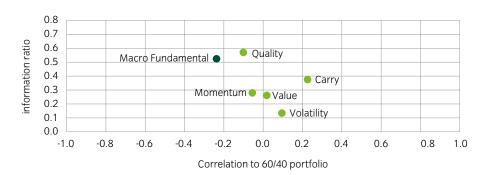


Figure 13: Information ratio and correlation of different currency factors versus a 60%:40% equity/bond mix¹⁵



¹⁴ Source: Insight and Bloomberg. Data between 31 December 1992 and 30 June 2022. The USD Index returns are simulated and calculated assuming an equally weighted basket of G-9 currencies (EUR, JPY, GBP, CHF, CAD, AUD, NZD, SEK, NOK) vs. USD gross of any fees and not taking into account any transaction costs. The shaded S&P 500 Index drawdowns represent periods where the S&P 500 Index (sourced from Bloomberg) experienced peak to through drawdowns of greater than 8% from the start of the drawdown to its maximum point, sampled at month end intervals.

¹⁵ Source: Insight and Bloomberg. The information ratio for each signal is simulated assuming transaction costs and implemented on the portfolio assuming a specified risk target without taking into account any fees. The 60%:40% equity/bond mix is based on a 60% weight in the MSCI World Index and a 40% weight in the Bloomberg Global Aggregate Index, reweighted monthly between January 1993 to August 2022. Model results have certain inherent limitations. Unlike an actual performance record, model results do not represent actual trading/returns and may not reflect the impact that material economic/market factors might have. Clients' actual results may be materially different than the model results presented.

CONCLUSION

Many modern-day investor's view today's currency markets, with their vast depth and fluid transactions, as the norm. But it is important to view markets through the lens of history, as this relatively new asset class continues to evolve. Although approaches to currency management have become increasingly sophisticated, not all investors are at the forefront of this. Some remain stuck in history, pursuing simplistic strategies. However, a focus on simple strategies such as carry may do little to help with portfolio diversification. Carry strategies tend to perform well when risk assets are trending upwards, but underperform significantly during market corrections, exacerbating portfolio volatility.

With a deeper understanding of what is driving currency markets, a range of different strategies can be utilised. For those investors able to take tactical positions, currency markets are not simply a potential source of alpha but are emerging as a new tool to diversify portfolios. Relative value trades offer potential opportunities to generate alpha uncorrelated to other asset classes, while the attributes of some currencies allow them to potentially benefit when risk assets turn downwards.

Whatever approach is taken, it is hard to argue that currencies have not had a significant impact on broader asset returns and will continue to do so in the future. As investors increasingly seek a global opportunity set, the risks and opportunities stemming from currencies are a natural companion on this journey. If ignored, investors may become hostage to concentration risk within global benchmarks. If embraced, currency markets can offer a powerful tool in the pursuit of alpha, adding diversification benefits that potentially improve risk-adjusted returns.

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