Deloitte.

Plugging the leaks in implementing currency hedging

Investment decisions on currency hedging are often focused on optimising the hedge ratio and strategy decisions based on forecast movements in exchange rates, expected valuation, expected interest rate differentials and other risk factors. The implementation considerations of currency hedging appear to have been relegated over time. In a low return global macroeconomic environment, superannuation funds should focus on how to best implement their currency hedging programs to minimise slippage and improve investment outcomes for members.

The sell-side's focus on spot forecasting, minimising self-executed transaction costs, targeting hedge funds and high turnover speculators, has led to blind spots and leaks in the buy-side implementation process that could be mitigated through a better understanding of currency as a risk asset class. In this article **Jason Foo** highlights critical implementation and risk considerations that are often misunderstood by buy-side firms, including asset managers and superannuation funds, as they set about fulfilling their fiduciary responsibilities.

Risk management is central to managing an effective currency hedging program

The decision to internalise or outsource currency hedging implementation is more often than not influenced by direct management fees. We argue that buy-side firms should consider whether they have strong derivatives and operational risk management experience and expertise internally. Poor controls in managing interactions between the custodian, transition managers, trade counterparties and investment managers could result in significant and of course unintended market risk.

Figure 1 (see over)identifies all the factors that should be considered in a currency hedging program. Each area needs to be managed with strong governance, risk management, experienced personnel, and robust systems. Superannuation funds should strive to minimise slippage in transaction costs, exposure mismatch, timing lags and hedge ratio deviations, as well as maximise interest differentials and currency basis opportunities.

Credit and liquidity risk considerations in managing currency derivatives

Credit risk is inherent in any bilateral derivative contracts, which can be significant due to the relatively large transaction volumes in currency hedging programs. Bilateral Credit Support Annexes (CSAs) attached to International Swaps and Derivatives Association (ISDA) master agreements are intended to minimise the risk of loss given default. However, entering into CSA agreements introduces daily liquidity risk and results in the need to manage collateral and maintain short-term liquidity reserves. On the other hand, holding excessive cash can be a drag on investment returns.

In the event of significant market movements, investments may have to be liquidated to meet collateral obligations within a short period of time if liquidity reserves are inadequate. Strong correlation between growth assets and the Australian dollar exacerbated this problem for superannuation funds during the 2008 global financial crisis. The trade-offs and appetite for credit, liquidity and operational risks are therefore important considerations in developing the process flow and determining risk guidelines for internal or external currency hedging mandates.

Implementation and execution leaks are significant

In an ideal world, or perfect hedging, investors want to achieve local currency returns on their globally invested portfolio. They also want to take advantage of the interest differentials between local and foreign currencies. Alexiev, Fenty and Moore, in Currency Hedged Benchmark Replication: Challenges and Improvements (2011) classified the deviation from the perfect hedging (measured by the difference between the index performance in local and foreign currencies) into three categories:

1. Market-driven slippage
(asset value uncertainty and interest differentials). Slippage due to index appreciation or depreciation unhedged until the hedge is adjusted is one form of market driven-slippage. Frequent rebalancing can minimise market-driven slippage.

2. Implementation slippage
(transaction costs, timing lags and hedge ratio deviation). Slippage due to time taken to disseminate portfolio valuation to the hedging agent and transaction costs associated with the difference between the executed price and the mid-price prevailing at the time of execution.

3. Fund-related slippage due to unrealised profit and loss effect and impact from investor cash flows.

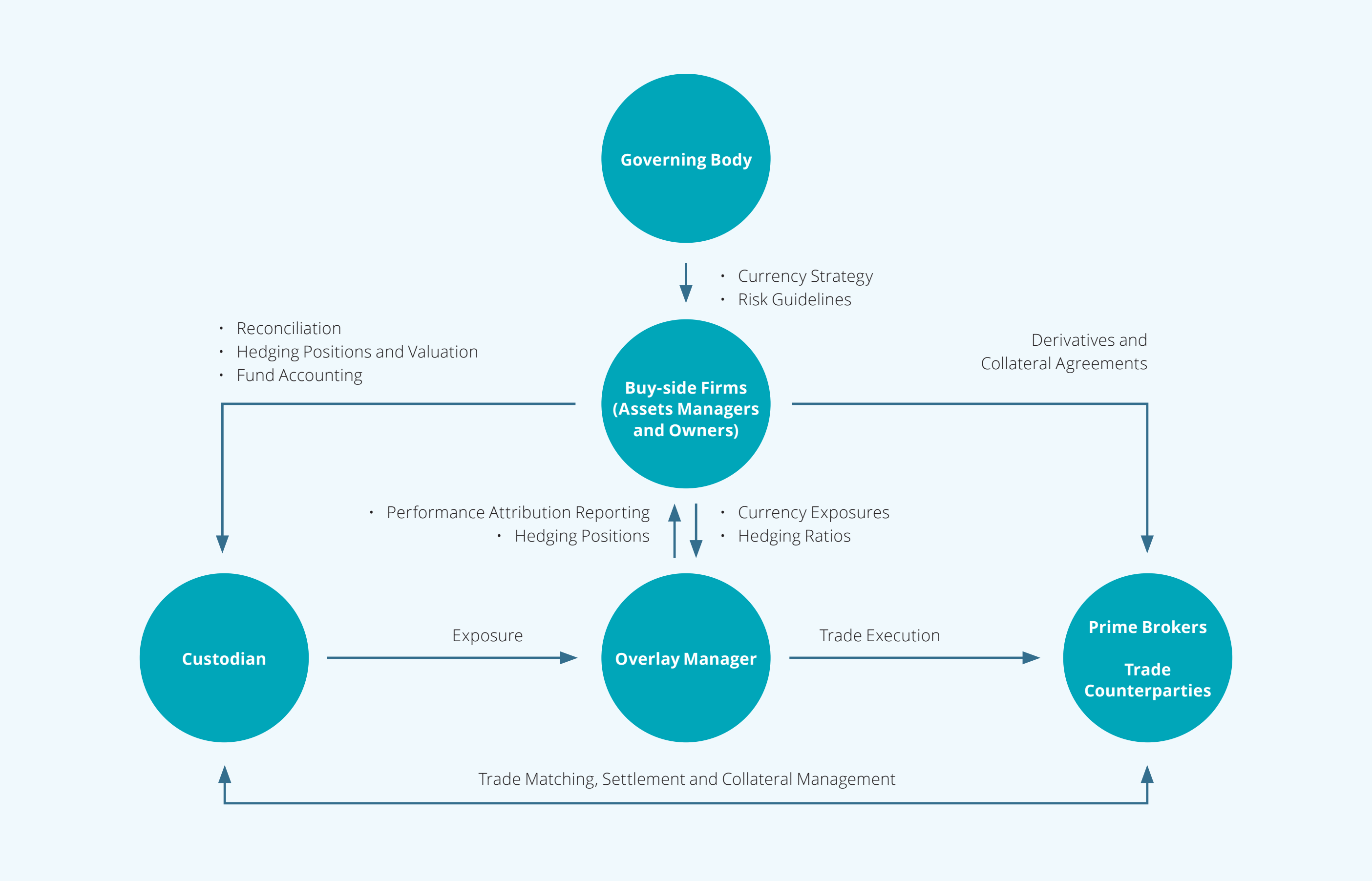

Figure 1: Managing operational risks in different parts of the process is critical.

i. Execution Leakages

Execution leaks, from wider execution prices or trading at outlier rates received significant attention due to scandals of rigged wholesale markets and law suits against custodian banks. Execution leaks due to hidden implicit costs can lead to lower long terms investment outcomes. If monthly rebalancing cost (based on the assumption that 3% to 4% of the MSCI index basket requires rebalancing monthly) and 5 basis points per rebalance, and the cost of rolling forwards quarterly, is between 1.5 to 3.0 basis points, then asset owners should expect to incur implicit transaction cost between 25 to 50 basis points p.a.

The crowding effect takes place at a specific time, e.g. 4.00 PM London at the end of each month when most investors perform passive rebalancing. This can magnify leaks from rebalancing and can double implementation costs. The implicit cost is significant and therefore buy-side firms that tend to focus on negotiating the lowest possible management fees for passive overlay mandates, should focus on attributing execution outcomes and adopt a holistic approach in assessing the cost of currency overlay implementation.

Currency basis should be consciously managed

Cross currency basis spreads between cash flows in two different currencies widened significantly after the financial crisis, resulting in currency basis risk. Depending on the level of liquidity and volatility in the market, basis spreads can have a significant impact on hedging outcomes.

The volatility in cross currency basis should be monitored by managers and asset owners who have the ability to implement shorter or longer rolls during supply/demand market dislocations. Asset owners with long-term investment holdings should consider adopting a policy to manage this risk and determine whether longer-term hedges are appropriate to lock in cross currency rates when the opportunity arises.

How MiFID[1] can help

Best execution measurement and compliance monitoring (through transaction cost analysis) are requirements under MiFID II, and the practice is being adopted in other jurisdictions. MiFID II requires asset managers to monitor compliance with best execution on an ongoing basis and demonstrate compliance with best execution to clients. Market participants have developed approaches to systematically monitor best execution for trading in currency markets.

The practice of obtaining competing quotes provides limited context to assess a trade and the best of three quotes from dealers or multi dealer platforms may not achieve best execution[2].

Sparks, ITG 2015 suggested that leading edge practices in monitoring execution leakages include daily measurement of execution outcomes using timestamps of mid rates, and assessment of execution strategies in respect of factors such as price, trade size and execution speed.

1. The Markets in Financial Instruments Directive (MiFID) is the framework of European Union (EU) legislation for: investment intermediaries that provide services to clients around shares, bonds, units in collective investment schemes and derivatives (collectively known as 'financial instruments') and the organised trading of financial instruments.
2. Michael Sparks, 2015 Multi-Asset Best Execution and MiFID II

The ambiguity of principal and agency trading definitions, and the evolution of the hybrid model is putting execution outcomes under the microscope.

Punitive fines and penalties against global custodian banks for misleading mutual funds and other custody clients by applying hidden mark-ups to foreign currency exchange trades, reinforce the need for buy-side firms to actively manage and monitor currency hedging implementation.

In the dismissal of a pension fund's class action lawsuit against a global investment bank in July 2013, the court pointed out controls that could have been implemented by buy-side frim to protect against unreasonable rates and continuously monitor execution outcomes[3].

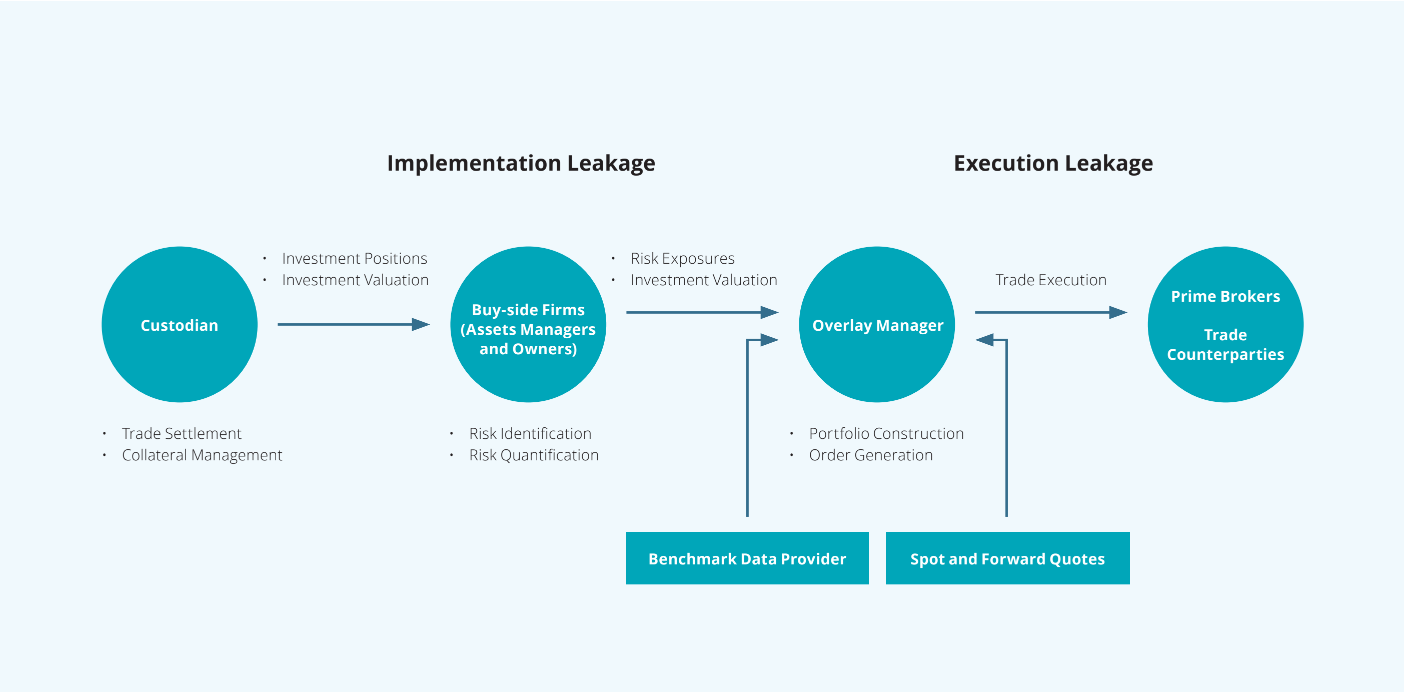

Figure 2: The slippages are classified into implementation and execution leaks, as illustrated in the process flow.

ii. Implementation Leakages

Slippage due to investment value uncertainty can be controlled or mitigated. Buy-side firms can have significant exposure to basis risk. These are risks where the derivative performance deviating from the currency movement of the underlying asset could result in significant performance leakage. This exposure is due to poor controls over risk measurement and frequency of rebalancing. Decisions regarding risk measurement, investment valuation, frequency of rebalancing, frequency of cash flows, rebalancing ranges, timeliness of rebalancing, proxy hedging and currencies to be hedged are important considerations to minimise unintended market exposure and implementation leakages.

Infrequent quantification of risk exposures which led to over or under hedged positions relative to the target hedge ratio

- To minimise market-driven slippage, currency exposures in the underlying investment portfolio should be measured in real time or at least with a day lag. Global events that drive significant volatility such as Brexit, could cause investment risk exposures to breach rebalancing ranges and hedges to deviate from the target hedge ratio for a substantial period before the next scheduled rebalancing. In current markets, with daily unit pricing, daily cash flows, real time investment valuation based on published proxies, increased daily volatility and market uncertainty, weekly or monthly rebalancing or monitoring are inadequate to manage currency risk.

- Transition of investment portfolios denominated in foreign currencies and rebalancing of currency hedges should be implemented simultaneously. If currency hedges are rebalanced based on custodian data one or two days after the transition, currency exposures could lead to unintended market risks.

Measuring risk exposures of unlisted investments from custodian data

The measurement of currency risk for unlisted investments requires meticulous and diligent assessment to reduce the likelihood of the unknown risk exposures. Implementation leakages could result from hedging currency exposures reported by custodians without understanding the investment data provided by external managers to the custodian. Controls should be implemented to validate whether currency risk of unlisted investment trusts is managed on an unhedged basis and hence fully exposed to local currency movements.

3. Leanna Orr, 2013 FX, Lies, and Marked-Up Rates (http://www.ai-cio.com/channel/REGULATION,_LEGAL/FX,_Lies,_and_Marked-Up_Rates.html)

Hedging actual portfolio versus benchmark currency weights

The decision to hedge currency weights or benchmark weights (in the example of currency hedging for equity portfolios) depends on whether the investor wants to eliminate the aggregated active currency weights from the equity manager's stock selection decisions. If the investor believes that the equity manager could generate additional alpha from taking active country or currency positions, then hedging should be implemented based on benchmark currency weights.

Hedging based on proxy currency baskets

Due to pricing, liquidity or access issues, the use of proxy hedging makes hedging strategies more manageable and less costly to implement for certain currencies. However, the proxy currency baskets should be assessed frequently to determine if proxy currencies remain appropriate, and the correlation of the proxy and underlying currency will converge during the hedging period.

Proxy hedging could result in slippage of up to 30 basis points in any given month, due to breakdown in correlation between the proxy currency and the underlying currency exposure. Sources of return from proxy hedging should be tracked and monitored to identify structural divergence in the correlation between currencies or central bank decisions not to peg their currencies against a developed market currency. Buy-side firms should set quantifiable return and risk metrics that align to the broader portfolio return and risk objectives, to measure the contribution of currency hedging to the overall portfolio.

Bringing it all together

Currency implementation should be subject to strict governance and oversight, independent attribution and risk controls, robust credit, liquidity, operational risk management and ongoing due diligence of outsourcing arrangements. Buy-side firms must set quantifiable return and risk metrics that align to the broader portfolio return and risk objectives to measure the contribution of currency hedging to the overall portfolio.

The Bank of Institutional Settlements (BIS) in a recent publication reported a contraction in foreign currency derivatives trading for the first time in fifteen years due to a significant drop in trading for risk taking purposes. The paper reported an increase in the volume of trading for hedging and liquidity management purposes indicating a change in the composition of market participants and major changes in liquidity conditions that could significantly impact implementation of currency hedging strategies for buy-side firms.

To the point

- The trade-offs between credit, liquidity and operational risks are important considerations in developing the process flow, selecting duration of hedging contracts and risk guidelines for internal or outsourced currency hedging program.

- Monitoring outcomes through daily measurement of execution (using timestamps of mid rates or transaction cost analysis) is important to minimise execution slippages.

- Implementation slippages due to mismatches in exposures can be mitigated through disciplined risk measurement, portfolio valuation, rebalancing and proxy hedging practices.

- Currency hedging implementation should be subjected to strict governance and oversight, independent attribution and risk controls and ongoing due diligence of outsourcing arrangements.

- Buy-side firms should set quantifiable return and risk metrics that align to the broader portfolio return and risk objectives to measure the contribution of currency hedging to the overall portfolio.

Jason Foo is a Director in the Investment Advisory team at Deloitte where he provides specialist advisory services to institutional investors and global asset managers. He provide insights to the Board, and senior management of investment and wealth organisations, bringing a deep understanding of capital markets, derivatives, investment risk, and regulatory compliance.

+61 2 9322 3354 **jafoo@deloitte.com.au**

This publication contains general information only, and none of Deloitte Touche Tohmatsu Limited, its member firms, or their related entities (collectively the "Deloitte Network") is, by means of this publication, rendering professional advice or services. Before making any decision or taking any action that may affect your finances or your business, you should consult a qualified professional adviser. No entity in the Deloitte Network shall be responsible for any loss whatsoever sustained by any person who relies on this publication.

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee, and its network of member firms, each of which is a legally separate and independent entity. Please see www.deloitte.com/au/about for a detailed description of the legal structure of Deloitte Touche Tohmatsu Limited and its member firms.

About Deloitte

Deloitte provides audit, tax, consulting, and financial advisory services to public and private clients spanning multiple industries. With a globally connected network of member firms in more than 150 countries, Deloitte brings world-class capabilities and high-quality service to clients, delivering the insights they need to address their most complex business challenges. Deloitte's approximately 244,000 professionals are committed to becoming the standard of excellence.

About Deloitte Australia

In Australia, the member firm is the Australian partnership of Deloitte Touche Tohmatsu. As one of Australia's leading professional services firms. Deloitte Touche Tohmatsu and its affiliates provide audit, tax, consulting, and financial advisory services through approximately 7,000 people across the country. Focused on the creation of value and growth, and known as an employer of choice for innovative human resources programs, we are dedicated to helping our clients and our people excel. For more information, please visit our web site at www.deloitte.com.au.

Liability limited by a scheme approved under Professional Standards Legislation.

Member of Deloitte Touche Tohmatsu Limited.

© 2017 Deloitte Touche Tohmatsu.

MCBD_City_11/17_055227