PLUGGING THE LEAKAGES IN THE IMPLEMENTATION OF CURRENCY HEDGING

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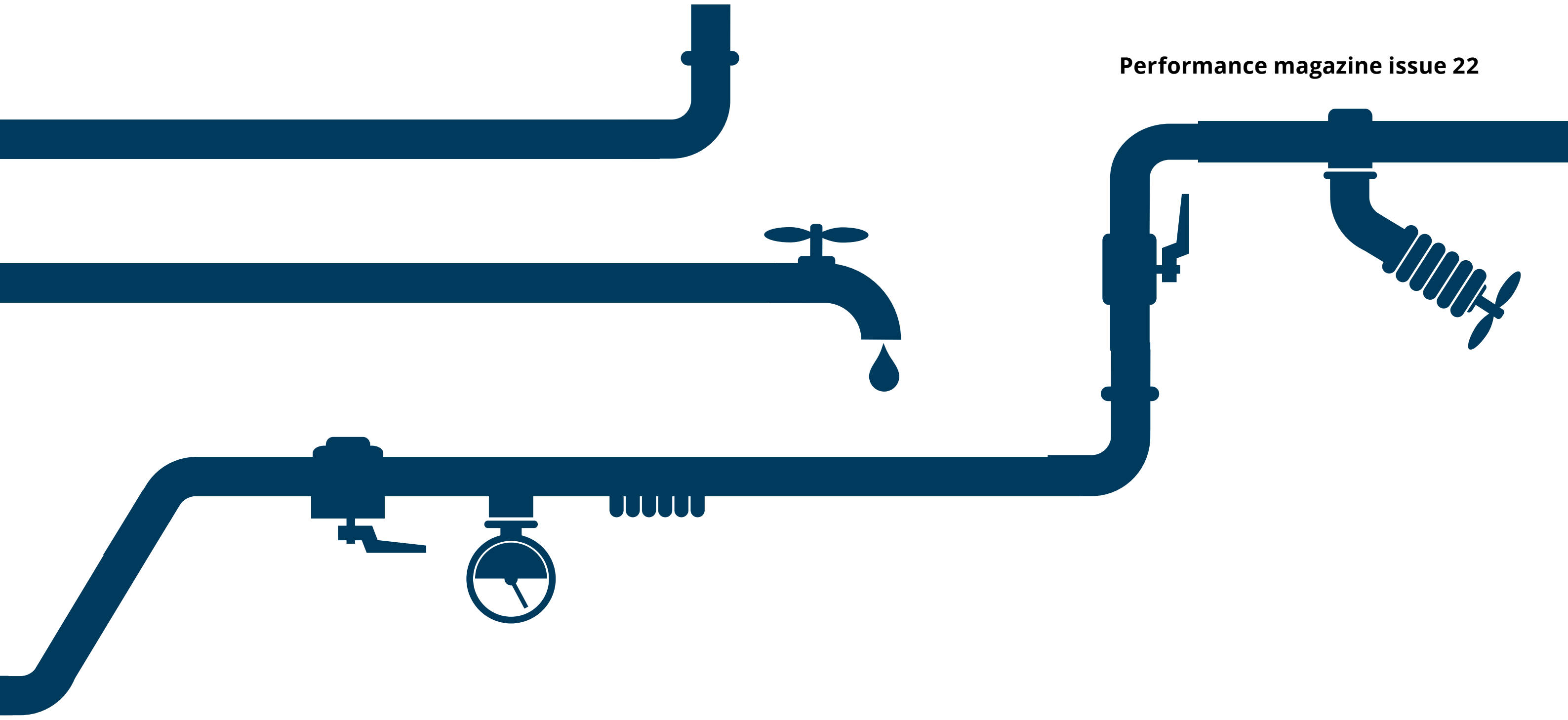


There is much conjecture in the asset management industry over whether to hedge currency exposures, the percentage to be hedged, and how to best implement currency hedging programs. Most asset owners focus on managing the volatility of the underlying investments, and the implementation considerations of currency hedging appear to have been relegated over time.

Buy-side firms often separate the management of currency risk from asset allocation and security selection decisions and therefore manage currency hedging implementation as a separate operational process. This can result in implementation blind spots. Most buy-side firms focus their efforts on optimizing the hedge ratio and strategy decisions based on forecast movements in exchange rates, valuation, interest rate differentials, and other perceived risk factors.

The sell-side's focus on spot forecasting, minimization of self-executed spot transaction costs, targeting hedge funds, and high turnover speculators have resulted in blind spots and leakages in the buy-side implementation process that could be mitigated through a better understanding of currency as a risk asset class. This article highlights critical implementation and risk considerations that are often misunderstood by buy-side firms in fulfilling their fiduciary responsibilities.

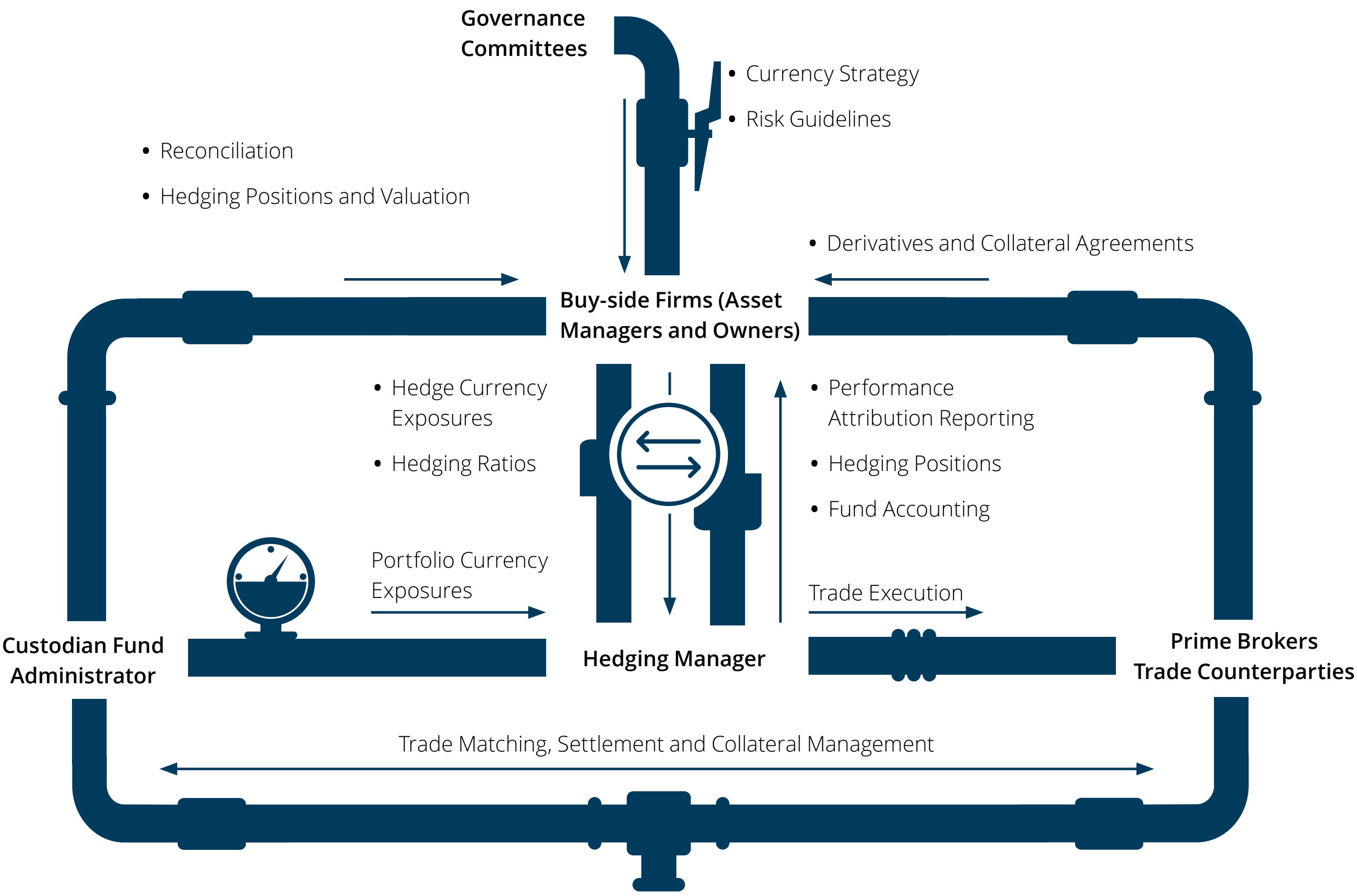
Risk management is central to managing an effective currency hedging program

The expertise and resources required to manage the execution, settlement, and collateral management of currency derivatives, and regulatory imposts should not be underestimated, if asset owners are considering implementing currency hedging processes in-house. The decision to internalize or outsource currency hedging implementation is often influenced by direct management fees. Buy-side firms should consider whether the organization possesses strong derivatives and operational risk management experience to develop internal currency implementation capabilities. Robust systems are required for constructing hedging portfolios, generating orders and executing trades. If not implemented appropriately it can result in significant implementation and execution leakages. Failure to put strong controls in place to manage interactions between the custodians, trade counterparties, and hedging managers could result in significant unintended market risk.

The following diagram identifies the myriad factors to be considered in a currency hedging program. Each area needs to be managed with strong governance, risk management, experienced personnel, and robust systems. Experienced personnel is important to minimize slippage in transaction costs and maximize interest differentials, and currency basis opportunities. Robust systems are required to minimize slippage from exposure mismatch, timing lags, and hedge ratio deviations. Having access to accurate performance and attribution reporting is fundamental to identify and remediate sub-optimal performance.

Robust systems required for constructing hedging portfolios, generating orders and executing trades.

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



Credit and liquidity risk considerations in managing currency derivatives

Credit risk is inherent in any bilateral derivative contract, which can become significant because of the relatively large volumes in currency hedging programs. Bilateral credit support annexes (CSAs) attached to International Swaps and Derivatives Association (ISDA) master agreements are intended to minimize 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.

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. The liquidity situation could be exacerbated if the currency hedged has a strong correlation with the investments that can be liquidated to fund settlement of the hedges because the investments are being liquidated at the worst possible time. This was especially acute for Australian-based investors with a significant holding in illiquid investments during the 2008 financial crisis.

The management of liquidity risk can in turn result in additional operational burden and be a drag on fund returns.

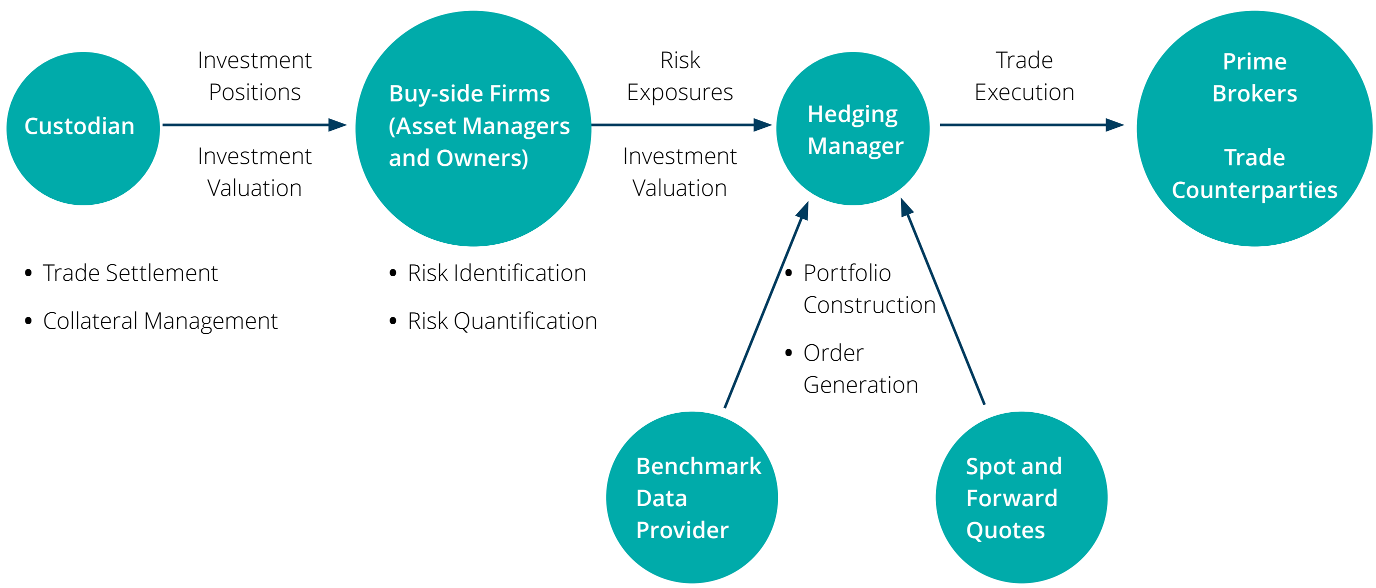
The trade-offs and appetite for credit, liquidity, and operational risks are important considerations in developing the process flow, selecting duration of hedging contracts and risk guidelines for internal or outsourced currency hedging mandates.

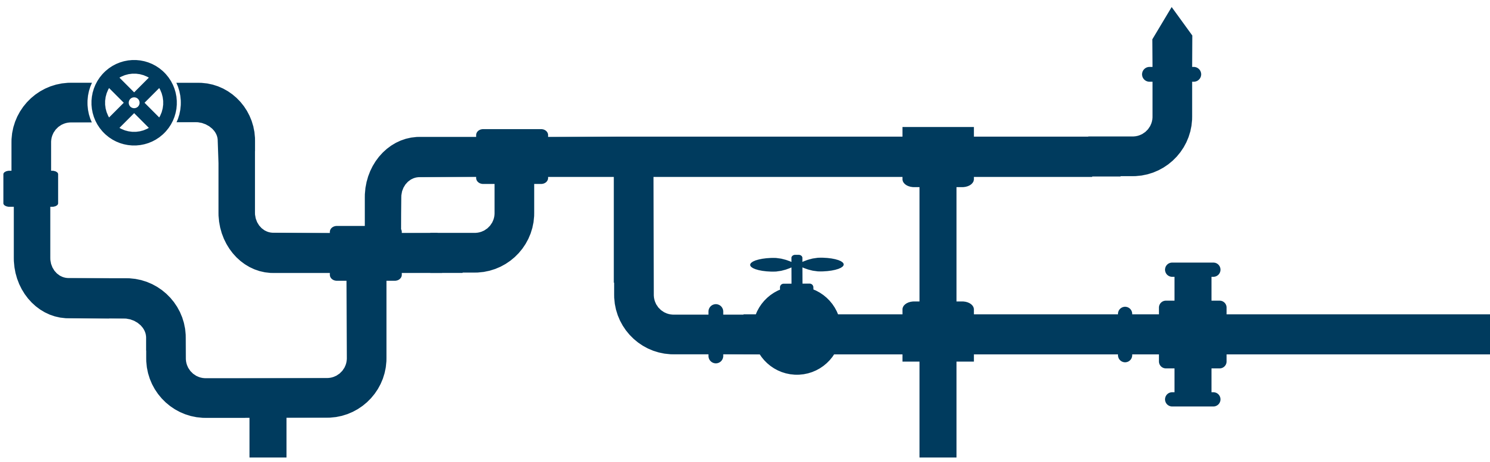
Implementation and execution leakages are significant

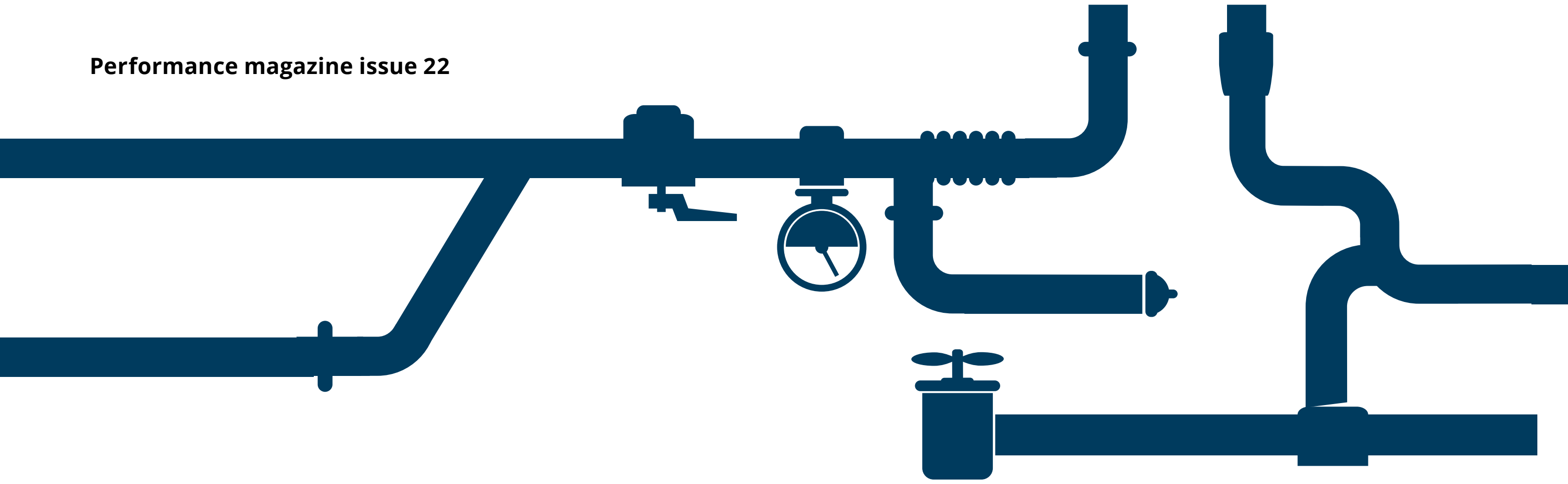
In an ideal world of perfect hedging, investors want to achieve the local currency returns of the globally-invested portfolio and take advantage of the interest differentials between the local and foreign currencies. Alexiev, Fenty, and Moore, in *Currency Hedged Benchmark Replication: Challenges and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

- 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 minimize market-driven slippage.
- 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.
- Fund-related slippage due to unrealized profit and loss effect and impact from investor cash flows.

In this article, the slippages are classified into implementation and execution leakages as illustrated in the process flow below:







Monitoring execution leakage

Execution leakage, 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 leakage 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 per annum.

Crowded trades

The crowding effect takes place at a point in time, e.g. 4.00 PM London at the end of each month when most investors perform passive rebalancing. This can magnify substantially leakages from rebalancing and can double the aforementioned 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.

The 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 the 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 the best execution.[1] Sparks, ITG 2015 suggests 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.

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. [2]

Execution leakage due to hidden implicit costs can lead to lower long-term investment outcomes.

1 Michael Sparks, 2015 Multi-Asset Best Execution and MiFID II

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

Exposure mismatch and unintended market risks

Slippage due to investment value uncertainty can be controlled or mitigated. Buy-side firms can have significant exposure to basis risk (risk that the derivative performance deviating from the currency movement of the underlying asset could result in significant performance leakage) 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 are important considerations to minimize unintended market exposure and implementation leakages.

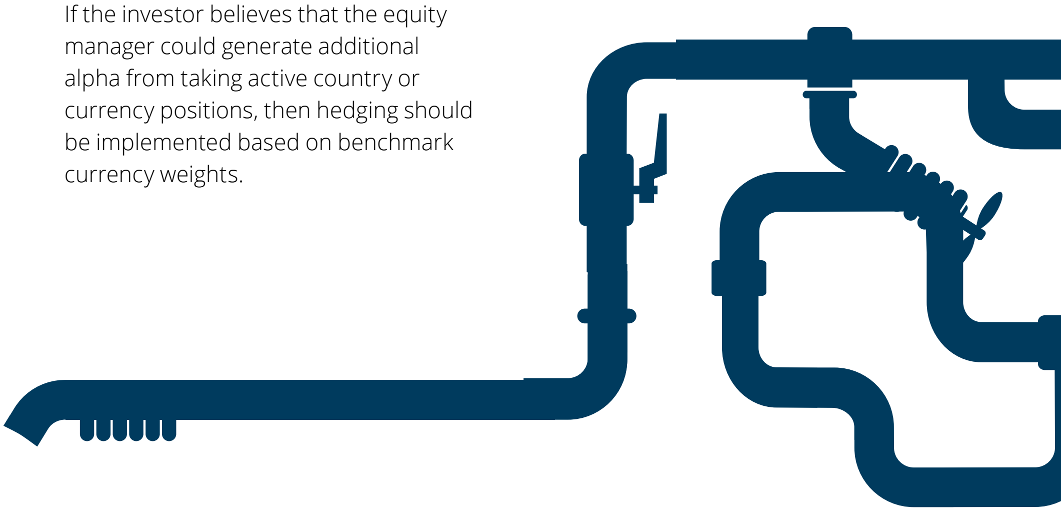
- **Infrequent quantification of risk exposures that lead to over- or under-hedged relative to the target hedge ratio.**
  - To minimise market-driven slippage, currency exposures in the underlying investment portfolio should be measured in real time or at least with a day lag. Global events that drive 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.

- **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.



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 longer-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.

Bringing it all together

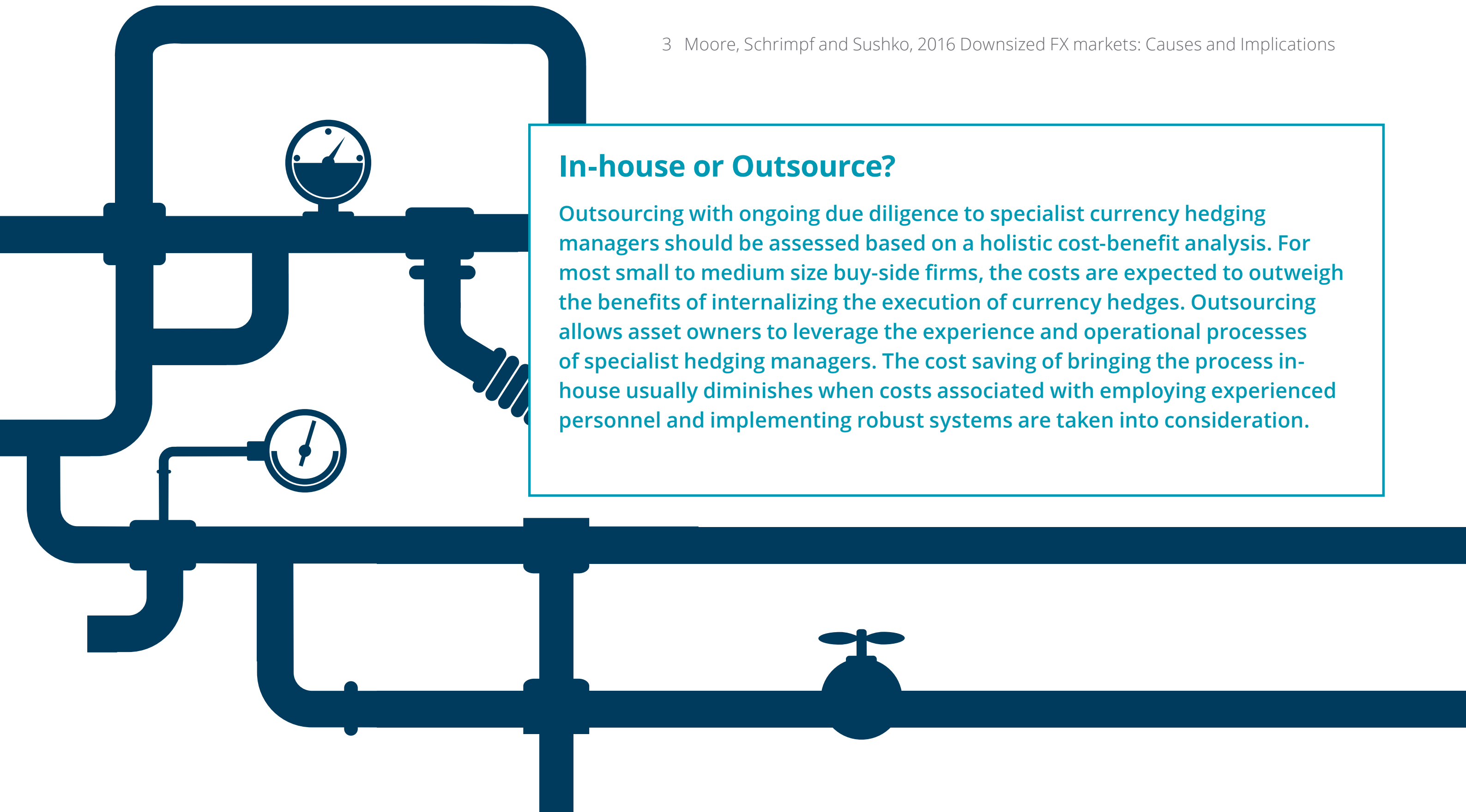
Currency implementation should be subjected to strict investment governance and oversight, independent attribution and risk controls, robust credit, liquidity, operational risk management and oversight of outsourcing arrangements. Buy-side firms must set quantifiable return and risk metrics that align 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)[3]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.

The decision to internalise or outsource currency hedging implementation is often influenced by investment management fees but may not focus on the importance of having the right experience, expertise and systems to develop internal currency implementation capabilities. Recent foreign exchange scandals, regulatory scrutiny and market microstructure changes due to technology disruption reinforce the need to continuously assess the oversight of currency hedging processes and controls to minimise implementation and execution leakages.

3 Moore, Schrimpf and Sushko, 2016 Downsized FX markets: Causes and Implications



In-house or Outsource?

Outsourcing with ongoing due diligence to specialist currency hedging managers should be assessed based on a holistic cost-benefit analysis. For most small to medium size buy-side firms, the costs are expected to outweigh the benefits of internalizing the execution of currency hedges. Outsourcing allows asset owners to leverage the experience and operational processes of specialist hedging managers. The cost saving of bringing the process in-house usually diminishes when costs associated with employing experienced personnel and implementing robust systems are taken into consideration.

To the point:

- Strong derivatives and operational risk management experience are required to develop internal currency implementation capabilities and implementation costs could outweigh the savings from bringing the implementation process in-house.
- 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 is important to minimise execution slippages.
- Implementation slippages due to mismatch in exposures can be mitigated through disciplined risk measurement, portfolio valuation, rebalancing and proxy hedging practices.
- Currency hedging implementation should be subject to strict governance and oversight, independent attribution and risk controls, robust credit, liquidity and 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.