ESTIMATING INVESTMENT CAPACITY: AN APPLICATION TO ACTIVE CURRENCY

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1. Summary

- All active investment strategies have capacity limits. These limits are conditional on many factors, including market liquidity and volatility, as well as investment and trading style, and ancillary team resources.
- Uncertainty surrounding estimates of capacity suggests conclusions are appropriately expressed in terms of ranges, rather than precise levels.
- We consider additional growth in active currency assets under management in the range 25%-50% to be feasible, and consistent with achieving performance targets agreed with existing clients.
- This range encompasses prospective active currency mandates, and additional funding to existing mandates, such as the CIBC Multi-Asset Absolute Return Strategy (MAARS), that incorporate a risk allocation to active currency strategies.[2]

2. Introduction

All active investment strategies have a capacity limit. This limit defines the amount of assets under management (AUM) that can be gathered by the strategy provider without existing investors experiencing a potential shortfall in investment performance below agreed targets.[3]

Estimates of capacity limits are conditional on many factors. First, market liquidity and volatility, both of which vary through time. Second, investment and trading styles, which determine the amount of daily market liquidity absorbed by the strategy. Third, the structure of additional client mandates, including the breadth of the permissible investment universe and extent of investment constraints, as well as return and risk targets. Fourth, operational capacity, encompassing the physical and technological capacity of investment teams to manage, and ancillary teams to appropriately service, myriad mandates, many of which exhibit their own specific constraints, investment universe, return and risk targets, and reporting requirements.

The existence of multiple, and often competing, factors makes the assessment of capacity limits inherently uncertain. They are best considered in terms of estimated ranges. Contemporaneous monitoring of investment performance and operational capacity is an important means of identifying early warning signals of the proximity of capacity constraints.

In this paper, we focus primarily on investment capacity. Operational capacity is a particularly elusive concept, but can also be more readily alleviated through the addition of ancillary team resources.

To estimate the plausible range of capacity limits, we standardize notional currency AUM to a common annualized risk target. We choose 2%; this is an increasingly popular target across active currency clients. In a previous iteration of our analysis, completed in 2017, we concluded that a cautious, but plausible lower bound increase in active currency AUM at this risk target was 50%; an increase of this magnitude would not risk significant adverse impact on either the investment team's ability to add value to client portfolios consistent with agreed performance targets, or ancillary teams' ability to service client accounts to an appropriate standard.

This estimate incorporated restrictive assumptions regarding the growth of market liquidity, as well as investment and trading styles. Prudently relaxing some of these assumptions suggested an upper bound increase in active currency AUM from its 2017 level may lie closer to 100% (Figure 1). Since the conclusion of this analysis, CIBC Asset Management (CIBC AM) currency AUM has grown by 50%, again standardized at a 2% risk target.[4]

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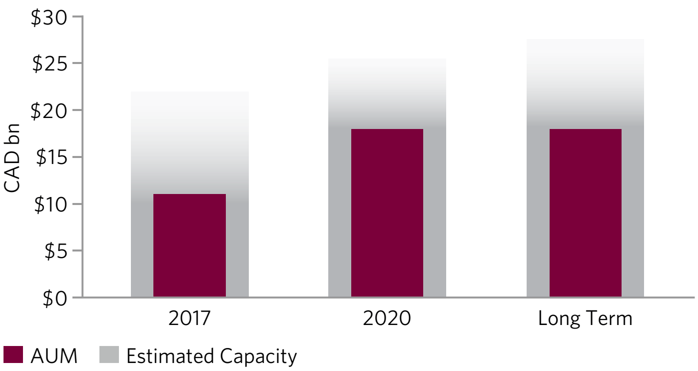
[2] Further details on active currency solutions and MAARS are available on request.

[3] Alternative definitions of capacity limits exist, mostly focused upon the incentive structure of the manager. As a fiduciary, we focus solely on our clients.

[4] AUM growth calculated only including active currency AUM. See below for further details on calculation methodology.

Figure 1 – Estimated capacity range, standardized at 2% annualized risk



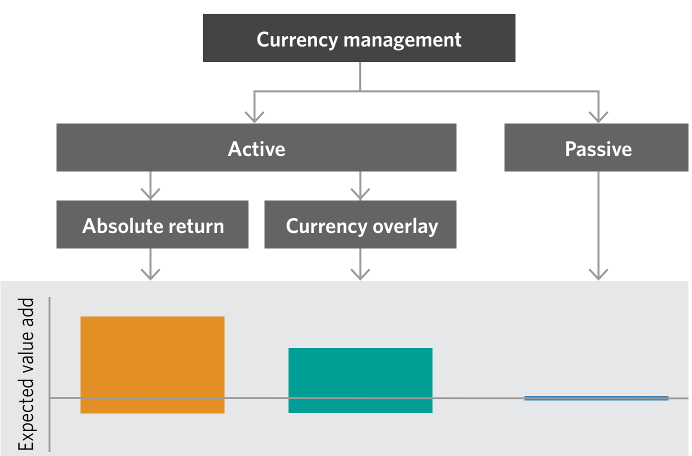
Source: CIBC Asset Management Inc.. Data in this Figure excludes AUM associated with passive mandates. Data as at March 31, 2020.

This suggests that the plausible range for future capacity growth, conditional on current market liquidity and volatility, is now 25%-50%.

3. Detail

The CIBC AM Multi-Asset and Currency Management team offers a range of currency solutions to clients (Figure 2). Strategic, passive hedging lies at one end of this range. It is a risk-control strategy, intended to reduce or eliminate the portfolio risk impact of currency exposures inherited from investments in global assets; there is no associated expected return. Unconstrained active currency investing lies at the opposite end of the range. It is a diversifying absolute return strategy for which positions are implemented as a capital efficient unfunded overlay to underlying portfolio exposures, or as an investment in a fully-funded comingled vehicle. Active currency is also offered as a component of MAARS.[5]

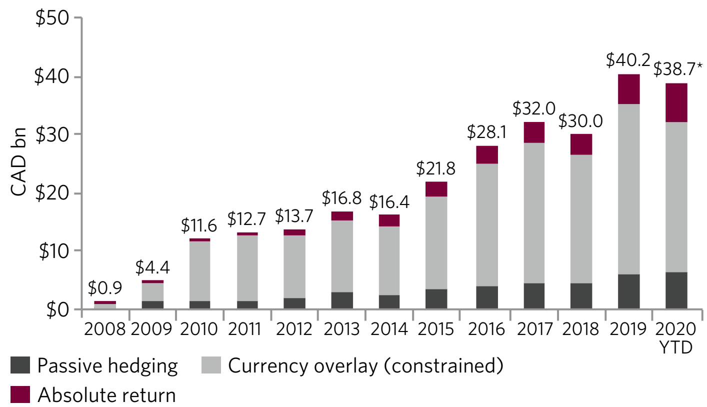
Figure 2 – CIBC Asset Management currency solutions



Source: CIBC Asset Management Inc.. Illustrative example.

Notional AUM in CIBC AM currency solutions has continued to grow over recent years, and was $39bn at the end of the first quarter of 2020, including both active and passive mandates (Figure 3). This growth reflects allocations to constrained and unconstrained active currency mandates, and both new client onboarding and additional funding from existing clients.

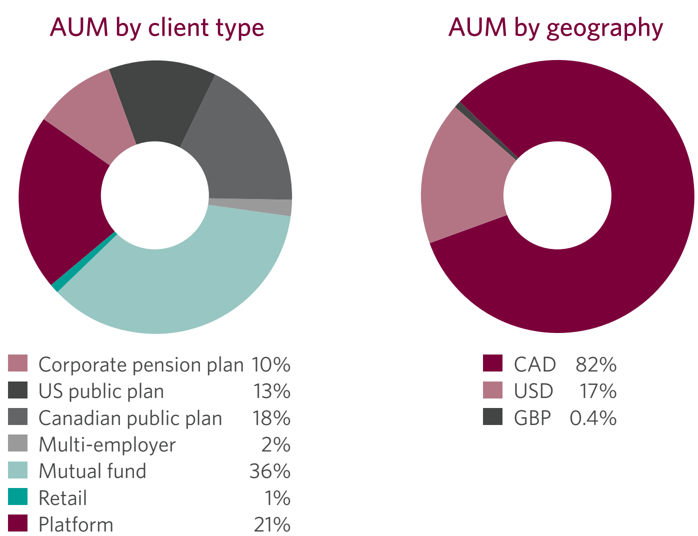
Figure 3 – CIBC AM currency solutions (not risk standardized)



Source: CIBC Asset Management Inc. Data in each bar refer to end-year.
*Includes $14 billion where we also manage the underlying physical assets.
All data expressed in Canadian dollars as at March 31, 2020.

From a capacity perspective, not all AUM is created equally (Figure 4). Mandates differ in terms of operational complexity, in turn reflecting differences in investment constraints and reporting requirements. They also exhibit differences in investment liquidity, for instance due to more or less aggressive return and risk targets, or a greater share of less liquid assets within approved investment universes.

Figure 4 – CIBC AM currency AUM



Source: CIBC Asset Management Inc.. Data do not sum to 100% due to rounding.
Data as at March 31, 2020.

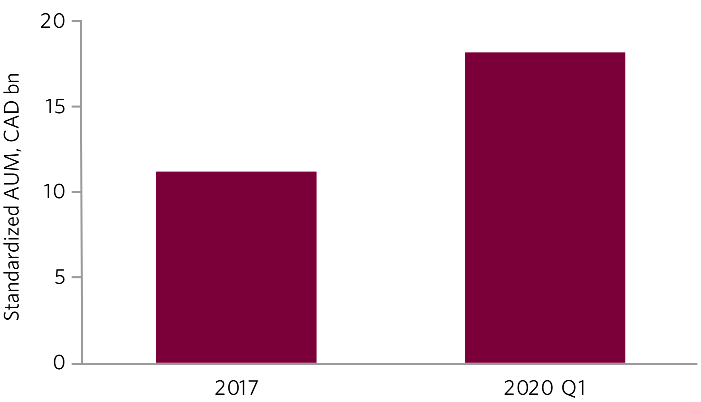
[5] And to retail investors as a sub-advised ETF.

For the purpose of our analysis, we exclude AUM in fully passive hedging mandates, as well as USD/CAD benchmark mandates. In both cases, we consider liquidity to be infinite, for any practical purposes. Operational constraints, including reporting, will bind eventually, even for passive mandates, but realization of this outcome will be a function of the number of mandates, rather than the level of AUM, and can be mitigated by hiring additional experienced ancillary team members.

To facilitate our analysis, we standardize AUM in constrained and unconstrained active currency mandates at a single, 2% annualized risk target.[6] This choice is arbitrary and has no impact on the conclusions of our analysis, but is intuitive given the growing popularity of this risk target across institutional active currency clients.

This standardization results in current AUM of $18bn (Figure 5). Our analysis of feasible AUM growth uses this value as its starting point.

Figure 5 – Currency AUM at standardized annual 2% risk target



Source: CIBC Asset Management Inc.. Data as at March 31, 2020.

4. Capacity as a function of FLAM

AUM capacity analysis can usefully be framed in terms of the Fundamental Law of Active Management (FLAM; Grinold and Kahn, 2000, 2019; Clarke, de Silva, and Thorley, 2002),

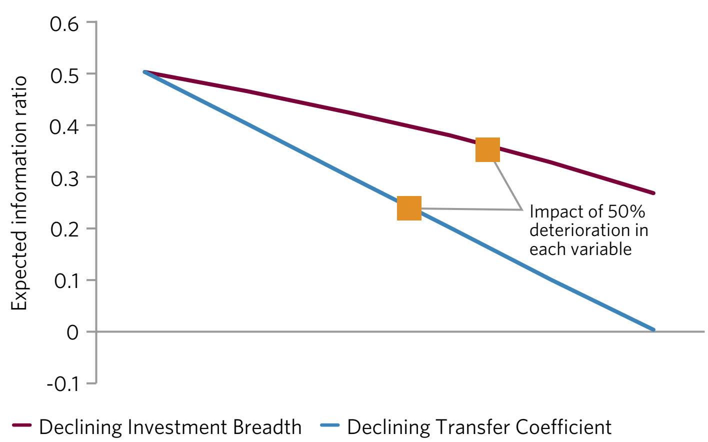
$$IR = Skill * \sqrt{Breadth} * Transfer\ Coefficient$$

where IR is defined as Information Ratio, or return per unit of strategy risk, and Skill is measured as the correlation between expected (or forecasted) and realized active currency returns. In both cases, higher is better. For the purposes of our analysis, we assume Skill to be constant. Common causes of a deterioration in Skill include a lack of persistence in investment opportunity, and investment resources being spread too thinly, for instance by extending responsibilities into asset classes and strategies for which teams have no prior experience. Neither applies to the CIBC AM Multi-Asset and Currency Management team.

Breadth is a measure of the number of independent positions implemented into portfolios by an investment team per year. Higher breadth is synonymous with lower portfolio concentration, relatively smaller trades, and higher capacity for any given AUM. The Transfer Coefficient (TC) lies in a range between one and zero. It represents the impact of constraints and trading frictions on the ability of investment teams to translate Skill into portfolio positioning consistent with investment conviction. A higher TC is preferable, and indicative of more efficient portfolio construction. Limiting TC constraints may relate to mandates, systems, or physical resources.

Declining investment breadth and a deteriorating TC are symptomatic of binding capacity limits that adversely impact investment performance (Figure 6).

Figure 6 – Simulated impact of declining investment breadth and Transfer Coefficient on expected investment performance



This information was prepared by CIBC Asset Management Inc.. Illustrative example.

A number of factors determine trends in investment breadth and the Transfer Coefficient. These include Average Daily Volume (ADV) and market liquidity, trade size, investment and trading styles, mandate complexity, and operational and ancillary team resources. We discuss each one in turn below, as well as some of the more relevant inter-relationships between these factors.

[6] We overlook for the time being the impact of differences in constraints across our active book of business.

4.1. Average Daily Volume (ADV)

The most well-known source of ADV data is the Bank for International Settlements (BIS) Triennial survey. It estimates ADV at $6.6 trillion (BIS, September 2019). This represents a 30% increase on the previous, 2016 estimate. It is directionally consistent with recent trends in World trade and cross border mergers and acquisitions activity, despite a proliferation of high profile trade conflicts in the intervening years (Figure 7).

Figure 7 – Trends in currency ADV correlate with world trade and cross-border mergers and acquisitions activity

This information was prepared by CIBC Asset Management Inc. using the following third party service provider: BIS, IMF, JP Morgan Asset Management, Bloomberg. Data as at December 31, 2019.

ADV is not always synonymous with market liquidity available to the CIBC AM trading desk. Anecdotal evidence from counterparties suggests a more cautious interpretation than the BIS: outside of market disruption due to COVID-19, liquidity has remained excellent and no constraint on investment activities, but it is not increasing sharply, in aggregate. A similar conclusion follows from the decline in recent years in the volume of Real Money trading activity in favour of Fast Money and Algorithmic traders, for which associated liquidity is often relatively fleeting.

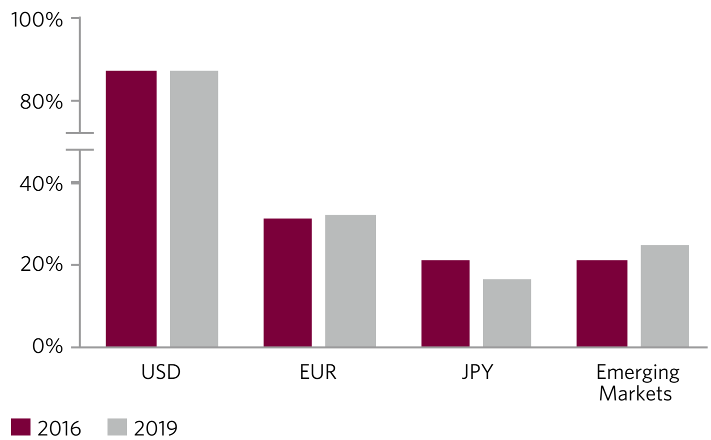
Market ADV data are also available from CLS.[7] Broad calculation methodologies are similar across both providers, but CLS removes two trade types included by the BIS, to minimize double-counting:

- internal trades between units and desks within the same institution – these trades provide no settlement risk, and no liquidity to third parties such as CIBC AM.
- one of the legs of trades involving a Prime Broker.[8]

CLS estimates ADV at $3.6bn, an 18% increase over the past three years.[9] Both the level and growth rate for CLS are less impressive than the BIS. But the growth rate does appear more consistent with the combined growth in world trade and cross-border mergers and acquisitions activity, and closer to our anecdotal experience.

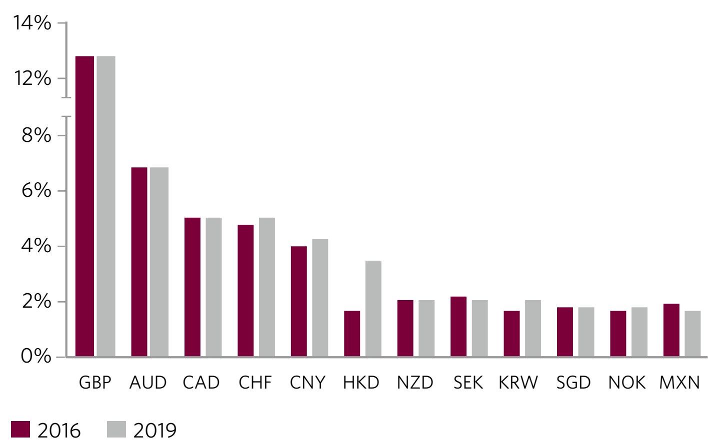
Trends in the currency composition of ADV data are also important. BIS (2019) reports that Emerging Market (EM) currencies now account for 25% of ADV, with noteworthy increases in traded volumes for a range of currencies, across Latin America, Europe, and Asia (Figures 8A and 8B).

Figure 8A – ADV by currency



This information was prepared by CIBC Asset Management Inc. using the following third-party service provider: BIS. Data as at December 31, 2019.

Figure 8B – ADV by currency



This information was prepared by CIBC Asset Management Inc. using the following third-party service provider: BIS. Data as at December 31, 2019.

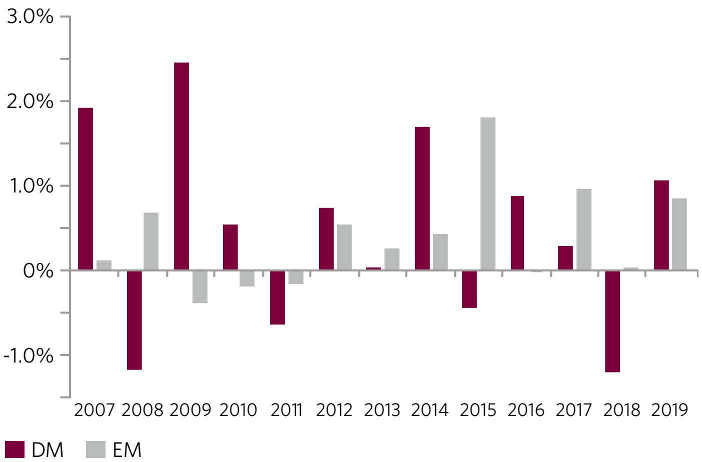
[7] CLS is a US FX settlement firm established in 2002. It has coverage of approximately 50% of FX daily turnover. CIBC Asset Management uses the services of CLS.

[8] For instance, if Manager X trades with its Prime Broker, and then the Prime Broker settles this trade with CLS, both legs are counted by the BIS, but only one by CLS. This double-counting is estimated by CLS to account for approximately $900mn of average daily turnover (Hasbrouck and Levich, 2017).

[9] As at March 2020. We have calculated the change in market turnover using CLS headline data, and assuming unchanged market share. Accordingly, the reported growth is approximate.

As market turnover and liquidity continue to deepen beyond the Developed Market (DM) currencies, the effective breadth and capacity of investment processes can increase commensurately. It also means active currency investment strategies that exclude EM currencies will forego a growing share of available market liquidity. This is not the case for CIBC AM (Figure 9).

Figure 9 – Annual contribution of DM and EM currencies to unconstrained active currency performance



The information was prepared by CIBC Asset Management Inc.. Returns from Representative Account are rescaled to 2% annualized risk (1% Value-Added Objective). Data as at December 31, 2019.

ADV in currency forward contracts—CIBC AM's trade implementation vehicle—also increased in the latest BIS survey, to $1 trillion, of which one quarter is now comprised of Non-Deliverable Forwards (NDFs).

4.2. Feasible trade sizes

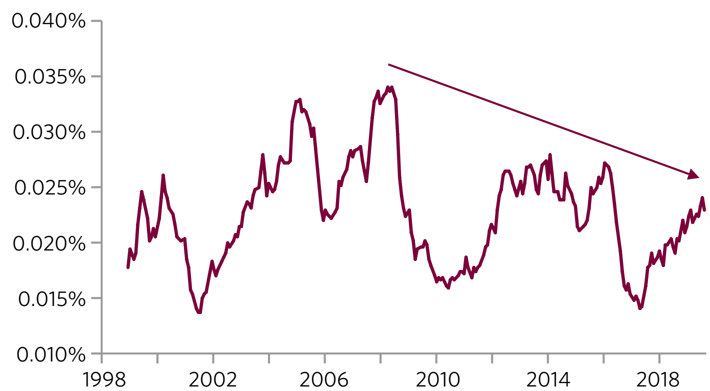
Market liquidity is a core determinant of investment capacity. It determines feasible trade sizes, which has implications for investment and trading styles.

We assess feasible trade sizes in two ways. First, by estimating portfolio liquidity, in terms of how many days it would take to liquidate all active currency positions without significant price impact. Second, by estimating the percentage of daily ADV that typical trade sizes for each currency in our investment universe consume; as this percentage rises, so too do associated transaction costs.

4.2.1. Portfolio liquidity

We measure and monitor the liquidity of our portfolio on a daily basis. This measurement takes the form of a basis point estimate of the cost of liquidating all positions in a single trading session (Figure 10). This eventuality has never arisen. But the discipline provided by this thought exercise is an important component of CIBC AM portfolio construction and position sizing.

Figure 10 - Portfolio liquidation cost



The information was prepared by CIBC Asset Management Inc.. Data as at December 31, 2019.

Any trend drift higher in the average cost of liquidation may provide early evidence of the proximity of capacity constraints, conditional on the prevailing market environment.

Since a local peak during the 2008 Global Financial Crisis (GFC), estimated liquidity cost has actually trended lower. This is consistent with rising market ADV, particularly in EM currencies and NDFs, and the broad decline observed in market volatility, prior to COVID-19. Although the local trend in the cost of liquidation since 2016 has been higher, we do not consider this indicative of early stage capacity constraints, but rather a reversion to the mid-point of a range that has prevailed for 20 years. This conclusion is consistent with strategy performance during this period. But we remain vigilant.

4.2.2. Trade size relative to ADV

Capacity constraints limit feasible trade sizes and investment breadth, and ultimately impinge upon investment performance. Constraints can be thought of in terms of threshold limits on the percentage of individual currency, and total market, ADV an investment strategy can consume.[10] Where this trade threshold lies is difficult to estimate with precision. A plausible assumption, consistent with the broader capacity literature, is around 5% of daily ADV (UBS, 2017). For the FX market in aggregate, even using less rosy CLS ADV data, this threshold is so distant for even the largest active investors as to be irrelevant.

It is more pertinent for positioning in individual currencies. As strategy AUM grows, average trade size increases, in absolute terms and as a percentage of market ADV, at some point inflating transaction costs and reducing expected net-of-cost performance.

At current ADV, typical trade sizes for all currencies within our investment universe are below our arbitrary 5% threshold.[11]

4.3. Market volatility

Higher market volatility will exert competing impacts on estimated capacity. First, in normal market conditions, higher volatility will be synonymous with a greater opportunity to add value to portfolios, assuming a constant return target. Concurrently, higher volatility will typically be positively correlated with higher transaction costs, and a quicker decay of alpha opportunities; market makers will expect to receive higher compensation as market risk increases.

Second, in extreme volatility events, such as during the GFC or the 2020 COVID-19 shock, correlations across assets tend to increase substantially, minimizing investment breadth. During these events, the impact on correlations is often compounded by a lower Transfer Coefficient, for instance due to associated market dislocations and frictions that minimize available liquidity.

Prior to the COVID-19 shock, currency volatility had been close to all-time lows (Figure 11). The recent shocks drove volatility substantially higher. Consistent with this spike, market liquidity declined markedly, and transaction costs increased. Policy actions have quickly reversed a large proportion of the rise in volatility, which is now back close to its historical average. At this level, and assuming market function continues to normalize, and economic activity also progressively recovers, investment capacity is likely to be higher than when volatility was trading at either extreme.

Figure 11 – Currency volatility is an important factor determining investment capacity

The information was prepared by CIBC Asset Management Inc., using the following third-party service provider: Bloomberg. Data as at April 30, 2020.

4.4. Investment style

The CIBC AM active currency strategy is a top-down macro process integrating quantitative and qualitative fundamental insights. It has historically exhibited low turnover. The median historical holding horizon for individual portfolio positions is 4 months, and the portfolio has historically turned over less than once a year at a 2% annualized risk target.

The strategy incorporates a substantial average risk allocation to mid- to long-horizon investment strategies, such as Carry, Value and Cycle, and a smaller average risk contribution from Momentum.

Value trades assume mean reversion, and tend to provide liquidity to the broader market, mitigating market impact and trading costs. Momentum strategies absorb liquidity as they involve trading with the broader market, and so tend to be associated with wider transaction costs and a larger market impact. Market-maker inventory risk is higher for these trades. Value-oriented strategies therefore tend to have more capacity—for given return and risk targets—than strategies based on momentum, or time series trends.

[10] Studies sometimes derive estimates of investment strategy capacity based upon estimated transaction cost data. These data incorporate trading activity of the average participant—including retail investors, uninformed investors who typically trade with the market, and high turnover investors—and likely over-estimate costs faced by an informed, longer horizon investment strategy such as the CIBC AM active currency investment process (UBS, 2017). Instead, by focusing on trade size relative to ADV we implicitly capture the impact of transaction costs.

[11] We limit our measure of ADV to include only forwards, and not the wider foreign exchange market, since this is the vehicle via which we implement portfolio exposures.

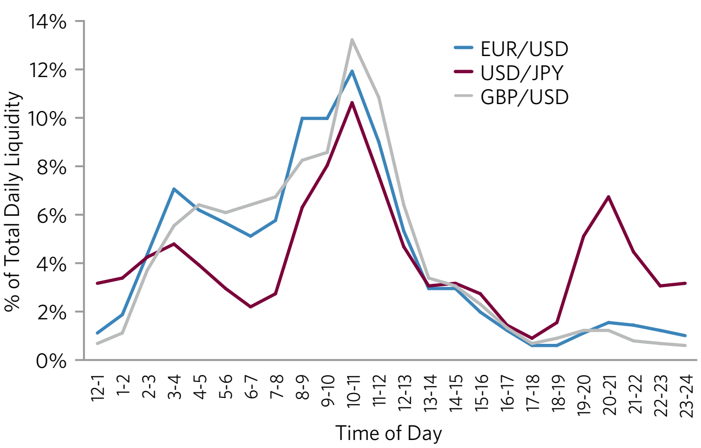
4.5. Trading style

Trading style is also an important determinant of investment capacity. This includes how often a strategy trades with or against broader market trends, as discussed above, but also the time horizon over which the portfolio is typically rebalanced.

Rebalancing trades in the CIBC AM active currency portfolio are executed whenever significant new information arises. The CIBC AM trading desk typically executes trades on a on a Time-Weighted Average Price (TWAP) basis during a two hour window, 9am-11am Eastern Standard Time (EST), when London and New York trading sessions overlap and daily market liquidity is typically at its maximum.

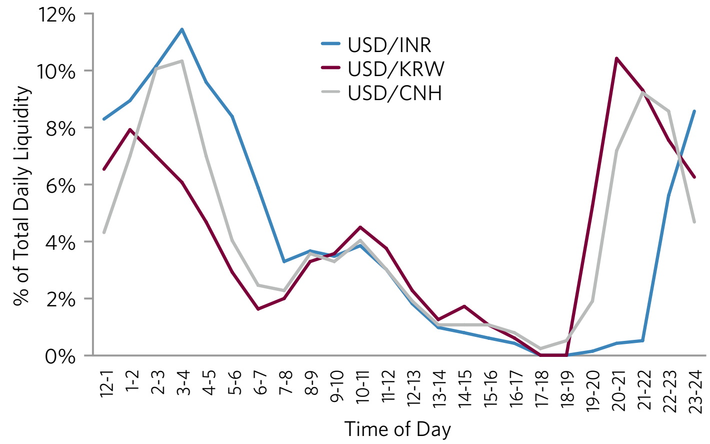
There is scope to relax this constraint in two ways, without significant negative impact upon expected strategy performance. First, by extending the trading day. Peak daily liquidity in most DM currency pairs occurs between 7am-12 Noon EST; and ample liquidity exists during this window across all currencies in our investment universe at current AUM (Figure 12A). But for Asian EM currencies, the overnight trading session has the most liquidity (Figure 12B). Accessing this liquidity would allow CIBC AM to feed larger trade sizes for these currencies into the market on any given trading day. This would facilitate access to total market ADV, and mitigate the risk of trading activity exerting a significant market price impact.

Figure 12A – Profile of daily liquidity, indicative currency pairs



The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Goldman Sachs FX Liquidity Monitor. Data as at December 31, 2019.

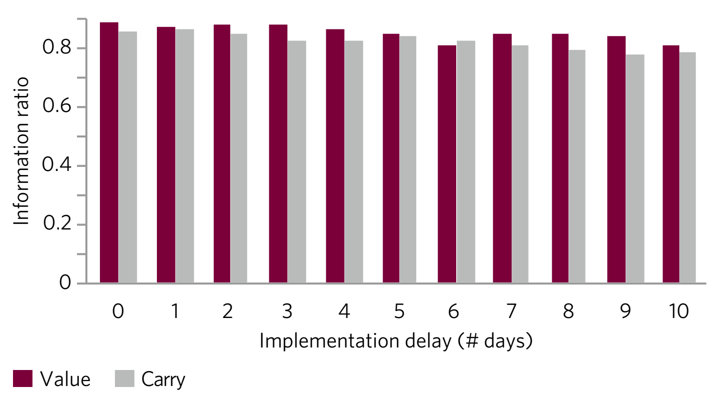
Figure 12B – Profile of daily liquidity, indicative currency pairs



The information was prepared by CIBC Asset Management Inc. using the following third-party service providers' data: Goldman Sachs FX Liquidity Monitor. Data as at December 31, 2019.

Second, and as discussed above, the CIBC AM active currency investment process has a significant exposure to Value; the correlation between positioning in the CIBC AM Value factor and total portfolio positioning is expected to average 25% over rolling 3-year periods. Information related to Value fundamentals does not decay quickly (Figure 13). This result is intuitive, as the average investment horizon of positions motivated by the core CIBC AM Value factor is approximately 2-3 years. In addition, value signals often trade against market trends, reflecting their embedded assumption of mean reversion. Both facets are attractive from a capacity perspective. A similar gradual decay profile is apparent for the CIBC AM Carry, and Cycle, factors. As a result, there may be an opportunity to tranche trades identified as Value, Carry, or Cycle over a number of trading sessions without any significant loss of information. This tranching would meaningfully increases AUM capacity.[12]

Figure 13 – Factor information decay due to implementation delays is low



The information was prepared by CIBC Asset Management Inc. using the following third party service providers' data: Thomson Reuters DataStream. The chart reports the decay in Value and Carry factor Information Ratios due to a delay of 1-10 days in implementing positions proposed by the CIBC AM investment process. Data as at December 31, 2019.

[12] The beneficial impact of trade tranching on transaction costs and investment capacity may be undermined to the extent that counterparties are able to identify the onset of trading activity intended to span multiple trading sessions.

4.6. Operational complexity of investment mandates

Complexity can be a function of client-led investment constraints that necessitate additional investment scrutiny and decision-making. For instance, whether to express an investment idea through a proxy currency when constraints prevent direct implementation in the currency preferred by the investment process. It may also be a function of additional reporting and service requirements requested by a client. These complexities are relevant and appropriate from an individual client perspective. In aggregate, they exert a disproportionate impact upon available capacity.

4.7. Asset composition, return and risk targets of future mandates

Greater emphasis on less liquid EM currencies within future client mandates would lead to more rapid exhaustion of available capacity. This presents a dilemma, as the most significant profit opportunities within active currency are often in EM currencies; investors in these currencies expect to be compensated for exposure to the inherently larger economic, political, and liquidity risks associated with these assets, relative to DM counterparts.

More ambitious client return and risk targets, for any given mandate size and currency composition, will also exhaust investment capacity at a relatively quicker pace, due to a need for commensurately larger position sizes.

4.8. Use of portfolio management resources

Client outreach and servicing are core facets of asset gathering and client relationship management. They are also time consuming, and potentially significant limiting factors on capacity. Portfolio managers focused on asset gathering and client servicing will be distracted from their fiduciary core role of striving to achieve performance targets agreed with existing clients.

CIBC AM has mitigated this risk by establishing a team of Client Portfolio Managers (CPMs). Team members often have significant portfolio management experience, and are well qualified to represent investment teams to clients and investment consultants in most interactions. CIBC AM asset gathering and client servicing capacity has been increased substantially by the creation of this team.

5. Conclusion

All investment strategies have capacity limits. These limits are conditional on many factors, including market liquidity and volatility, as well as investment and trading style, and ancillary resources. Uncertainty surrounding estimates of capacity suggests conclusions are appropriately expressed in terms of ranges, rather than precise levels. Based on analysis of a broad set of relevant factors, we consider additional growth in active currency assets under management in the range 25%-50% to be feasible, and consistent with achieving performance and servicing targets agreed with existing clients.

6. References

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Let's Connect

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1082 / E 06/20