

## Managing FX Counterparty Risk

**Lynn Challenger**  
*Managing Director,  
 Head of Global Trading*



### INTRODUCTION

Two years after the financial crisis, structural reform in the over-the-counter (OTC) derivatives market is showing progress. In July of 2010, President Obama signed the 2,315 page Dodd-Frank Wall Street Reform and Consumer Protection Act. Its objectives are to bring transparency to-and impose structural stability on-the OTC derivatives markets. However, interpreting the act and completing the structural changes necessary to effect positive change across all products will likely take a significant amount of time. Meanwhile, clients who are actively participating in the foreign exchange (FX) derivatives markets (forwards and options) may remain exposed to the same counterparty and structural risks that existed in 2007. Further, the structural changes that are currently being discussed are narrow in scope and will only serve to enhance the risk mitigation solutions currently available in the FX markets. Therefore, clients should consider taking proactive measures to control risks now.

This paper will outline the current FX market clearing infrastructure and demonstrate that any application of the Dodd-Frank Bill will serve to enhance it, not dramatically change it. Although, of course, this could change since the rule making mandated by the Dodd-Frank Bill has not been finalized. We begin with a high-level review of the importance of risk management in the FX markets, followed by a description of typical risk management strategies. Then, using an assumption of one extreme interpretation of Dodd-Frank, we present an outline of the future FX market clearing infrastructure. Finally, we conclude that investors should not wait for the interpretation of legislation, but should act now to implement more robust counterparty risk management solutions.

### RISK MANAGEMENT

#### Liquidity Risk

Liquidity risk in the foreign exchange market can be deceptive. Even though it is the largest financial market in the world with an average daily turnover of \$4 trillion<sup>1</sup>, the following conditions (as observed by Mellon Capital) demonstrated the FX market was not immune to the financial crisis of 2008:

- Bid/ask spreads significantly widened
- Dealers' risk capital and budgets evaporated causing forwards to be priced more from supply and demand than risk arbitrage factors
- Volumes shrank and "liquidity" became unidirectional with price movements
- Implied and realized volatility spiked to historical highs

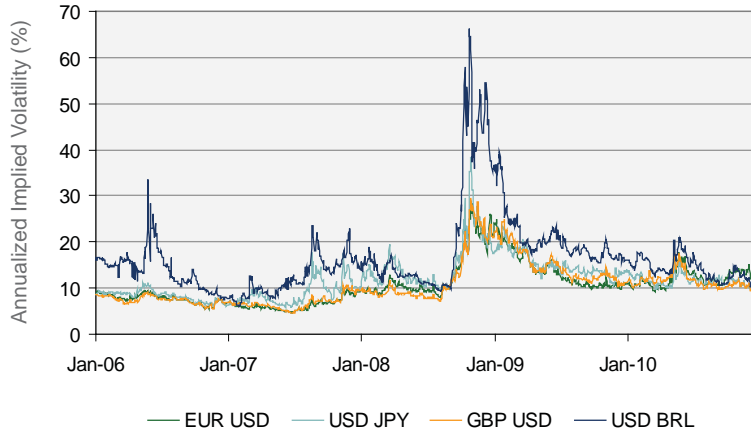
While it is hard to fathom a \$4 trillion market experiencing liquidity issues, consider the following factors:

- EUR, USD, JPY and GBP account for 71% of the entire market<sup>2</sup>
- More than 80% of the volume in the FX markets is executed by ten banks<sup>3</sup>
- The market relies on interbank credit lines to function properly

Such a tightly woven set of banking relationships normally creates efficiencies accruing to the larger set of market participants. However, it can be disrupted when credit lines come under pressure. A simplistic way to demonstrate the impact that the financial crisis had on liquidity is to consider the 1 month implied volatility chart for various currencies (Figure 1).

**Figure 1: Historical Implied 1-Month Volatility**

Data Source: Bloomberg



A second way to demonstrate the impact of the financial crisis on the FX markets is to view the historical funding spreads that banks charge each other, or the TED Spread (Figure 2). The TED Spread is the difference between the 3 month BBA Libor rate and the 3 month overnight interest rate swap rate (OIS). Higher funding costs create incentives for dealing banks to delever risky positions, charge higher spreads for any additional risk taking and stand down on dealing in larger trading volumes. Additionally, as systemic market risk rises, so does the perception and potentially the reality of counterparty risk (including among dealing banks). This fact can compound the adverse behaviors described above.

**Figure 2: TED Spread**

Data Source: Bloomberg



2. BIS Triennial Survey, 2010: <http://www.bis.org/publ/rpfx10.pdf>

3. FXC Market Share Report, 2010: <http://www.newyorkfed.org/fxc/volumesurvey/2010/mshare0410.pdf>

## **COUNTERPARTY RISK**

Serving as a stark reminder of counterparty risk, one of the major impacts of the 2008 financial crisis was the bankruptcy of Lehman Brothers. Lehman's clients were not only affected by the risk of financial loss, but also with the ensuing operational and legal issues. The major risks to be considered are:

- Recovering unrealized P&L
- Recovering collateral (in particular, re-hypothecated collateral)
- Reinitiating positions

After a counterparty default, recovering the mark-to-market unrealized gains along with any additional collateral posted with the defaulted counterparty can take months if not years to rectify. With assets frozen in bankruptcy and with the passing of time, it becomes difficult to manage the risk as hedged positions can drift apart with price movement. In order to manage trading activity and risk in the future, a client of a defaulted dealer typically is forced immediately into another dealer relationship.

### **Operational Risk**

One risk that is not always considered is the impact on an investor's ability to transact in the market when a counterparty is removed. If an investor is limited to one counterparty, establishing a replacement in the midst of a crisis is extremely difficult. Not only does an investor have to disentangle itself from the legacy counterparty, it also has to line up new dealing accounts when credit departments are on high alert. Even if a client has a handful of counterparties, the ability to access liquidity through a few dealers may be significantly impaired during times of severe stress. Given that 80% of the market is controlled by ten dealers, maintaining a diversified and large group of dealers is essential.

## **RISK MITIGATION - DIRECT ACCOUNTS**

Once the majority of risks are identified, an investor can begin to consider means to mitigate these risks. Market participants currently use all of the following tools either in isolation or as part of a larger integrated risk mitigation plan. When used together, counterparty diversification, ISDA Master Agreements (and related Credit Support Annexes) and CLS Settlement can be an effective package to minimize the risk for an investor from external events.

### **Counterparty Diversification**

Diversification is the most important means of counterparty risk control because it typically allows the investor to:

- Maintain open dealing lines during times of stress
- Access a larger pool of market liquidity
- Insulate itself from a single ruinous event

However, there are some significant shortcomings to simply relying on multiple counterparties to mitigate risk.

- Multiple relationships increase probability of being impacted by a major event that affects all dealers
- Position concentration is difficult to control illustrated by a large gain with one counterparty and a large offsetting loss with another (potentially increasing contingent risk and higher collateral requirements)
- Counterparty setup and maintenance can be expensive
- Multiple counterparties with offsetting positions significantly increases settlement risk

### **ISDA Master Agreement**

Establishing a clearly-defined set of rules for behavior between counterparties is crucial for disentangling open positions during a default. This is accomplished through an ISDA Master Agreement. The International Swaps and Derivatives Association is a global trade association representing leading participants in the privately-negotiated derivatives industry. An ISDA Master Agreement governs relationships between parties by describing standard terms, representations, events of default, termination events, and covenants. In other words, it defines the counterparty relationship and outlines (or demonstrates) the framework for unwinding the relationship given the breach of specific risk tolerances, that are included in the ISDA Master Agreement.

ISDA Master Agreement negotiations typically begin with one of two standard formats: 1992 and 2002. Many buy-side clients prefer the 1992 format. The two counterparties will then propose amendments to the standard format to fit their own internal guidelines. Terms are negotiable and consequently inconsistent across counterparties. In other words, not all counterparties are going to be equal in terms of risk exposure.

### **Credit Support Annex**

A critical line of defense in counterparty risk management is bilateral collateral - the bilateral exchange of collateral between two counterparties to offset unwanted credit risk derived from unrealized gains. When a party in an OTC transaction triggers an event of default or a termination event as defined in the ISDA Master Agreement, the other party has the right to seize the collateral posted to it by the opposing party and use those funds to offset any financial loss incurred. This agreement is called a Credit Support Annex (CSA) and it is an annexed document that forms a part of the ISDA Master Agreement. It details the parameters around collateral: thresholds, minimum transfer amounts, types of collateral and haircuts, transfer notices, and timing.

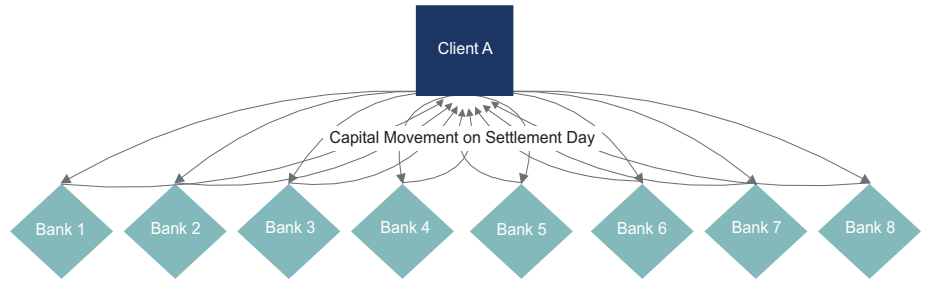
An important factor to consider when establishing an ISDA Master Agreement and CSA is that the counterparty may require an independent amount of collateral (IA) to mitigate its risk. The counterparty will consider numerous factors including but not limited to: the account's leverage, risk of the strategy, and the underlying structure of the investor. We have observed that the FX Prime Broker's IA requirements have generally been very similar to the IA requirements for a direct forward account.

### **CLS**

To reduce settlement risk, the market established an entity to centralize foreign exchange settlement. CLS is a bank, owned by the foreign exchange community, with the sole purpose of settling FX transactions. CLS Settlement is the only means by which settlement risk can generally be eliminated with finality using a combination of payment versus payment in central bank funds, multilateral payment netting and a standard legal framework, supported by a robust and resilient infrastructure. CLS is connected to every major FX dealer and most custodians.

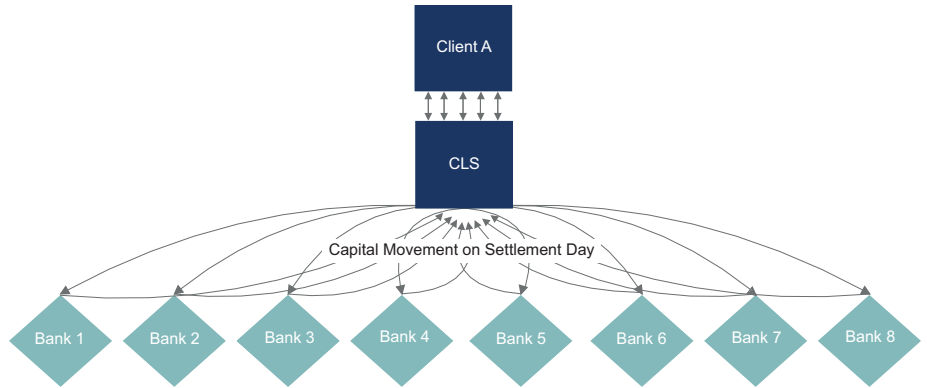
On the next page is a flow chart (Figure 3) outlining some of the settlement risks prior to or without the use of CLS. The notional amount from each FX forward would be sent to the client's custodian making for an extraordinarily large flow of capital between brokers and the client on a single day.

Figure 3



The flowchart below (Figure 4) is designed to show how CLS addresses these risks:

Figure 4



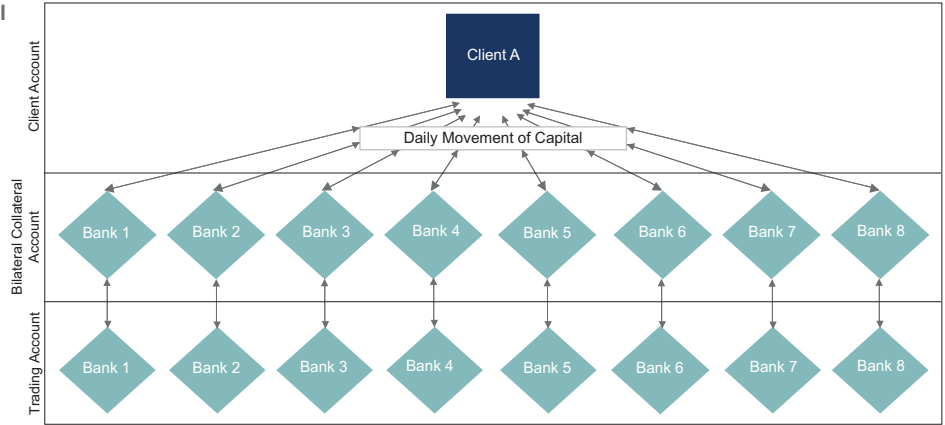
**Costs**

If all of these risk mitigation tools are employed, and fair and equitable terms are agreed to in the ISDA Master Agreement and CSA, we believe an investor is well protected from counterparty risk and liquidity shocks. Unfortunately, the operational expenses associated with setting up and maintaining these risk mitigation tools are significant.

- ISDA Master Agreements are complex and can be expensive to finalize
- Ongoing costs associated with ISDA Master Agreement maintenance
- Managing a diversified set of counterparties multiplies the costs of the ISDA Master Agreement
- Multiple FX-related agreements makes initiating new accounts operationally difficult
- Collateral requirements can be significant when using a diversified set of counterparties
- FX contracts remain open until settlement; collateral may be posted and received separately for each counterparty if unrealized losses accrue with one counterparty and unrealized gains accrue with another
- Maintaining and tracking multiple collateral accounts per fund is expensive and time consuming
- Self clearing an active FX account requires significant infrastructure and resources

Figure 5 outlines the flow of collateral payments between dealers and a client. The usefulness of a bilateral collateral account to an investor stems from the fact that if unrealized gains are achieved through trading activity, the counterparty must place collateral funds into an account that can be accessed directly in the event of that counterparty's default. This significantly reduces the "frozen asset" problem to typically one day's market movement for the open positions held with the counterparty.

Figure 5: Client Account with Bilateral Collateral

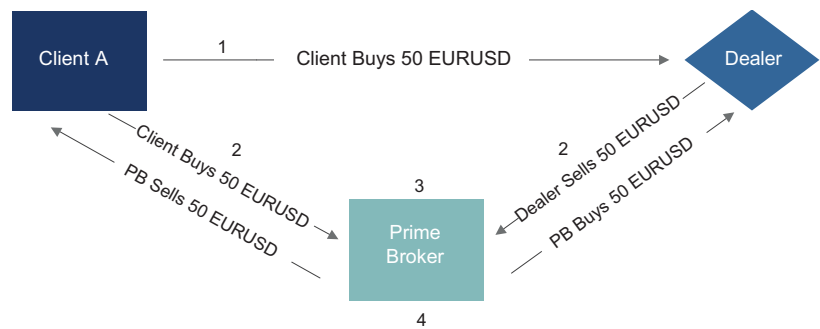


**RISK MITIGATION: PRIME BROKERAGE**

An FX prime broker differs from a traditional equity prime broker in that its primary function is to step between the client and FX dealer for all eligible transactions. It is not a structure that is designed to provide financing or increase leverage. In Figure 6, we see an example of the process for a trade involving an FX prime broker:

1. Client executes FX order with dealer
2. Client and dealer notify the prime broker of the transaction
3. Prime broker confirms, reconciles, and accepts the transaction
4. Prime broker breaks the original trade and books offsetting trades between itself and the dealer, as well as itself and the client

Figure 6



The resulting positions are shown in Figure 7 clearly indicating that the counterparty credit exposure has been fully transferred from the dealer to the FX prime broker. The previous example can be expanded to include multiple dealers and multiple

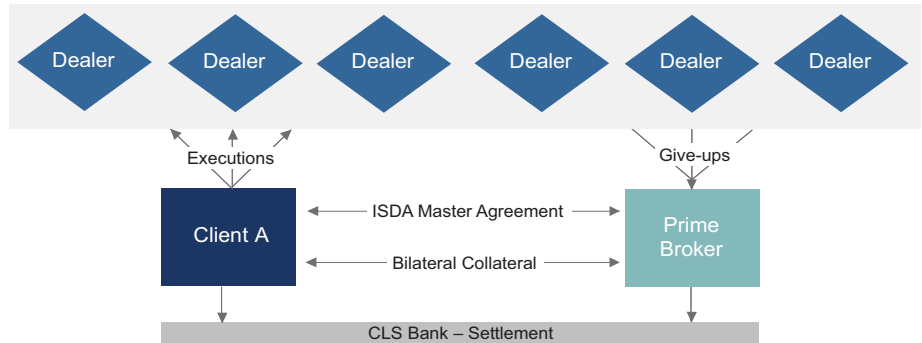
Figure 7



transactions, rendering all of the inefficiencies of the direct dealing model moot. A client can now access the entire dealer market and maintain (Figure 8):

- Single ISDA Master Agreement, CSA, and prime brokerage document
- Single-credit relationship
- Multiple-dealer accessibility
- Centralized settlement through CLS

Figure 8



### RISK MITIGATION: DUAL PRIME BROKERS

The remaining risks in the prime brokerage structure are the concentration of positions and documentation with a single counterparty. If a client's prime broker were to experience a disruption to its business model, then the client is left without the ability to transact. However, the financial loss would be tightly controlled because of the bilateral exchange of collateral between the client and the prime broker.

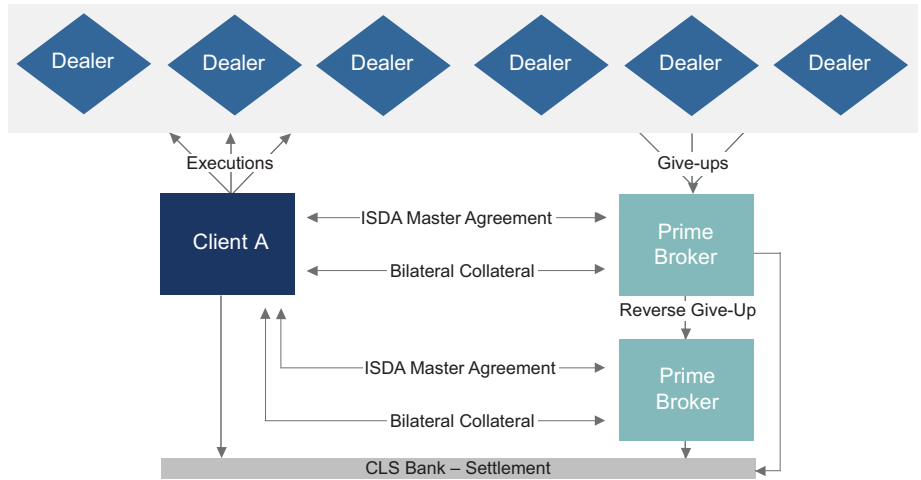
### Multiple Prime Brokers

To overcome the operational risks of a single clearing entity, Mellon Capital currently employs multiple FX prime brokers for its collective and hedge funds. Accounts with similar strategies are assigned to different prime brokers. This is done to mitigate the concentration risk. Because Mellon Capital maintains ISDAs, CSAs, and prime brokerage documents with multiple entities, it is relatively easy and quick to migrate or open new accounts. So if one prime broker defaulted, Mellon Capital's dealing lines for the funds we manage could, we believe, be replaced expeditiously.

### The Reverse Give-Up

Some clients may not have the same scale as Mellon Capital and may not be able to diversify the operational risk through multiple accounts. In response, the market created the reverse give-up. This is a highly efficient process where a primary prime broker receives all intermediated executions from the dealer community. It then will give up a percentage of all trades to a second prime broker through a reverse give-up process. An outline of the workflow is covered in Figure 9:

Figure 9

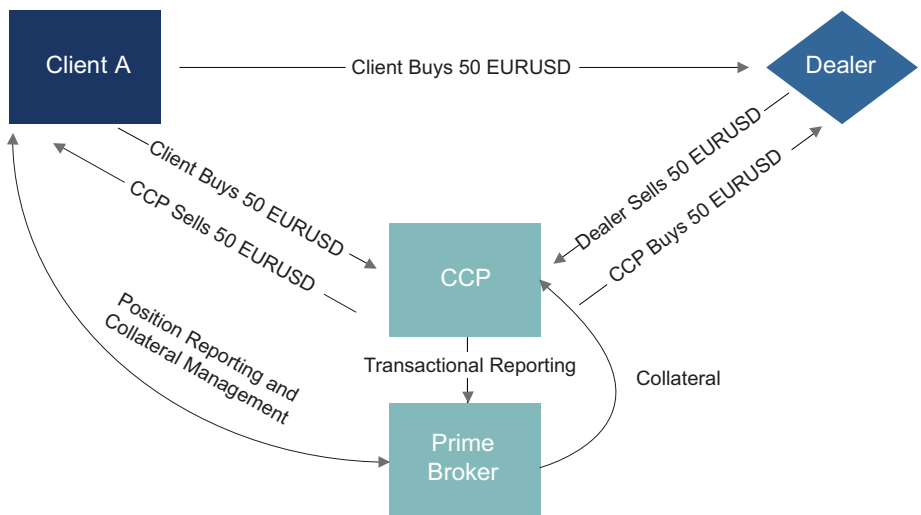


Through the reverse give-up process, a client is able to maintain operational diversity and still participate in the efficiencies gained through an FX prime brokerage structure. If one prime broker fails, the second prime broker can take over. The client is afforded the proper time to establish another "second" prime broker.

**RISK MITIGATION: EXTREME DODD-FRANK EXAMPLE**

An extreme interpretation of the Dodd-Frank legislation is mandatory clearing of all FX derivative transactions by a central counterparty clearing house (CCP)<sup>4</sup>. In Figure 10, we show an example of the expected trade workflow illustrating how an FX prime broker could fit into this model. Rather than have the prime broker step into an execution, the dealers would post their executions at the CCP. The CCP would then notify the prime broker (or Derivatives Clearing Merchant) of the transaction. The prime broker would then match its transactions with its clients.

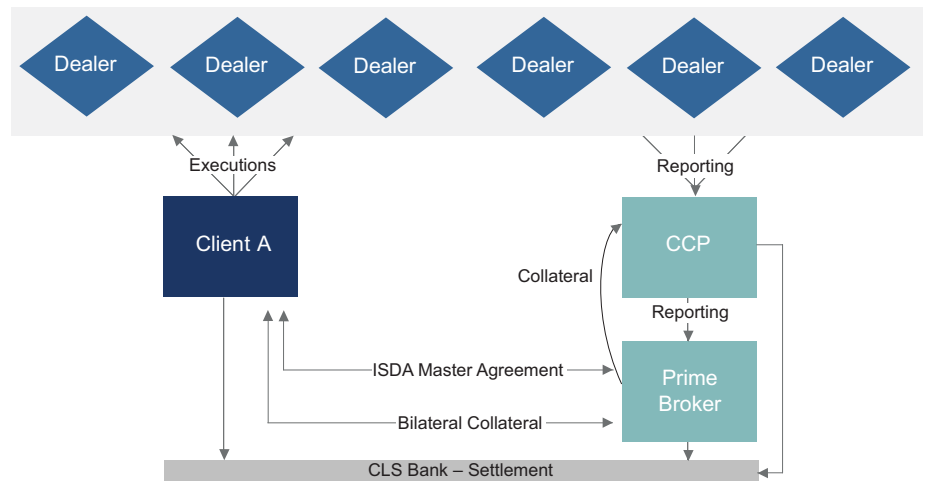
Figure 10



4. U.S. Treasury Secretary, Timothy F. Geithner, recently offered a proposal for the application of the Dodd-Frank legislation to the foreign exchange derivatives markets. At the publishing of this paper, the proposal remained open for comments by Congress. Further, the European Commission has yet to issue its application of OTC derivative legislation to the FX markets. Therefore, while the future state of the FX Market structure is becoming clearer, we can still only speculate as to its final state.

Under this assumption, the CCP fits nicely into an existing FX prime brokerage structure and would require very little effort on the part of the client to comply with any new regulations. In a multi-dealer environment, the structure would look similar to the following (Figure 11):

Figure 11



### SUMMARY

The financial crisis of 2008 was a reality check reminding investors of the seriousness of counterparty risk. Fortunately, investors participating in the FX forwards markets already have the tools available to mitigate a significant amount of counterparty risk. Investors do not need to wait for the regulators to interpret and apply the Dodd-Frank Bill and develop a new market structure. In our view, if the regulatory changes currently being considered are implemented, it will only supplement the existing foreign exchange market structure and not dramatically change it.

Therefore, it may be prudent for investors in the FX forward markets to trade under an ISDA Master Agreement and CSA, settle forward transactions through CLS (whenever available), and leverage the services of an FX prime broker, when appropriate.



**ABOUT US**

**Mellon Capital – Global. Insightful. Engaged.** Mellon Capital has provided global multi-asset solutions for nearly thirty years. Our precise understanding of world markets, coupled with our fundamentals-based and forward-looking analytical methods are the foundation for tailored client solutions. Our investment capabilities range from indexing to alternatives with the infrastructure and skill to transact in all liquid asset classes and securities.

**CONTACT INFORMATION**

BUSINESS DEVELOPMENT  
Sheryl Linck, Managing Director  
412.234.9439  
sheryll@mcm.com

CLIENT SERVICE  
David Dirks, Managing Director  
617.248.4562  
davidd@mcm.com

CONSULTANT RELATIONS  
Andy Pellegrino, Managing Director  
412.234.1909  
andy@mcm.com

**PRIMARY LOCATIONS**

PITTSBURGH, PA  
BNY Mellon Center  
500 Grant Street  
Pittsburgh, PA 15258  
412.234.7500

BOSTON, MA  
BNY Mellon Center  
201 Washington Street  
Boston, MA 02108  
617.248.4500

SAN FRANCISCO, CA  
HEADQUARTERS  
San Francisco  
50 Fremont Street  
Suite 3900  
San Francisco, CA 94105  
415.546.6056

ONLINE  
[www.mcm.com](http://www.mcm.com)

This publication reflects the opinion of the authors as of the date noted and is subject to change without notice. The information in this publication has been developed internally and/or obtained from sources we believe to be reliable; however, Mellon Capital does not guarantee the accuracy or completeness of such information. This publication is provided for informational purposes only and is not provided as a sales or advertising communication nor does it constitute investment, legal or other advice or a recommendation for any particular investment product or strategy for any particular investor and should not be relied upon. Economic forecasts and estimated data reflect subjective judgments and assumptions and unexpected events may occur. Therefore, there can be no assurance that developments will transpire as forecasted in this publication. Past performance is not an indication of future performance. Recipients are advised to consult with their own legal advisors.

Mellon Capital Management and its abbreviated form Mellon Capital are service marks of Mellon Capital Management Corporation.

No part of this article may be reproduced in any form, or referred to in any other publication without express written permission of Mellon Capital.