

Collateral Map Recommendation

Recommendation: The Financial Services and Risk Management (FS&RM) Subcommittee recommends that the Office of Financial Research (OFR) consider building and populating collateral maps that depict the flow of collateral among market participants, their inter-linked relationships, and potential pressure points for key sectors of the financial market. The Subcommittee has developed a proof-of-concept for such a map outlining the flow of collateral to and from a Securities Lending Agent and to and from a derivative user, a Futures Commission Merchants (FCMs), and Derivative Clearing Organizations/Central Clearing Participants (DCOs/CCPs).

Further, the Subcommittee recommends that the OFR focus attention on understanding the risks inherent in the flows of financial collateral, including the impact of large scale collateral liquidations, maturity mismatch risk between the terms of the collateral and the implicit liability being collateralized, the non-linear risks created by “semi-collateralized” exposures, and the potential risks associated with collateral transformation.

Background:

The Financial Research Advisory Committee (FRAC) previously recommended that the OFR develop a series of funding maps to highlight the sources and uses of funds, access to liquidity, and inter-linkages of participants in different sectors of financial markets, based on a proof-of-concept map that the Committee developed for the flow of funds to and from U.S. broker-dealers. Building on the prior recommendation, the FS&RM Subcommittee is now proposing that the funding maps be extended to highlight the flow of collateral in key market sectors.

The use of collateral is widespread and often flows in the opposite direction of funding. Some of the more significant uses of financial collateral include securing:

- short-term financing in the repo market,
- hedge fund activity through prime brokerage accounts,
- securities lending transactions,
- derivatives credit exposures, and
- cleared trades (via margin requirements).

Collateral played a prominent role in the financial crisis, in some cases contributing to and in other cases mitigating risks to market participants. Since the crisis, the required use of collateral has become more widespread. Under Dodd-Frank, the requirement to clear derivatives will increase the demand for high-quality collateral that is eligible for posting at central clearinghouses.

Given the heightened role of financial collateral, the Subcommittee established a Collateral Working Group to examine whether the funding map construct could be extended to the flow of collateral. The Working Group, in turn, developed two collateral flow maps as proofs-of-concept:

- **A Securities Lending Collateral Flow Map** (attached), which highlights key relationships and risks associated with the flow of collateral in securities lending transactions. The map depicts the movement of collateral from Lenders (Pensions, Sovereigns, Mutual Funds, etc.) through Securities Lending Agents and Borrowing Intermediaries (Broker-Dealers) to End Borrowers (Hedge Funds, Broker Dealers, Asset Managers etc.). It also highlights transaction flows that are by-products of securities lending for reinvestment of cash collateral, repo reinvestment, and cleared futures/derivatives trading.
- **A Cleared Swaps Customer Collateral Map** (attached), which provides a detailed view of the flows and processes related to the use of collateral to support the clearing of futures (and prospectively, derivatives) trades. The map follows collateral flows among three main parties: Asset Managers/Clients, FCMs, and DCOs/CCPs. The Working Group views collateral transformation – or the exchange of lower quality collateral for higher-quality collateral eligible for posting with CCPs – as a potential hidden risk which may partially undermine the systemic impact of the collateral quality requirements mandated for DCOs/CCPs by the Dodd-Frank Act.

Both maps are appended as attachments. Among other risks, the maps highlight the main stresses inherent in collateral flows: large scale collateral liquidation, maturity mismatch risk, non-linear risks created by “semi-collateralized” exposures, and collateral transformation.

Benefits:

The collateral maps depict the flow of collateral among market participants and can be used to identify key linkages, concentrations, inter-dependencies, risks, and potential pressure points in future systemic crises. Key features of the maps include:

- Simple view of business activities performed by financial market participants
- Directional display of the exchange of collateral between participants
- Detailed view of the collateral transformation process in dealings with a CCP
- Defined dependencies of participants in futures trades requiring high quality collateral
- Identification of risk propagation mechanisms for securities financing transaction flows



Securities Lending Collateral Flow Map

- **FSRM Collateral Working Group**
- **Office of Financial Research**
- **Discussion Document**

January 2014

Document Overview:

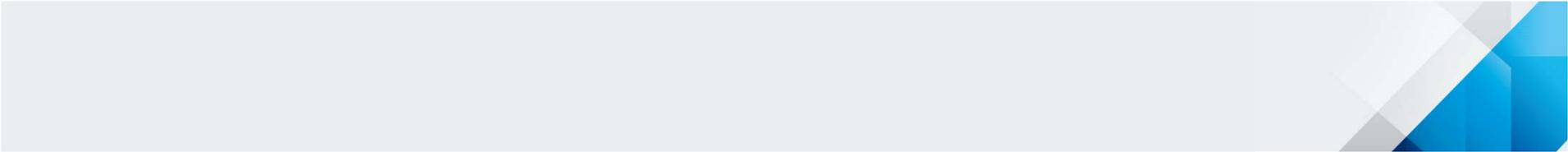
Purpose:

The purpose of this document is facilitate a discussion of securities lending collateral flows. The Securities Lending Collateral Flow Map depicts the flow of collateral associated with securities lending transactions, and risk propagation along the collateral chain. It is intended to illustrate the recommendations of the Collateral Working Group, and should be read in conjunction with the background memo produced by the Group.

There are three views of the Securities Finance Collateral Flows presented:

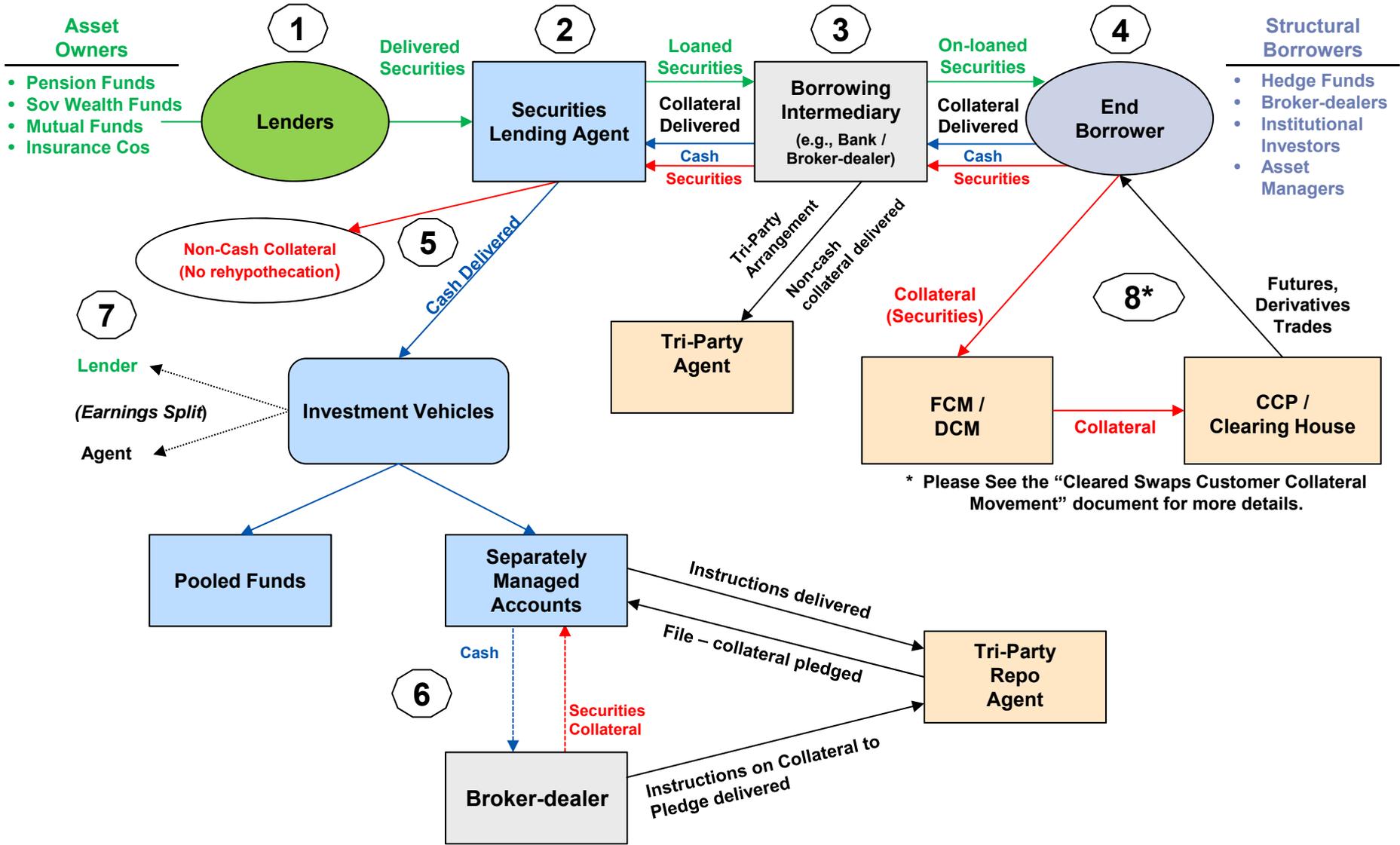
- The Base View of the Securities Finance Collateral Flow
- The Credit and Reinvestment Risk View
- The Maturity Transformation, Collateral Transformation and Collateral Liquidation Risks View

Each of the above views has an accompanying legend. Additionally, a brief Glossary of Terms used in this document can be found on the last page.



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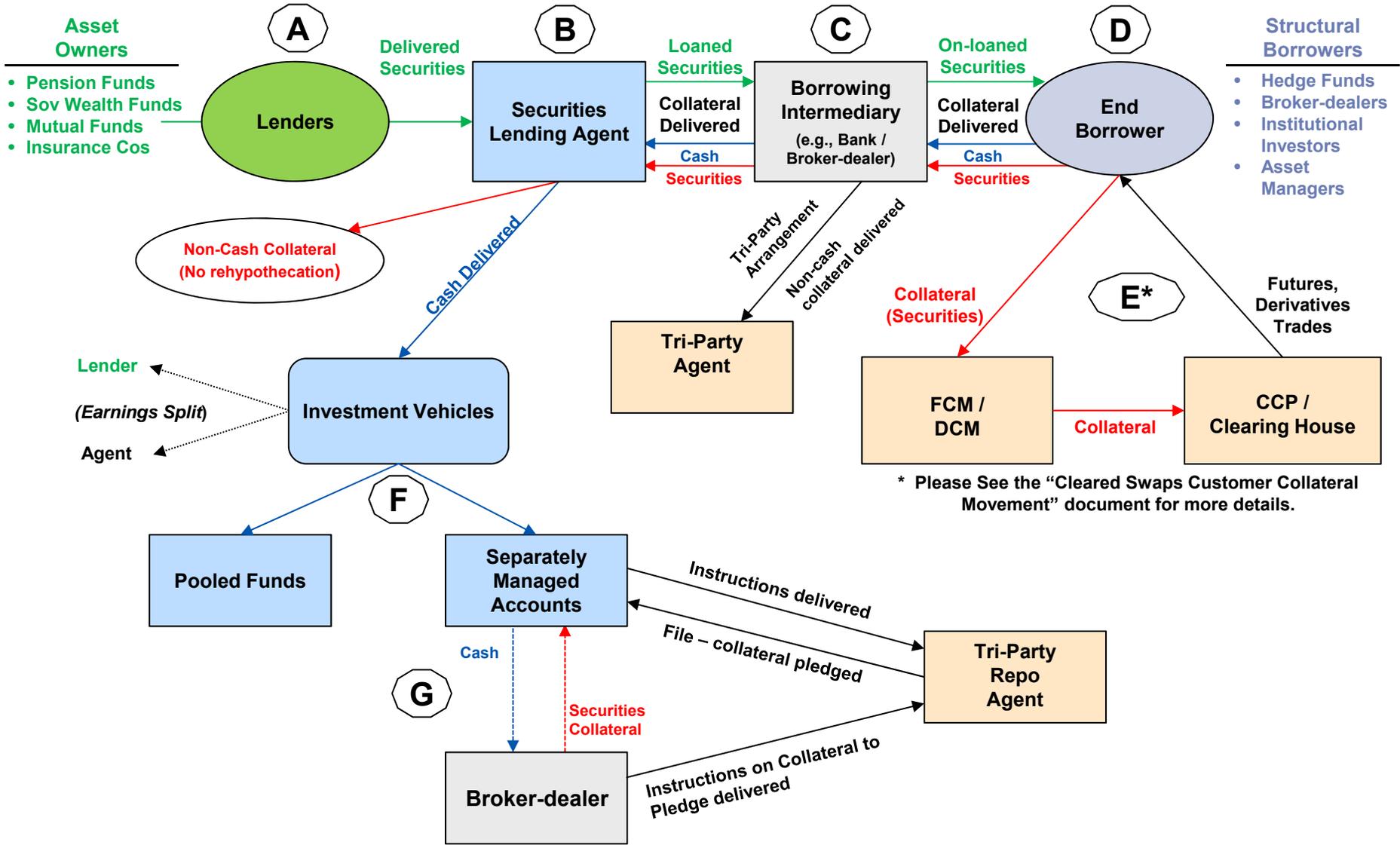
Securities Finance Collateral Flows



Securities Finance Collateral Flows Legend

1. Institutional investors lend securities, including Treasuries/agencies, sovereigns, fixed income, equities, and other securities, through agent banks in return for fees and income on the reinvestment of cash collateral
2. Agent banks indemnify lenders against borrower default and guarantee the return of securities
3. Banks and broker-dealers borrow securities, either for their own use or on behalf of end-borrowers, and in return pledge either cash or non-cash collateral (generally Treasuries/agencies, investment grade fixed income, or equities) to secure return of securities. Trades can be executed on a bi-lateral basis, with loans and collateral moving directly between the Lending Agent and the Borrowing Intermediary, or on a Tri-Party basis with the non-cash collateral delivered to, held by and administered by the Tri-Party Agent per instruction schedules from the Agent
4. Borrowed securities are on-lease to end borrowers, including hedge funds and other institutional investors, in return for collateral securing return of borrowed securities
5. *Cash Reinvestment Flows*: Cash collateral posted by securities borrowers is reinvested in either commingled vehicles or separate accounts
6. *Tri-party Repo Flows*: Cash collateral reinvested in separate accounts is sometimes re-loaned to broker-dealers in the tri-party repo market, in return for collateral
7. Returns from reinvested cash collateral are shared between the agent bank and securities lenders
8. *Futures / Derivatives Clearing Flows*: Hedge funds and other institutional investors can use borrowed securities to post collateral with FCMs, to secure cleared futures (and prospectively, derivatives) trades with central clearinghouses. Please see the "Cleared Swaps Customer Collateral Movement" document for more details

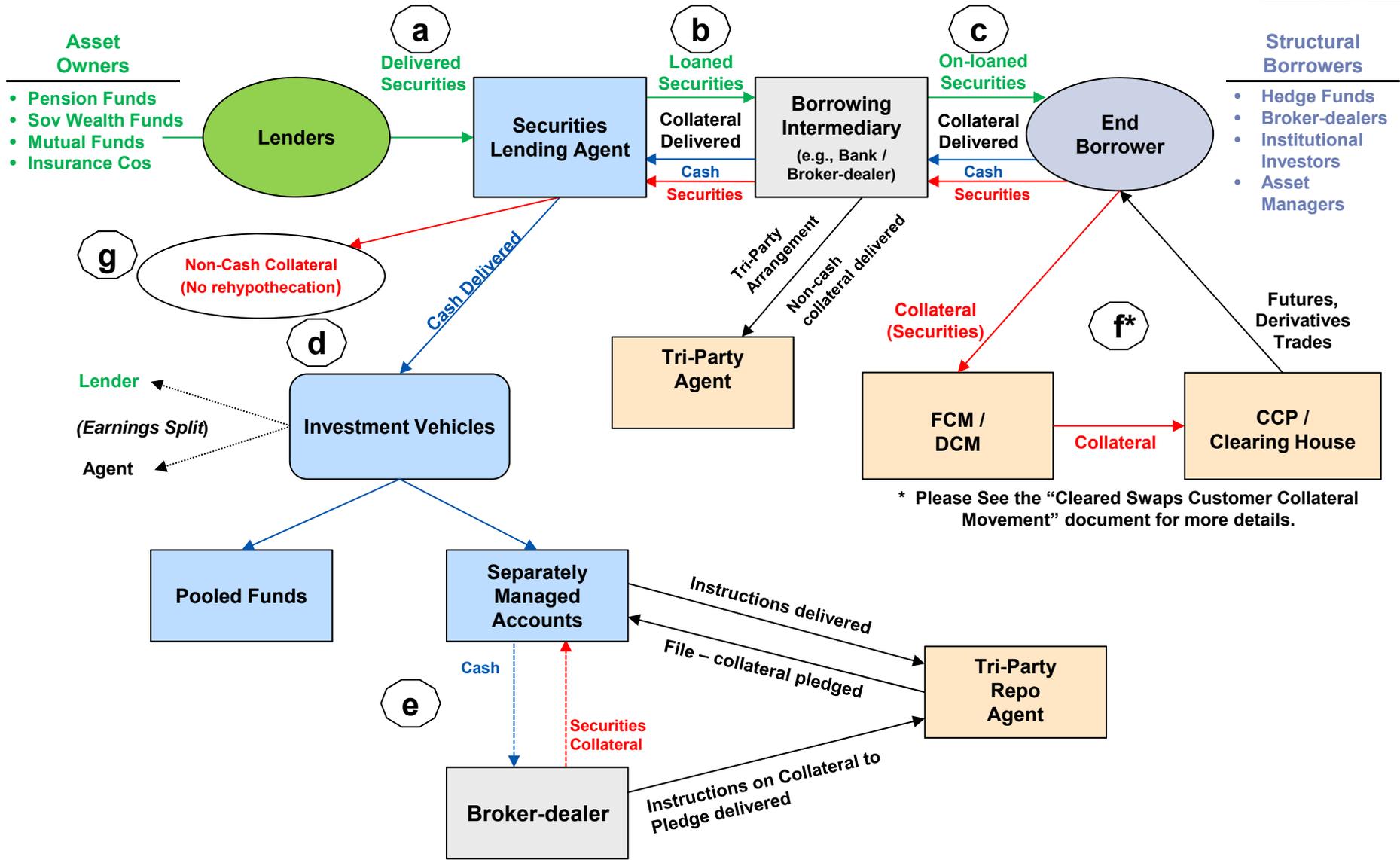
Securities Finance Risk Propagation: Credit and Reinvestment Risk



Securities Finance Risk Propagation: Credit and Reinvestment Risk Legend

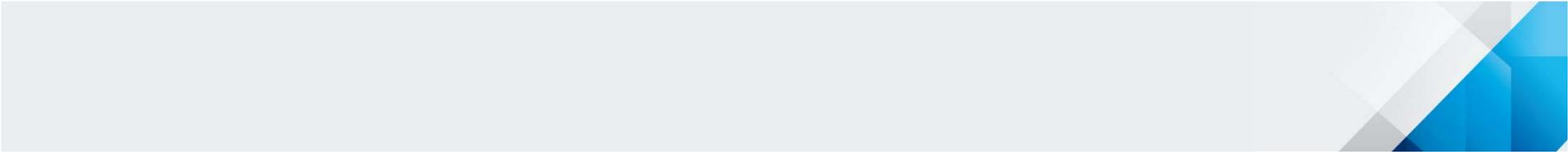
- A. Asset owner (Lender) assumes credit risk of non-return of securities by borrowing intermediary (bank/broker-dealer). This risk is typically indemnified by the Securities Lending Agent, so the risk to the asset owner is double default risk: both the Borrowing Intermediary and Securities Lending Agent need to default for the Lender to incur a loss on securities loaned
- B. In indemnified securities lending transactions, the Securities Lending Agent assumes risk of non-return of securities from Borrowing Intermediary. In the event of default (e.g., Lehman), the Securities Lending Agent can immediately liquidate collateral to buy back securities loaned in the market and return them to the Lender. The risk is that the value of collateral pledged by the Borrowing Intermediary is insufficient to cover the cost of returning the securities to the Lender
- C. Borrowing Intermediary assumes the risk of on-lending securities to End Borrowers, such as hedge funds, typically through prime brokerage accounts. Borrowing Intermediaries are exposed to the extent that the collateral received from the End Borrower is insufficient to cover the cost of returning securities to the Securities Lending Agent or Lender. This risk exists whether the trade is structured on a bi-party or tri-party basis. Hedge funds may also be exposed to the Borrowing Intermediary to the extent that excess collateral pledged is not held in a segregated custody account (e.g., Lehman London)
- D. End Borrowers engaging in cleared futures or derivatives trades may use borrowed securities to post as collateral with FCMs to cover margin requirements. The FCM assumes credit risk of customer default, and is exposed to the extent that collateral posted is insufficient to cover open positions. Customers may also be exposed to default of an FCM in the event collateral is pledged and not held in segregated customer accounts (e.g., MF Global)
- E. FCM posts collateral to secure customer trades with CCP. CCP is exposed to default of FCM if collateral is insufficient to cover open customer positions; FCM is exposed to default of CCP if another FCM failure imposes losses that exceed the CCP's clearing fund. Please see the "Cleared Swaps Customer Collateral Movement" document for more details
- F. Cash collateral is reinvested by Securities Lending Agent in either pooled vehicles or separate accounts, subject to investment mandates agreed between the Securities Lending Agent and the Lender. With the exception of indemnified repos (see below), the investment risk is borne by the Lender. Investment risk entails maturity transformation (loans are typically callable overnight but cash is reinvested longer); as well as associated interest rate, spread, and credit risk on underlying investments
- G. Cash collateral reinvested through Securities Lending Agents in separate accounts may be invested in repo transactions through Tri-Party Repo Agents. The Lender (asset owner) bears the risk of default by the repo borrower (typically a broker-dealer), unless indemnified by the Securities Lending Agent. If indemnified, the risk is borne by the Securities Lending Agent

Securities Finance Risk Propagation: Maturity Transformation, Collateral Transformation and Collateral Liquidation Risks



Securities Finance Risk Propagation: Maturity Transformation, Collateral Transformation and Collateral Liquidation Risks Legend

- a,b,c. Securities loans can be of shorter maturity (often overnight) than the underlying open position they are intended to cover. This leads to maturity transformation risk as the borrower will need to refinance the position with another loan if the initial loan is not rolled over. Maturity transformation can occur between the Lender and the Securities Lending Agent (which may pledge loans on a term basis); between the Securities Lending Agent and the Borrowing Intermediary (the Intermediary may be borrowing short-term against a long-term position in the expectation of being able to roll-over loans); and between the Borrowing Intermediary and the End Borrower (similarly, the end-borrower may be borrowing short-term on the expectation of being able to roll-over loans)
- d. Maturity mismatch risk arises in the reinvestment of cash collateral. The duration of the reinvestment pool is typically longer than the contractual maturity of securities loans (which is often overnight)
- e. Maturity mismatch can exist in term repo transactions. Repo financing may be committed for a longer term than the underlying securities lending transactions
- f. Collateral transformation risk is associated with the upgrade of collateral by borrowers. Borrowers that need high quality collateral (e.g., Treasuries, agencies) to post with FCMs/Clearinghouses to support cleared trades may obtain the required collateral by borrowing it and pledging lower-quality or ineligible collateral (e.g., high yield debt) in return. Differences in collateral haircuts are intended to reflect the relative price risks associated with the different forms of collateral. Collateral transformation risk exists to the extent that the collateral haircuts are insufficient to cover the price risk of different types of collateral in a closeout situation. Please see the “Cleared Swaps Customer Collateral Movement” document for more details.
- g. Collateral liquidation risk exists throughout the collateral flow chain. To the extent that holders of collateral seek to liquidate collateral in a closeout situation en masse, they can contribute to a fire sale. Fire sale conditions, in turn, can mean that collateral haircuts – which are often slow to respond to changing market conditions – may be insufficient to protect against loss on the exposure being collateralized



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Glossary

Lender: Lenders are owners of securities (asset owners) which lend securities through Securities Lending Agents. Lenders typically include pension funds, sovereign wealth funds, insurance companies, and other asset managers.

Securities Lending Agent: Securities Lending Agents act as agents on behalf of Lenders in lending securities and managing collateral on their behalf. Custody bank typically act as Securities Lending Agents on behalf of their custody clients. Non-custody banks and asset managers can also act as Securities Lending Agents.

Borrowing Intermediary: A Borrowing Intermediary is the direct counterparty in a securities lending transaction, and is typically a bank or broker-dealer.

End Borrower: End Borrowers are the ultimate borrowers in securities lending transactions. Borrowing Intermediaries can be the end-borrower when they borrow for their own account. They can also on-loan securities (and receive collateral) from other End Borrowers, including hedge funds or other asset managers.

FCM/DCM: FCMs are authorized to trade on futures exchanges and are members of Futures Clearing Houses. DCMs are members of Derivatives Clearinghouses.

CCP/Clearinghouse: Central Counterparties or Clearinghouses are clearing organizations that provide for central clearing of futures or derivatives trades and mutualization of risk among clearing members.

Tri-Party Repo Agent: Tri-Party Repo Agents act as an intermediary in managing the flow of cash and collateral between parties to a repo transaction.



Cleared Swaps Customer Collateral Map

**FSRM Collateral Working Group
Office of Financial Research**

Discussion Document

January 2014

Discussion Roadmap:

The purpose of this document is to:

- Outline the movement of collateral for customer trades for cleared swap derivatives in order to provide a road map of areas where collateral transformation can take place
- Highlight points in the collateral movement process where there is a potential for collateral transformation

There are three examples presented:

Example 1: Collateral movement for a newly executed trade with no market change impact

Example 2: Collateral movement for an existing trade due to market change impact

Example 3: Collateral movement for a newly executed trade with market change impact

These examples will demonstrate:

- The movement of collateral
- Points of potential collateral transformation
- The conversion of single customer collateral into pools of aggregate collateral
- The conversion to monetary value as it flows from customers custodian to Derivative Clearing Organization (DCO) / Central Clearing Participant (CCP)
- The interaction the Futures Commission Merchant (FCM) has with both the DCO/CCPs and the Asset Manager/Client

Types of Margin

There are four main type of margin requirements involved in cleared swap transactions:

1. *Initial Margin* – Margin requested at inception of trade in order to collateralize the position against losses in case of liquidation of position
2. *Variation Margin* – Margin requested / returned due to movement in the market
3. *Excess Margin* – Additional margin held for operational ease, pre-funding or credit risk management
4. *Non-hedge Margin* – Margin request from clients that are using swaps for purposes other than hedging (a form of excess margin)

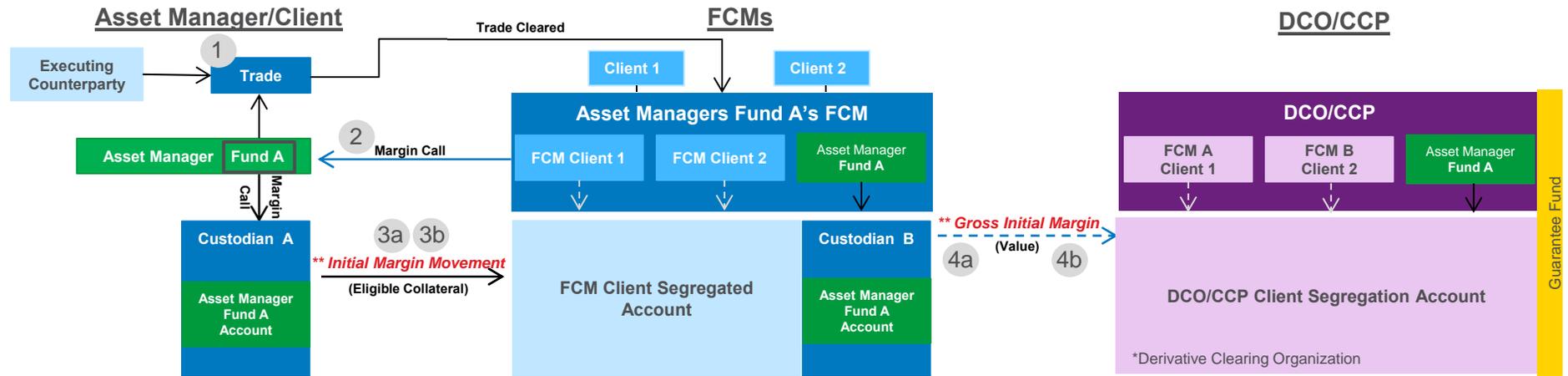
Note:

- ▶ **Margin calls must be met by posting eligible collateral defined by the DCO*/CCP**
- ▶ **Variation margin is always met by posting cash collateral**

*Derivative Clearing Organization

Example 1:

Collateral movement for a newly executed trade with no market change impact



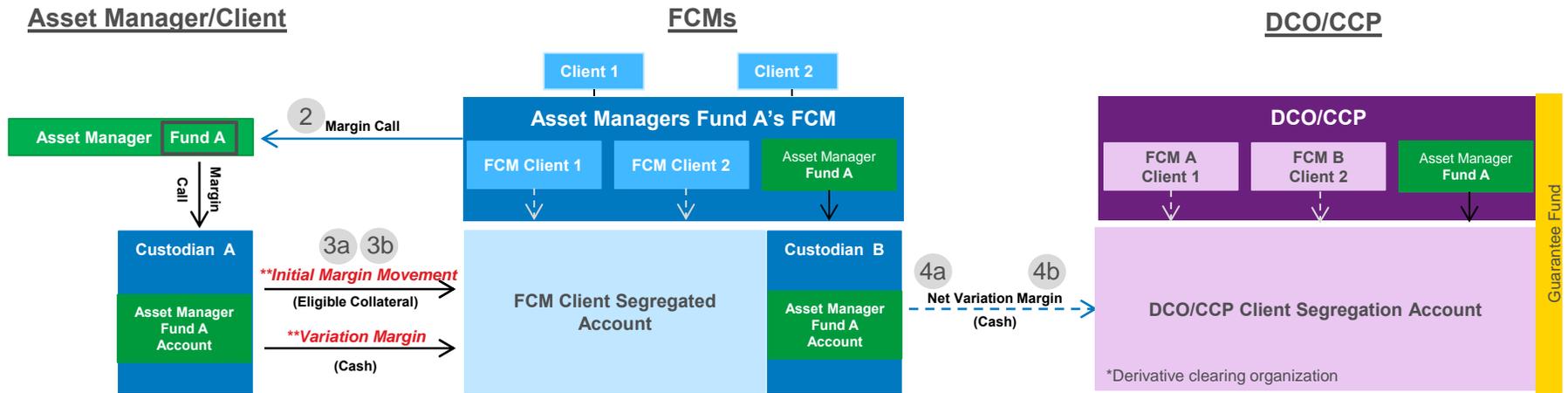
** Points for potential collateral transformation

- 1 Asset manager executes cleared swap as agent on behalf of FUND A and it clears successfully
 - FUND A FCM posts required *initial margin (IM)* for cleared swap on trade date (T+ 0) so that DCO/CCP is risk neutral
- 2 FUND A FCM sends margin call for collateral to asset manager which is due on trade date + 1 day (T+1)
- 3a Asset manager sends instructions to FUND A CUSTODIAN A to post eligible collateral to the depository holding the client segregated account for the FCM
- 3b FUND A FCM receives eligible collateral for FUND A from FUND A custodian on T+1
 - FUND A FCM receives similar collateral from all of it's clients for all DCOs/CCPs where margin is applicable
- 4a FCM posts *gross initial margin* for each DCO/CCP in the form of eligible collateral on behalf of all client positions processed by the FCM with the depository holding the DCO/CCP client segregated account
- 4b DCO/CCP receives eligible collateral for initial margin purposes from the FCM
 - DCO/CCP receives similar collateral from all of its FCMs on behalf of their customer positions

NOTE:

- ▶ The FCM is not required to post the collateral posted by the client to the DCO/CCP for the client position
- ▶ The client collateral is converted to monetary value of posted collateral when posted to the DCO/CCP

Example 2: Collateral movement for an existing trade due to market change impact



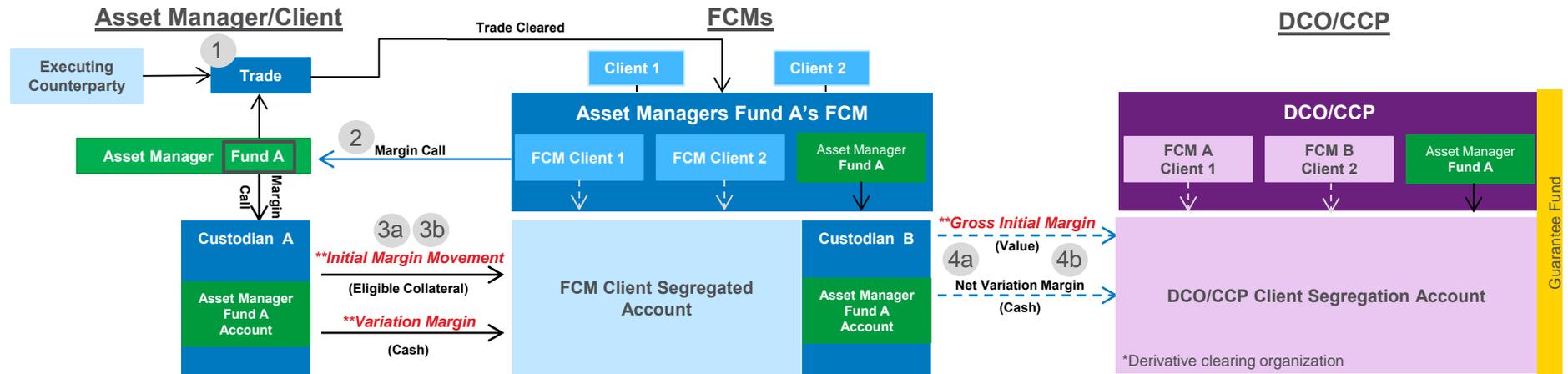
** Points for potential collateral transformation

- Asset manager FUND A has an existing cleared swap position whose value moved due to market change
- 2 FUND A FCM sends variation margin (VM) call for collateral to asset manager which is due next day
FUND A FCM posts required variation margin (VM) for cleared swap on behalf of FUND A by end of day
- 3a Asset manager sends instructions to FUND A CUSTODIAN A to post eligible collateral (cash) to the depository holding the client segregated account for the FCM
- 3b FUND A FCM receives eligible collateral (cash) for FUND A from FUND A custodian by next day
 - FUND A FCM receives similar collateral from all of its clients for all DCOs/CCPs where margin is applicable
- 4a FCM posts net variation margin for each DCO/CCP in the form of eligible collateral (cash) on behalf of all client positions processed by the FCM with the depository holding the DCO/CCP client segregated account
- 4b DCO/CCP receives eligible collateral for variation margin purposes from the FCM
 - DCO/CCP receives similar collateral from all of its FCMs on behalf of their customer positions

NOTE:

- ▶ The FCM is not required to post the collateral posted by the client to the DCO/CCP for the client position
- ▶ The client collateral is converted to monetary value of posted collateral when posted to the DCO/CCP

Example 3: Collateral movement for a newly executed trade with market change impact



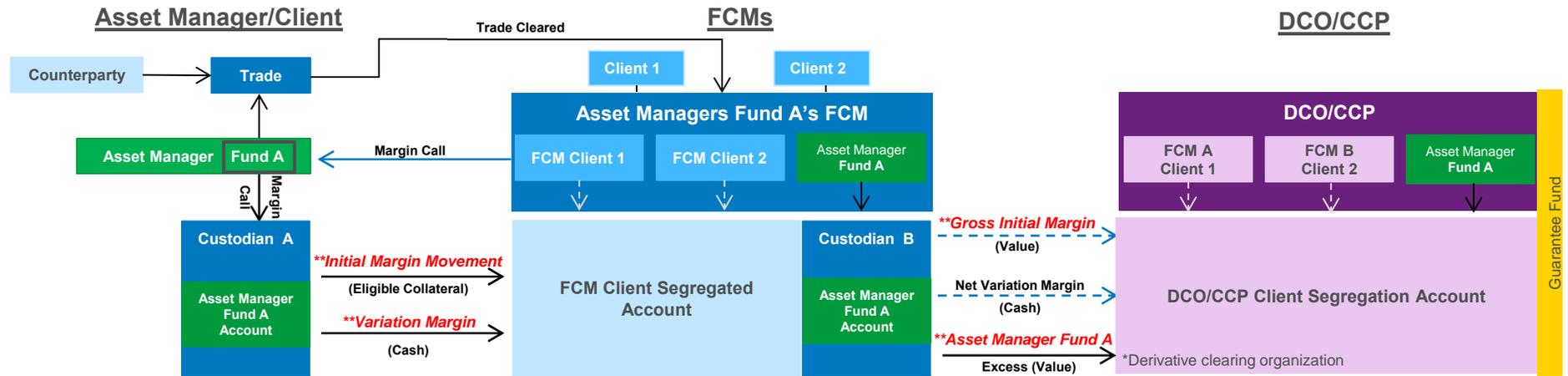
** Points for potential collateral transformation

- Asset manager executes cleared swap as agent on behalf of FUND A and it clears successfully
 - FUND A FCM posts required initial margin (IM) and variation margin (VM) for cleared swap on trade date (T+ 0)
- FUND A FCM sends margin call for collateral to asset manager which is due on trade date + 1 day (T+1)
- Asset manager sends instructions to FUND A CUSTODIAN A to post eligible collateral for initial margin and cash for variation margin to the depository holding the client segregated account for the FCM
 - FUND A FCM receives eligible collateral for FUND A from FUND A custodian on T+1
 - FUND A FCM receives similar collateral (initial margin and variation margin) from all of it's clients for all DCOs/CCPs where margin is applicable
 - FCM posts gross initial margin for each DCO/CCP in the form of eligible collateral on behalf of all client positions processed by the FCM with the depository holding the DCO/CCP client segregated account
 - FCM posts net variation margin for each DCO/CCP in the form of eligible collateral (cash) on behalf of all client positions processed by the FCM with the depository holding the DCO/CCP client segregated account
- DCO/CCP receives eligible collateral for initial margin purposes from the FCM
 - DCO/CCP receives similar collateral from all of its FCMs on behalf of their customer positions

NOTE:

- ▶ The FCM is not required to post the collateral posted by the client to the DCO/CCP for the client position
- ▶ The client collateral is converted to monetary value of posted collateral when posted to the CCP

Risks to Customer Margin



** Points for potential collateral transformation

Risks at FCM

- ▶ All client funds posted at the FCM for all US swap DCOs/CCPs, including excess, are invested as a single pool under CFTC Rule 1.25. Clients can only request different treatment if utilizing physical segregation via a custodian account (see CFTC Interpretation 10, LSOC 22.2 in Appendix E).
- ▶ Margin at the FCM is subject to investment risk only in the event of an FCM default resulting in a shortfall in the customer segregation account. Remaining funds would be distributed pro rata (including any funds held in a custodian account, per CFTC Interpretation 10 in Appendix E).

Risks at DCO

Investment Risk:

- ▶ Initial and excess margin at the DCO/CCP are subject to investment risk (CFTC Rule 1.25) only in the event of a DCO/CCP default resulting in a shortfall in the customer segregation account, at which point losses are shared pro rata.

Default Risk:

- ▶ The DCO/CCP only knows the value of funds (IM and excess) attributable to each of the FCM's clients, not their composition. In a portability situation in which the DCO/CCP is forced to liquidate all non-cash margin posted by an FCM's clients, it is possible the assets ported will be of lesser value than those posted due to liquidation risk.
- ▶ If haircuts applied to eligible collateral are not aggressive enough, the value of the pool could prove to be too small during a market dislocation in which assets are liquidated below expected levels.



Appendix

Appendices

Appendix A: Excess margin and why it exists?

Appendix B: Complexity of custodian usage

For information purposes:

Appendix C: Key points on collateral movement between FCM and DCO/CCP

Appendix D: Key points on collateral / margin treatment at DCO/CCPs

Appendix E: Recent rules and interpretations that impact collateral management

Appendix A: Excess margin and why it exists?

Excess margin is additional margin that may be kept or required at the FCM or the DCO/CCP

I. Reasons for excess margin to exist include:

- Operational efficiency to reduce small transfer of margin
- Pre-funding of potential margin obligation
- Additional margin requested above the minimum required by the DCO/CCP by the FCMs based on client creditworthiness

II. Client options for collateral protection for excess margin:

- Clients can request excess margin to be placed at the DCO/CCP versus kept at the FCM
- Clients can also request excess margin to be placed in physically segregated accounts, however this segmentation does not protect against pro rata loss due to the default of the FCM

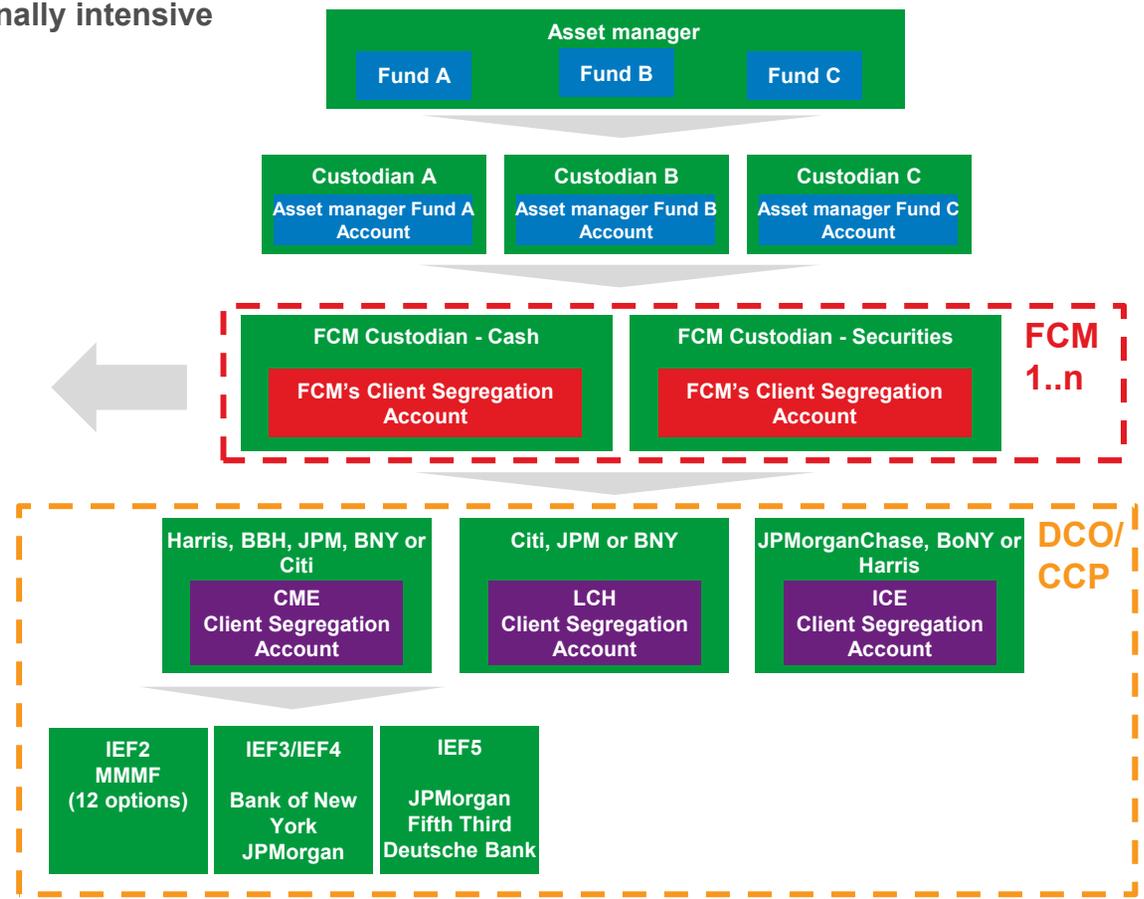
III. FCM collateral rights

- The FCM is not required to ask the client's permission regarding how funds are invested
- Re-hypothecation is permitted under certain circumstances: Cash, Repo transactions under Regulation 1.25, to post "value" of required margin at the clearing house

Appendix B: Complexity of custodian usage

- ▶ Collateral used to post margin ultimately resides at the custodian(s) used by the given FCM and DCO/CCP (see right).
- ▶ The matrix of custodians used by clients, FCMs and DCOs/CCPs can be quite complex and the movement of collateral among custodians is an operationally intensive process

FCM	Primary Cash Custodian	Primary Securities Custodian
FCM 1	Custodian 1 Custodian 4	Custodian 2 Custodian 3
FCM 2	Custodian 5 Custodian 6	Custodian 7 Custodian 8
FCM 3
FCM 4
FCM 5



Appendix C:

Collateral Movement between the FCM and DCO/CCP – Key Points

FCMs must post initial margin to the DCO/CCP that is the gross of all of its customers' margin requirements (CFTC Rule 39.13).

- ▶ The FCM must tell the DCO/CCP the value of margin and excess margin posted attributable to each client, but not the specific assets attributable to each client (see CFTC 22.11 and CME Rule 917).
- ▶ FCMs can post any eligible collateral (not just the collateral the client posted) equal the value required by the DCO/CCP (taking haircuts into account).
- ▶ The FCM must follow collateral eligibility limits set by the DCO/CCP across its entire client base pro rata
- ▶ CFTC Rule 39.13(g)(8)(i) does not require that a clearing member only accept from its customers those types of margin assets that are acceptable for the clearing member to deposit with the DCO/CCP.

FCMs can post both house and customer excess margin at the DCO/CCP

- ▶ Excess funds receive the same protection as posted margin. CFTC 22.11: “Cleared Swaps Customer Collateral includes...collateral “voluntarily” deposited by a Cleared Swaps Customer.”
- ▶ FCMs will post the value of customer excess to the DCO/CCP, not necessarily the exact assets (handled the same as initial margin).
- ▶ The FCM must designate an owner of any excess posted to the DCO/CCP, whether a customer or the house account.
- ▶ Excess posted to the DCO/CCP can be invested by the DCO/CCP under Rule 1.25, the same guidelines followed for excess left at the FCM. In practice however, the policies for investing customer funds at the DCO/CCP are more risk averse than those at the FCM.
- ▶ Posting excess at the DCO/CCP exposes the excess to the credit risk of the DCO/CCP (and its custodians) rather than the FCM.

Customer funds from all FCMs are commingled at the DCO/CCP.

- ▶ LSOC 22.3: A derivatives clearing organization may commingle the Cleared Swaps Customer Collateral that it receives from multiple futures commission merchants on behalf of their Cleared Swaps Customers.
- ▶ Funds from FCM house accounts are kept separate from customer funds.

Appendix D:

Treatment of Initial, Variation and Excess Margin at the DCO – Key Points

The DCO has the right to invest posted margin per CFTC Reg 1.25. The DCO retains any gains and is responsible for any losses. With the exception of CFTC Reg 1.25 permissible repo transactions, the DCO cannot rehypothecate client funds (only cash in FCM house accounts).

Examples of DCO/CCP investments:

- ▶ **CME** can, but currently does not invest customer funds. They are also permitted to loan out assets in the DCO/CCP Guarantee Fund, but this is not current practice. FCMs can choose to invest customer funds via the IEF programs offered by the CME. This amounts to customer funds being put in Money Market Mutual Funds (MMMFs) or an overnight repo.
- ▶ **ICE Clear Credit** invests customer funds and the Guarantee Fund in an overnight reverse repo. Per ICE's rules, the following are also permitted: bank deposits, and/or Treasury/Agency reverse repo (with an explicit full faith and credit guarantee of the U.S. Government) and in a case when bank deposits or Treasury/Agency reverse repo become unavailable or are not feasible; select MMMFs
- ▶ **LCH** invests using government securities, tri-party repo and money market funds. Customer funds and the Guarantee Fund are invested similarly; customer funds are in shorter duration assets and guarantee fund in slightly longer duration (~3months)

The DCO/CCP calculates variation margin looking at each individual position and the total margin posted in the FCM's customer account.

- ▶ Variation margin is posted in cash on a net basis by the FCM to the DCO/CCP.
- ▶ For client accounts receiving variation margin, the FCM receives funds from the DCO/CCP, and credits the appropriate client account.
- ▶ Excess posted at the DCO/CCP would limit how much the FCM needs to prefund on an individual client basis, but one client's excess would not benefit another client in any way.

In the event of a double default, the DCO/CCP will first attempt to port the non-defaulting customers' positions to a different FCM(s). If it cannot do so, the DCO/CCP can liquidate customer positions and collateral.

- ▶ Although legally segregated, operational commingling potentially exposes all clients to each other and each other's FCMs in the event of a DCO/CCP default. If the DCO/CCP is forced to liquidate all non-cash margin posted by an FCM's clients, it is possible the funds ported will be of lesser value than those posted due to liquidation risk.

Appendix E:

Recent rules and interpretations that impact collateral management

Rule Text - Physical Segregation of Margin for Cleared Swaps

From Interpretation 10:

The Division is also concerned that persons making use of a safekeeping account may mistakenly expect special treatment in the event of the bankruptcy of the FCM. One of the principal purposes of the Bankruptcy Reform Act of 1978 (11 U.S.C. §101 *et seq.* (1982)) with respect to the bankruptcy of an FCM was to promote equitable treatment of customers and to provide for an across-the-board application of pro rata distribution to all customer commodity accounts whether or not the funds related to such accounts were maintained with separate depositories or otherwise were specifically identifiable. The Division's position is that a safekeeping account or any separate segregated customer funds account could not be used to give a preference to a pension plan, a registered investment company or any other customer in a bankruptcy distribution, and if the issue were to arise in the course of an FCM bankruptcy proceeding, the Division would recommend strongly to the Commission that appropriate actions be taken to ensure that all customers, including institutional customers, are treated equally. The Division recognizes, however, that certain third-party custodial arrangements may create unnecessary confusion on the part of the institution on whose behalf it was established or a reviewing court in the event of an FCM bankruptcy and assuredly would cause additional administrative expenses to be incurred

From final CFTC LSOC rule:

The Physical Segregation Model would work in a manner similar to the LSOC Model. Again, all collateral attributable to customers whose net positions gained or were “flat” (neither gained nor lost), and the remaining collateral attributable to customers whose net positions lost, would be immediately available for transfer. The DCO/CCP would have specific information on how much collateral was, in fact, attributable to each customer. However, because of the ratable distribution requirement, any losses that did exist would be shared ratably among all customers.