# Fundamentals of Clearing

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*Opinions are those of the author, not necessarily of Morgan Stanley

# Clearing Fundamentals

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# Clearing Fundamentals

- Fundamental to clearing is the substitution of a central counterparty through a process called “novation.”
  - The original contractual obligations of the two counterparties to each other are extinguished, and replaced with obligations by and to the central counterparty.
- Characteristics of Central Counterparties (Clearing Organizations or Clearing Houses):
  - Standards for admission and continuing participation.
  - Standardization of product terms.
  - Robust transaction comparison and affirmation.
  - Imposition of collateral requirements on all participants (contrast to “threshold” based bilateral arrangements).
  - Frequent mark-to-market utilizing “objective” valuations.
  - Contingent resources.
  - Oversight.

# Clearing Considerations

- To whom does the clearing house guaranty extend?
  - Typically, only to the direct participants in the clearing process, who are intermediaries called "clearing members." A clearing member could be an end user, but this is relatively uncommon in most existing clearing organizations.
  - If there is an intermediary between you and the clearing organization, your counterparty credit exposure is unchanged.
- Is "risk mutualization" fundamental to clearing?:
  - It is a frequent characteristic, particularly in the U.S.
  - It takes several forms, including:
    - Clearing funds.
    - Capital and retained earnings of the central counterparty.
    - Credit facilities repaid from transaction fees or assessments.
    - N.B.: **only** contingent resources are mutualized, <u>**never**</u> the margin/collateral deposits protecting clearing member positions.
  - A central counterparty can operate without risk mutualization (e.g. ICCH, founded in London in 1888).
  - Default insurance, employed by a number of clearing organizations, can be thought of as "risk syndication" rather than "mutualization."

# Some Operational Considerations

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# An Overview of Clearing Operations

- Transaction comparison and registration
  - Submission to the central counterparty of the key economic determinants of the transaction. Typically, both sides submit. NYMEX clearing and the credit default swaps confirmation process are examples of “sell side” reporting.
  - Acceptance of that transaction by the central counterparty.
- Netting and Novation
  - Aggregating and netting obligations in identical products. This netting is a key operational benefit, reducing the requirement to initiate a payment for each transaction and thereby limiting the potential for liquidity strains.
  - Determining the portfolio for each clearing participant.
  - Timing of novation is key. Sometimes real time (at trade comparison), sometimes start of next business day, sometimes after payment of settlement obligations.
- Collateralization and Mark-to-Market
  - Policies for determining collateral requirements. Varies by clearing organization; in many cases attempt to cover, with a very high confidence level (97.5%), the largest probable one day change in valuation.
  - Sources of prices for mark-to-market.
  - Exchange of cash among clearing members and central counterparty in payment of mark-to-market obligations.
  - Methods of interfacing with the banking system

# An Overview of Clearing Operations II

- **Exiting or "offsetting" positions. Two key economic benefits of clearing come here:**
  - As a result of novation the party looking to liquidate can find any market participant to "take the other side" of the trade, it need not find the original counterparty.
  - Once obligations have been offset at the clearing organization, they are completely extinguished for all legal purposes. They do not live on as open but economically offsetting contracts, waiting to be potentially "cherry picked" by a creditor or bankruptcy trustee.
- **Contract maturity, "delivery," exercise/assignment and expiration**.
  - Ask what the central counterparty guarantees in the physical delivery process if anything; specific performance or liquidated (economic) damages.
- **Default Procedures**:
  - Deployment of liquidity facilities. First and foremost, the central counterparty must meet its immediate obligations to all other clearing members without any delay (October 1987).
  - Agent vs. principal positions; "customer" positions may be transferred when possible.
  - Liquidation of portfolio by central counterparty.
  - Application of resources available to central counterparty from the defaulting member.
  - Application of contingent resources.

# Evaluating Clearing Organizations

- Key Questions to ask about any central counterparty:
  - What are the minimum membership standards?
  - How does the clearing organization perform financial surveillance of its members?
  - Do member capital requirements increase in proportion to position risk?
  - How are collateral requirements determined?
  - How frequently is the adequacy of collateral requirements reviewed?
  - Are there heightened collateral requirements for concentrated positions? How about illiquid positions?
  - Are collateral requirements calculated on a portfolio basis?
  - What collateral is accepted and how is it valued?

# Evaluating Clearing Organizations II

- More key questions to ask about any central counterparty:
  - How frequently is “mark-to-market” performed and cash exchanged (most US futures clearing houses: twice daily)?
  - What is the source of prices, particularly for inactive and less liquid products, for “mark-to-market”?
  - How large are the committed credit facilities, relative to the magnitude of expected mark-to-market cash flows?
  - How large are the contingent resources available to the central counterparty?
  - Do these contingent resources automatically increase as the magnitude of the central counterparty’s risk increases?
  - How subject to “failure to mitigate” defenses and other delaying tactics are any non-possessory contingent resources?
  - How knowledgeable are the staff of the clearing organization?
  - Who regulates the central counterparty?

# Considerations for Non-Exchange Markets

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# Non-Exchange Markets

- Are there examples of clearing for a non-exchange market?
  - NASDAQ (NSCC cleared since 1970s).
  - RepoClear and SwapClear from the London Clearing House.
- Key considerations:
  - Is there a standardized product being traded, or can a "plain vanilla" product be effectively standardized?
  - Is there a "critical mass" of common counterparties (e.g. "Dealers")
  - Are those counterparties allowed to participate in risk mutualization systems?
  - Is the financial condition of those counterparties readily surveillable?
  - Is there a mutually acceptable source of prices for all maturities of the products being traded? Fundamentally, you cannot clear what you cannot price.
  - Can the risk of the product be adequately modeled in the systems for determining collateral requirements?

# Review and Conclusions

# Conclusions

- Clearing is one of several methods available to provide credit enhancement in important markets.  N.B.: It does not eliminate credit exposure: it transfers, contains, potentially reduces, makes more transparent but does not eliminate.
- Not all existing clearing organizations have the same creditworthiness.  The quality of the design, operation and oversight of a central counterparty is a key determinant to whether the addition of clearing enhances a marketplace.  The failure of a clearing organization has enormous systemic risk potential.
- Additional benefits provided by clearing are the ease of offset from existing positions, the operational and liquidity benefits of multilateral netting and added transparency in the credit intermediation process.
- Credit evaluation in a "cleared" market is no different than in any other market:
  - Who is my counterparty?
  - What financial resources does my counterparty have?
  - What is the liquidity of those financial resources?
  - What is the impact of systemic risk on that counterparty?

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