**Clearing Agencies**

A **clearing house** is a financial institution that provides [clearing](http://en.wikipedia.org/wiki/Clearing_%28finance%29) and [settlement](http://en.wikipedia.org/wiki/Settlement_%28finance%29) services for financial and [commodities](http://en.wikipedia.org/wiki/Commodities) derivatives and [securities](http://en.wikipedia.org/wiki/Securities) transactions. These transactions may be executed on a [futures exchange](http://en.wikipedia.org/wiki/Futures_exchange) or [securities exchange](http://en.wikipedia.org/wiki/Exchange_%28organized_market%29), as well as off-exchange in the [over-the-counter](http://en.wikipedia.org/wiki/Over-the-counter_%28finance%29) (OTC) market. A clearing house stands between two clearing firms (also known as member firms or clearing participants) and its purpose is to reduce the risk of one (or more) clearing firm failing to honor its trade settlement obligations. A clearing house reduces the settlement risks by [netting](http://en.wikipedia.org/wiki/Netting) offsetting transactions between multiple counterparties, by requiring [collateral](http://en.wikipedia.org/wiki/Collateral_%28finance%29) deposits (also called "[margin](http://en.wikipedia.org/wiki/Margin_%28finance%29) deposits"), by providing independent valuation of trades and collateral, by monitoring the credit worthiness of the clearing firms, and in many cases, by providing a guarantee fund that can be used to cover losses that exceed a defaulting clearing firm's collateral on deposit.

Once a trade has been executed by two counterparties either on an exchange, or in the OTC markets, the trade can be handed over to a clearing house, which then steps between the two original traders' clearing firms and assumes the legal counterparty risk for the trade. This process of transferring the trade title to the clearing house is called [novation](http://en.wikipedia.org/wiki/Novation). It can take fractions of seconds in highly liquid futures markets; or days, or even weeks in some OTC markets.

As the clearing house concentrates the risk of settlement failures into itself and is able to isolate the effects of a failure of a market participant, it also needs to be properly managed and well-capitalized in order to ensure its survival in the event of a significant adverse event, such as a large clearing firm defaulting or a market crash.

Many clearing house guarantee funds are capitalized with collateral from its clearing firms. In the event of a settlement failure, the clearing firm may be declared to be in default and clearing house default procedures may be utilized, which may include the orderly liquidation of the defaulting firm's positions and collateral. In the event of a significant clearing firm failure, the clearing house may draw on its guarantee fund in order to settle trades on behalf of the failed clearing firm.

### Responsibilities[

The central counterparty is responsible for:

* Market monitoring
	+ Margin monitoring
		- Margin requirements
		- Margin checks
		- [Margin calls](http://en.wikipedia.org/wiki/Margin_call)
	+ [Mark to market](http://en.wikipedia.org/wiki/Mark_to_market) calculations
	+ Risk checks
	+ [clearing](http://en.wikipedia.org/wiki/Clearing_%28finance%29)
	+ [settlement](http://en.wikipedia.org/wiki/Settlement_%28finance%29)

**Margin**

In [finance](http://en.wikipedia.org/wiki/Finance), a **margin** is [collateral](http://en.wikipedia.org/wiki/Collateral_%28finance%29) that the holder of a [financial instrument](http://en.wikipedia.org/wiki/Financial_instrument) has to deposit to cover some or all of the [credit risk](http://en.wikipedia.org/wiki/Credit_risk) of their [counterparty](http://en.wikipedia.org/wiki/Counterparty) (most often their [broker](http://en.wikipedia.org/wiki/Broker) or an [exchange](http://en.wikipedia.org/wiki/Exchange_%28organized_market%29)). This risk can arise if the holder has done any of the following:

* Borrowed cash from the counterparty to buy financial instruments,
* Sold financial instruments [short](http://en.wikipedia.org/wiki/Short_%28finance%29), or
* Entered into a [derivative](http://en.wikipedia.org/wiki/Derivative_%28finance%29) contract.

The collateral can be in the form of cash or securities, and it is deposited in a **margin account**. On United States [futures exchanges](http://en.wikipedia.org/wiki/Futures_exchange), margins were formerly called [performance bonds](http://en.wikipedia.org/wiki/Performance_bond). Most of the exchanges today use [SPAN](http://en.wikipedia.org/wiki/CME_SPAN) ("Standard Portfolio Analysis of Risk") methodology, which was developed by the [Chicago Mercantile Exchange](http://en.wikipedia.org/wiki/Chicago_Mercantile_Exchange) in 1988, for calculating margins for [options](http://en.wikipedia.org/wiki/Option_%28finance%29) and [futures](http://en.wikipedia.org/wiki/Futures_contract).

**Margin Call**

When the margin posted in the margin account is below the **minimum margin requirement**, the broker or exchange issues a **margin call**. The investors now either have to increase the margin that they have deposited or close out their position. They can do this by selling the securities, options or futures if they are long and by buying them back if they are short. But if they do none of these, then the broker can sell their securities to meet the margin call. If a margin call occurs unexpectedly, it can cause a [domino effect](http://en.wikipedia.org/wiki/Domino_effect) of selling which will lead to other margin calls and so forth, effectively crashing an asset class or group of asset classes.

This situation most frequently happens as a result of an adverse change in the market value of the leveraged asset or contract. It could also happen when the margin requirement is raised, either due to increased volatility or due to legislation. In extreme cases, certain securities may cease to qualify for margin trading; in such a case, the brokerage will require the trader to either fully fund their position, or to liquidate it

Assume the maintenance margin requirement is 25%. That means the customer has to maintain Net Value equal to 25% of the total stock equity. That means they have to maintain net equity of $50,000 × 0.25 = $12,500. So at what price would the investor be getting a margin call? For stock price *P* the stock equity will be (in this example) 1,000*P*.

* (Current Market Value − Amount Borrowed) / Current Market Value = 25%
* (1,000*P* - 20,000) / 1000*P* = 0.25
* (1,000*P* - 20,000) = 250*P*
* 750*P* = $20,000
* *P* = $20,000/750 = $26.66 / share

So if the stock price drops from $50 to $26.66, investors will be called to add additional funds to the account to make up for the loss in stock equity.

Alternatively, one can calculate *P* using where *P0* is the initial price of the stock. Let's use the same example to demonstrate this:



**Mark-to-Market**

[Statements of Financial Accounting Standards](http://en.wikipedia.org/wiki/List_of_FASB_Pronouncements) No. 157

**Mark-to-market** or **fair value accounting** refers to accounting for the "[fair value](http://en.wikipedia.org/wiki/Fair_value)" of an asset or liability based on the current [market price](http://en.wikipedia.org/wiki/Market_price), or for similar assets and liabilities, or based on another objectively assessed "fair" value.[[*citation needed*](http://en.wikipedia.org/wiki/Wikipedia%3ACitation_needed)] Fair value accounting has been a part of [Generally Accepted Accounting Principles](http://en.wikipedia.org/wiki/Generally_Accepted_Accounting_Principles_%28United_States%29) (GAAP) in the United States since the early 1990s, and is now regarded as the "gold standard" in some circles.

Mark-to-market accounting can change values on the balance sheet as market conditions change. In contrast, [historical cost](http://en.wikipedia.org/wiki/Historical_cost) accounting, based on the past transactions, is simpler, more stable, and easier to perform, but does not represent current market value. It summarizes past transactions instead. Mark-to-market accounting can become volatile if market prices fluctuate greatly or change unpredictably. Buyers and sellers may claim a number of specific instances when this is the case, including inability to value the future income and expenses both accurately and collectively, often due to unreliable information, or over-optimistic or over-pessimistic expectations.[

**Clearing**

In [banking](http://en.wikipedia.org/wiki/Banking) and [finance](http://en.wikipedia.org/wiki/Finance), **clearing** denotes all activities from the time a commitment is made for a [transaction](http://en.wikipedia.org/wiki/Financial_transaction) until it is [settled](http://en.wikipedia.org/wiki/Settlement_%28finance%29). Clearing of payments is necessary to turn the promise of payment (for example, in the form of a [cheque](http://en.wikipedia.org/wiki/Cheque) or electronic payment request) into actual movement of money from one bank to another.

In trading, clearing is necessary because the speed of trades is much faster than the cycle time for completing the underlying transaction. It involves the management of post-trading, pre-settlement credit exposures to ensure that trades are settled in accordance with market rules, even if a buyer or seller should become insolvent prior to settlement. Processes included in clearing are [reporting](http://en.wikipedia.org/wiki/Financial_reporting)/monitoring, [risk margining](http://en.wikipedia.org/wiki/Margin_%28finance%29), [netting](http://en.wikipedia.org/wiki/Netting) of trades to single positions, [tax](http://en.wikipedia.org/wiki/Tax) handling, and failure handling.

[Systemically Important Payment Systems](http://en.wikipedia.org/wiki/Systemically_Important_Payment_Systems) (SIPS) are payment systems which have the characteristic that a failure of these systems could potentially endanger the operation of the whole economy. In general, these are the major payment clearing or [Real Time Gross Settlement](http://en.wikipedia.org/wiki/Real_Time_Gross_Settlement) systems of individual countries, but in the case of Europe, there are certain pan-European payment systems. [TARGET2](http://en.wikipedia.org/wiki/TARGET2) is a pan-European SIPS dealing with major inter-bank payments. [STEP2](http://en.wikipedia.org/wiki/Euro_Banking_Association#STEP2), operated by the [Euro Banking Association](http://en.wikipedia.org/wiki/Euro_Banking_Association) is a major pan-European clearing system for retail payments which has the potential to become a SIPS. The [Federal Reserve System](http://en.wikipedia.org/wiki/Federal_Reserve_System) is a SIPS.

**Settlement**

**Settlement** of securities is a [business process](http://en.wikipedia.org/wiki/Business_process) whereby [securities](http://en.wikipedia.org/wiki/Security_%28finance%29) or interests in securities are delivered, usually against ([in simultaneous exchange for](http://en.wikipedia.org/wiki/Delivery_versus_payment)) [payment](http://en.wikipedia.org/wiki/Payment) of money, to fulfill [contractual](http://en.wikipedia.org/wiki/Contract) obligations, such as those arising under securities trades.

In the U.S., the [settlement date](http://en.wikipedia.org/wiki/Settlement_date) for marketable stocks is usually 3 business days after the trade is executed, and for listed options and government securities it is usually 1 day after the execution.

As part of performance on the delivery obligations entailed by the trade, settlement involves the delivery of securities and the corresponding payment.

A number of risks arise for the parties during the settlement interval, which are managed by the process of [clearing](http://en.wikipedia.org/wiki/Clearing_%28finance%29), which follows trading and precedes settlement. Clearing involves modifying those contractual obligations so as to facilitate settlement, often by [netting](http://en.wikipedia.org/wiki/Netting) and [novation](http://en.wikipedia.org/wiki/Novation).

After the trade and before settlement, the rights of the purchaser are [contractual](http://en.wikipedia.org/wiki/Contract) and therefore [personal](http://en.wikipedia.org/wiki/Personal_rights). Because they are merely personal, their rights are at risk in the event of the insolvency of the vendor. After settlement, the purchaser owns securities and their rights are [proprietary](http://en.wikipedia.org/wiki/Property_right). Settlement is the delivery of securities to complete trades. It involves upgrading personal rights into property rights and thus protects market participants from the risk of the default of their counterparties.

[**http://www.sec.gov/divisions/marketreg/mrclearing.shtml**](http://www.sec.gov/divisions/marketreg/mrclearing.shtml)

Clearing Agencies are self-regulatory organizations that are required to register with the Commission. There are two types of clearing agencies -- clearing corporations and depositories. Clearing corporations compare member transactions (or report to members the results of exchange comparison operations), clear those trades and prepare instructions for automated settlement of those trades, and often act as intermediaries in making those settlements.[1](http://www.sec.gov/divisions/marketreg/mrclearing.shtml%22%20%5Cl%20%22P196_9330) Depositories hold securities certificates in bulk form for their participants and maintain ownership records of the securities on their own books.[2](http://www.sec.gov/divisions/marketreg/mrclearing.shtml%22%20%5Cl%20%22P197_9631) Physical securities are maintained in vaults, and ownership records are maintained on the books of the depository. Clearing corporations generally instruct depositories to make securities deliveries that result from settlement of securities transactions. In addition, depositories receive instructions from participants to move securities from one participant's account to another participant's account, either for free or in exchange for a payment of money.

Clearance may be accomplished on a trade-by-trade basis or through netting[3](http://www.sec.gov/divisions/marketreg/mrclearing.shtml%22%20%5Cl%20%22P200_10252) of several trades either bilaterally between the two counterparties or multilaterally among all members of a clearing corporation to yield balance orders reflecting a single day's trades or all open positions to date (continuous net settlement or "CNS").[4](http://www.sec.gov/divisions/marketreg/mrclearing.shtml%22%20%5Cl%20%22P201_10608) The majority of equity trades in the United States are cleared and settled in CNS systems. CNS systems net the securities delivery obligations and the payment obligations of all clearing corporation participants. Clearing corporations notify participants of their securities delivery and payment obligations each day. In addition, the clearing corporation guarantees the completion of all transactions and interposes itself as the contraparty to both sides of any transaction. As with trading systems, the different clearing and settlement systems can be manual, semi-automated, or fully automated and different types tend to predominate for certain securities.

[1](http://www.sec.gov/divisions/marketreg/mrclearing.shtml%22%20%5Cl%20%22P196_9331) Clearing corporations include the National Securities Clearing Corporation, the Fixed Income Clearing Corporation, and The Options Clearing Corporation.

[2](http://www.sec.gov/divisions/marketreg/mrclearing.shtml%22%20%5Cl%20%22P197_9632) Currently, The Depository Trust Company is the primary U.S. securities depository.

[3](http://www.sec.gov/divisions/marketreg/mrclearing.shtml%22%20%5Cl%20%22P200_10253) "Netting" is the process of offsetting expected deliveries and payments against expected receipts.

[4](http://www.sec.gov/divisions/marketreg/mrclearing.shtml%22%20%5Cl%20%22P201_10609) "Continuous net settlement" is an accounting system that summarizes and nets each participant's daily transactions in each issue, including open positions from previous days, to create a single long position or a single short position for the participant.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Clearing Firm | CME | CBOT | NYMEX | COMEX | OTC IRS | OTC CDS | OTC FX |
| [ABN AMRO Clearing Chicago LLC](http://www.abnamroclearing.com/en/index.html)  | yes | yes | yes | yes |  |  |  |
| [ADM Investor Services, Inc.](http://www.admis.com/)  | yes | yes | yes | yes |  |  |  |
| [Advantage Futures, LLC](http://www.advantagefutures.com/)  | yes | yes | yes | yes |  |  |  |
| [Bank of Montreal](http://www.bmo.com) |  |  |  |  | yes |  |  |
| [Barclays Capital Inc.](http://www.barx.com/) | yes | yes | yes | yes | yes | yes |  |
| [BMO Capital Markets Corp.](http://BMOCM.com/)  | yes | yes | yes | yes |  |  |  |
| [BNP Paribas Prime Brokerage, Inc.](http://cib.bnpparibas.com) |  |  | yes | yes |  |  |  |
| [BNP Paribas Securities Corp.](http://www.bnpparibas.com/) | yes | yes |  |  | yes | yes |  |
| [BOCI Commodities and Futures Limited](http://www.bocigroup.com/) + | yes | yes | yes | yes |  |  |  |
| [BP Energy Company](http://www.bpgasandpower.com) |  |  | yes |  |  |  |  |
| [BP Products North America Inc.](http://www.bp.com)  |  |  | yes |  |  |  |  |
| [Bunge Chicago, Inc.](http://www.bunge.com) |  | yes |  |  |  |  |  |
| [Cantor Fitzgerald & Co.](http://www.cantor.com/)  | yes | yes |  |  |  |  |  |
| [China Merchants Futures (HK) Co., Limited](http://www.newone.com.hk/cmshk/en/index.html) + | yes | yes | yes | yes |  |  |  |
| [CHS Hedging, LLC](https://www.chshedging.com/) |  | yes |  |  |  |  |  |
| [CIBC World Markets Corp.](http://www.cibcwm.com/wm/)  | yes |  |  |  |  |  |  |
| [Citigroup Global Markets Inc.](http://icg.citi.com/icg/global_markets/) | yes | yes | yes | yes | yes | yes | yes |
| [Credit Agricole Corporate and Investment Bank](http://www.ca-cib.com/) |  |  |  |  | yes |  |  |
| [Credit Suisse Securities (USA) LLC](http://www.credit-suisse.com/us/en/) | yes | yes | yes | yes | yes | yes | yes |
| [Credit Suisse International](http://www.credit-suisse.com) | yes | yes | yes | yes | yes | yes |  |
| [Crossland, LLC](http://www.crosslandllc.com/)  | yes | yes | yes | yes |  |  |  |
| [Cunningham Commodities, Inc.](http://www.cunninghamfc.com)  |  | yes |  |  |  |  |  |
| [Daiwa Capital Markets America Inc.](http://www.us.daiwacm.com/)  | yes | yes |  |  |  |  |  |
| [Deutsche Bank Securities Inc.](http://www.db.com/) | yes | yes | yes | yes | yes | yes |  |
| [Dorman Trading, L.L.C.](http://www.dormantrading.com/) | yes | yes | yes | yes |  |  |  |
| [E D & F Man Capital Markets Inc.](http://www.edfmancapital.com) | yes | yes | yes | yes |  |  |  |
| [Eagle Market Makers, Inc.](http://eaglemarketmakers.com/index.html) | yes | yes |  |  |  |  |  |
| [EFL Futures Limited](http://www.mb.seb.se)  | yes | yes | yes | yes |  |  |  |
| FC Stone, LLC | yes | yes | yes | yes |  |  |  |
| [G.H. Financials, LLC](http://www.ghfinancials.com/) | yes | yes | yes | yes |  |  |  |
| [Gelber Group, LLC](http://www.gelbergroup.com) | yes | yes | yes | yes |  |  |  |  |
| [Goldman, Sachs & Co.](http://www.gs.com/) | yes | yes | yes | yes | yes | yes |  |  |
| [Goldman Sachs Execution & Clearing, L.P.](http://www.gs.com/)  | yes | yes | yes | yes |  |  |  |  |
| [HSBC Securities (USA) Inc.](http://www.hsbc.com/) | yes | yes | yes | yes | yes | yes | yes |  |
| [Jefferies Bache, LLC](http://www.jefferies.com) | yes | yes | yes | yes |  |  |  |  |
| [Jump Trading Futures, LLC](http://www.jumptrading.com)  | yes | yes | yes | yes |  |  |  |  |
| [J.P. Morgan Securities LLC](http://www.jpmorgansecurities.com) | yes | yes | yes | yes | yes | yes | yes |  |
| [KCG Americas LLC](https://www.kcg.com/) | yes | yes | yes | yes |  |  |  |  |
| Longwood Trading |  | yes |  |  |  |  |  |  |
| [Macquarie Futures USA LLC](http://www.macquarie.com/futures) | yes | yes | yes | yes |  |  |  |  |
| [Marex North America LLC](http://www.marexfinancial.com/) | yes | yes | yes | yes |  |  |  |  |
| [Merrill Lynch, Pierce, Fenner & Smith Inc.](http://www.ml.com/) | yes | yes | yes | yes | yes | yes | yes |  |
| [Mizuho Securities USA Inc.](http://www.mizuhosecurities.com/us) | yes | yes | yes | yes |  |  |  |  |
| [Morgan Stanley & Co. LLC](http://www.morganstanley.com) | yes | yes | yes | yes | yes | yes | yes |  |
| [Nanhua Futures (Hong Kong) Co., Ltd.](http://www.nanhua.net) + | yes | yes | yes | yes |  |  |  |  |
| [Newedge USA, LLC](http://www.fimat.com/content/newedgecom/en/home.html) | yes | yes | yes | yes | yes |  |  |  |
| [Nomura Securities International, Inc.](http://www.nomura.com/) | yes | yes |  | yes | yes | yes |  |  |
| [Phillip Futures Inc.](http://www.phillipusa.com)  | yes | yes | yes | yes |  |  |  |  |
| [Proxima Clearing, LLC](http://www.proximaclearing.com/)  |  |  | yes |  |  |  |  |  |
| Rabo Securities USA Inc. |  |  |  |  | yes |  |  |  |
| [Rand Financial Services Inc.](http://www.rand-usa.com) | yes | yes | yes | yes |  |  |  |  |
| [RBC Capital Markets LLC](https://www.rbccm.com/)  | yes | yes | yes | yes |  |  |  |  |
| [RBS Securities Inc.](http://gbm.rbs.com/) | yes | yes | yes | yes | yes |  |  |  |
| RDG Trading |  | yes |  |  |  |  |  |  |
| [R.J. O'Brien & Associates, LLC](http://rjobrien.com)  | yes | yes | yes | yes |  |  |  |  |
| [Ronin Capital, LLC](http://www.ronin-capital.com/)  | yes | yes |  |  |  |  |  |  |
| [Rosenthal Collins Group, L.L.C.](http://www.rcgdirect.com/)  | yes | yes | yes | yes |  |  |  |  |
| [Royal Bank of Canada](http://www.rbc.com) |  |  |  |  | yes |  |  |  |
| Santander Investment Securities Inc. | yes | yes | yes | yes |  |  |  |  |
| [Societe Generale](http://www.sgcib.com) |  |  |  |  | yes | yes |  |  |
| [State Street Global Markets, LLC](http://www.statestreetglobalmarkets.com/) | yes | yes |  |  | yes |  |  |  |
| [Straits Financial LLC](http://www.straitsfinancial.com) | yes | yes | yes | yes |  |  |  |  |
| [Term Commodities Inc.](http://www.ldcom.com) |  | yes | yes |  |  |  |  |  |
| [The Bank of Nova Scotia](http://www.scotiabank.com) |  |  |  | yes | yes |  |  |  |
| [The Royal Bank of Scotland plc](http://www.rbs.co.uk) | yes | yes | yes | yes | yes | yes |  |  |
| [The Toronto-Dominion Bank](http://www.td.com) |  |  |  |  | yes |  |  |  |
| [Timber Hill LLC](http://www.timberhill.com/)  | yes | yes | yes | yes |  |  |  |  |
| [TradeLink L.L.C.](http://www.tradelinkllc.com/) | yes | yes | yes | yes |  |  |  |  |
| [UBS Securities LLC](http://www.ubswarburg.com/) | yes | yes | yes | yes | yes | yes |  |  |
| UOBBF Clearing Limited + | yes | yes | yes | yes |  |  |  |  |
| [Vision Financial Markets LLC](http://www.visionfinancialmarkets.com/) | yes | yes | yes | yes |  |  |  |  |
| [Wells Fargo Securities, LLC](http://www.wellsfargo.com/com/securities) | yes | yes | yes | yes | yes |  |  |  |

+ - Denotes Firm is Not Actively Clearing