Collateral Management

Course Overview

Collateral Management **Fundamentals**

Pros & **Cons** of Holding Collateral

Types of Collateral

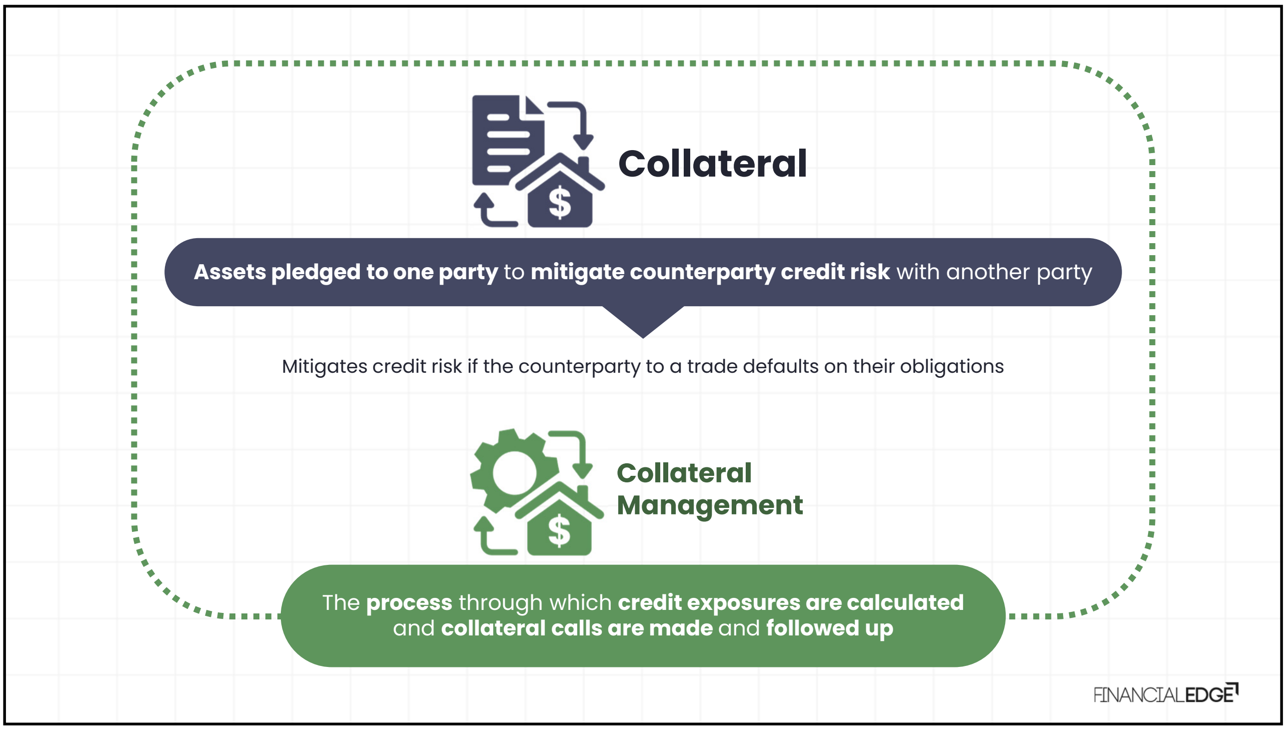
Credit Risk

Documentation

Centralized Clearing

Clearing House **Margin Calls**

Collateral Management Fundamentals


Collateral
Assets pledged to one party to mitigate counterparty credit risk with another party
Mitigates credit risk if the counterparty to a trade defaults on their obligations
Collateral Management
The process through which credit exposures are calculated and collateral calls are made and followed up
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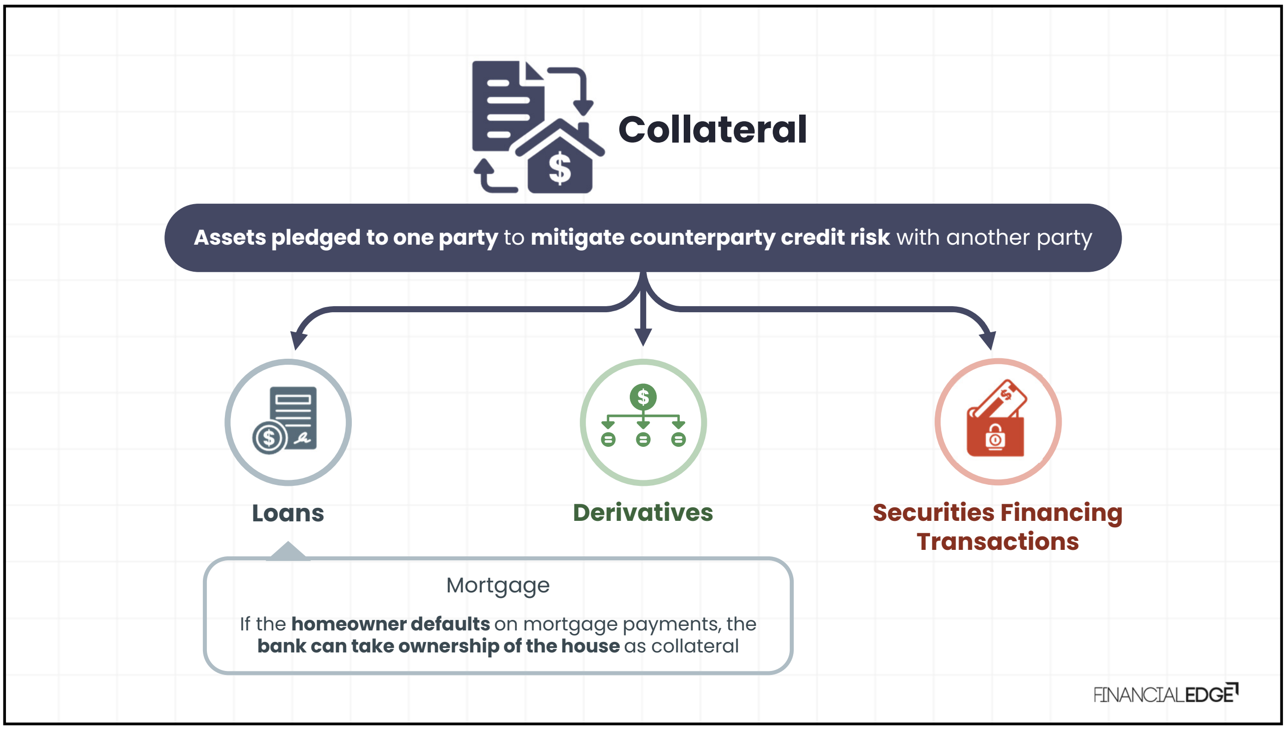
Collateral
Assets pledged to one party to mitigate counterparty credit risk with another party
Loans
Derivatives
Securities Financing Transactions
Mortgage
If the homeowner defaults on mortgage payments, the bank can take ownership of the house as collateral
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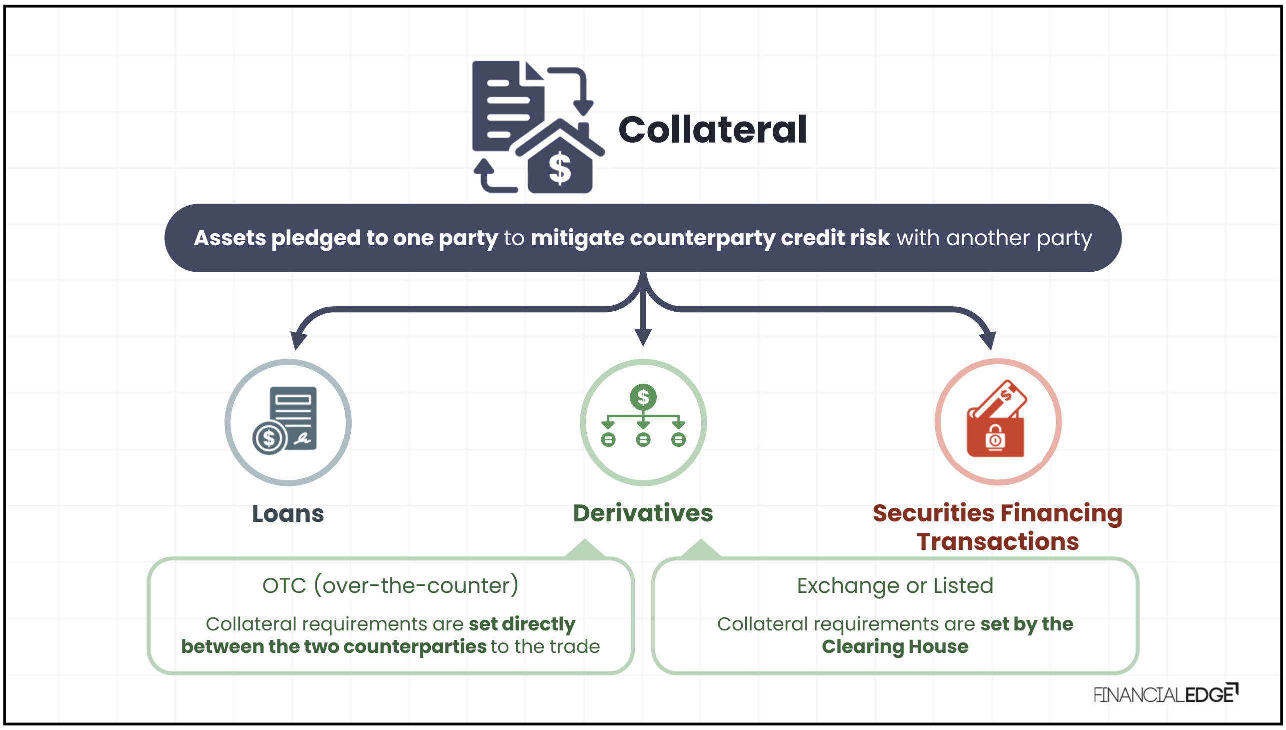
Collateral
Assets pledged to one party to mitigate counterparty credit risk with another party
Loans
Derivatives
Securities Financing Transactions
OTC (over-the-counter)
Collateral requirements are set directly between the two counterparties to the trade
Exchange or Listed
Collateral requirements are set by the Clearing House
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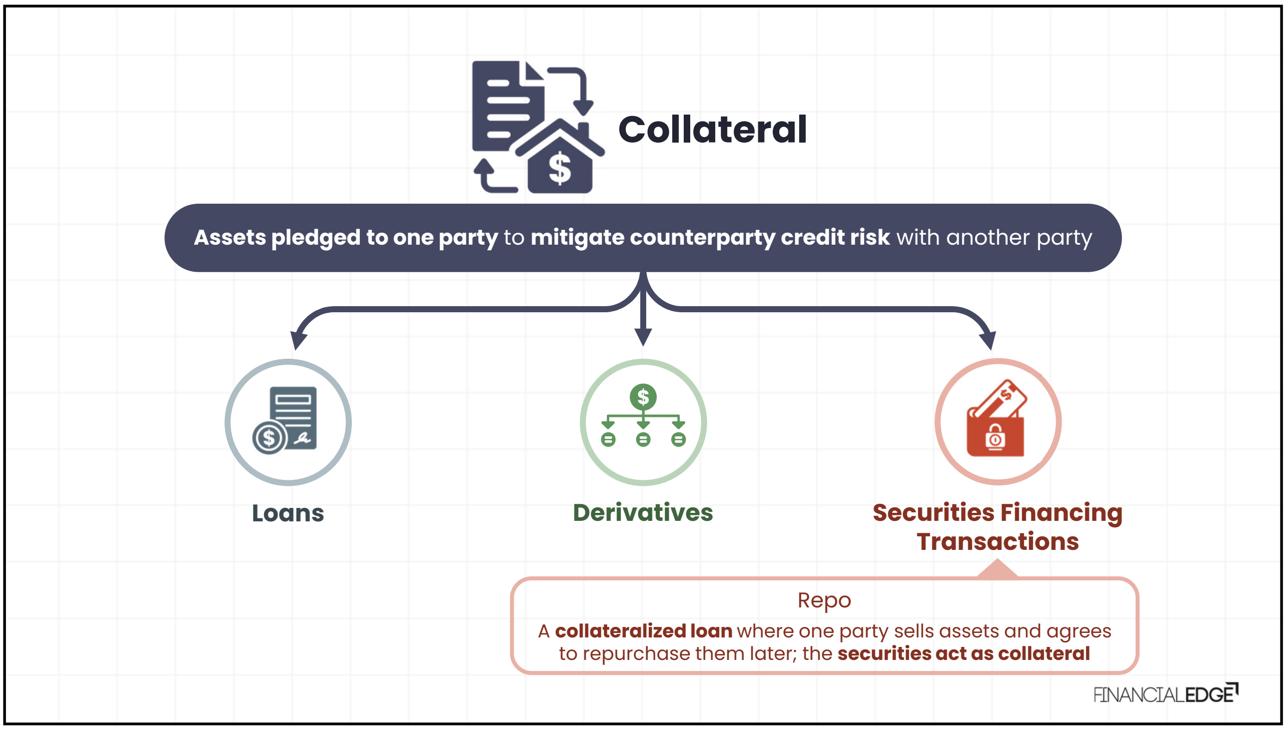
Collateral
Assets pledged to one party to mitigate counterparty credit risk with another party
Loans
Derivatives
Securities Financing Transactions
Repo
A collateralized loan where one party sells assets and agrees to repurchase them later; the securities act as collateral
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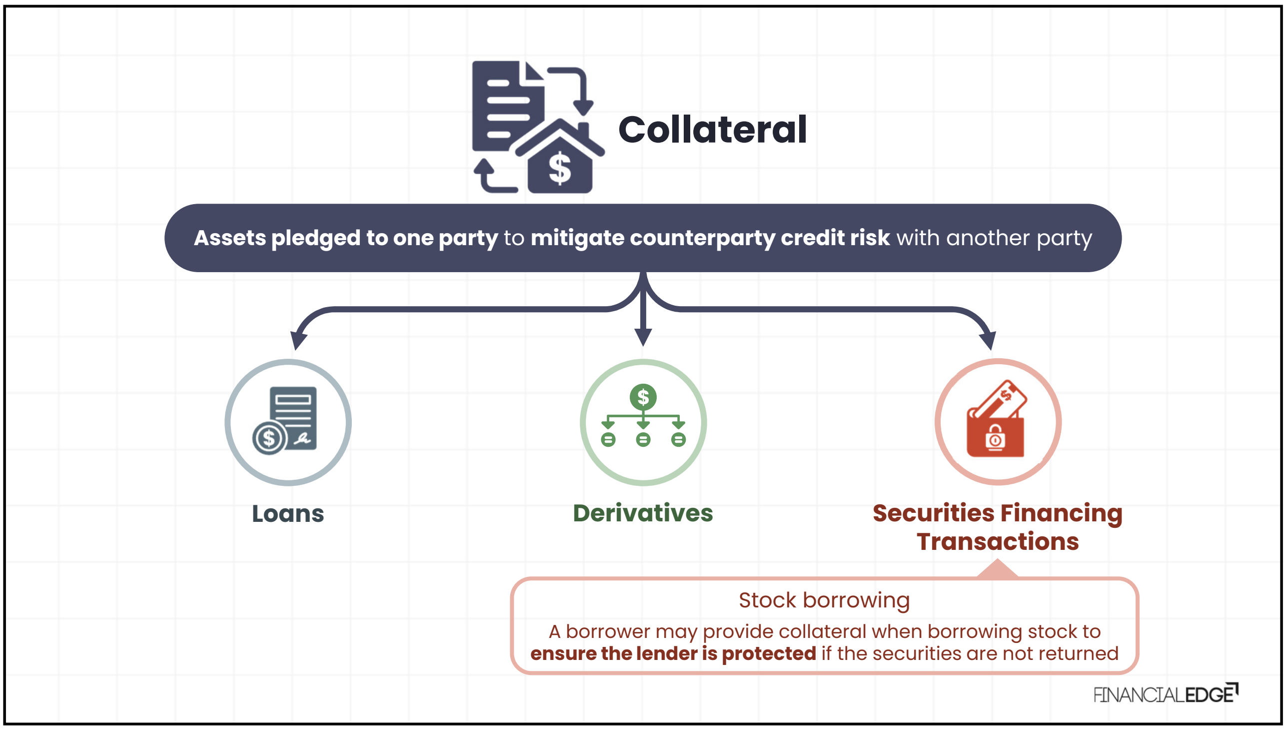
Collateral
Assets pledged to one party to **mitigate counterparty credit risk** with another party
Loans
Derivatives
Securities Financing Transactions
Stock borrowing
A borrower may provide collateral when borrowing stock to **ensure the lender is protected** if the securities are not returned
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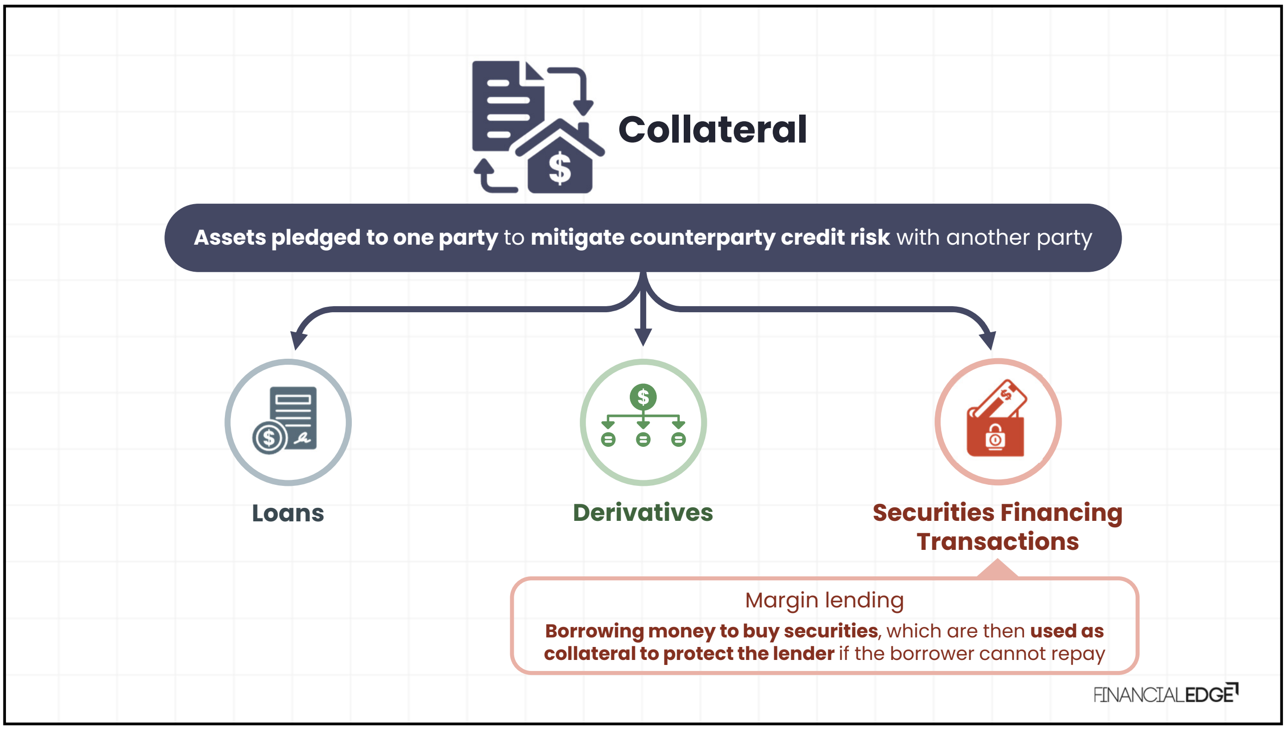
Collateral
Assets pledged to one party to **mitigate counterparty credit risk** with another party
Loans
Derivatives
Securities Financing Transactions
Margin lending
Borrowing money to buy securities, which are then **used as collateral to protect the lender** if the borrower cannot repay
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Pros and Cons of Holding Collateral

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Holding Collateral

Reduced credit risk
If counterparty goes bankrupt, ownership of the assets reduces losses

Increased competitiveness
Low credit risk allows for better pricing

Reduction in regulatory capital
Holding collateral reduces risk exposure

Access to higher risk trades
Collateral may reduce counterparty risk

Operationally complex
Staff and systems needed to calculate risk exposures, correctly call for collateral from counterparties, and deal with special situations

Legal risk
Inability to 'perfect a claim' if documentation is not sufficiently robust to secure assets in bankruptcy

Unreliable exposure calculations
Any weaknesses in exposures or calculations may mean more credit risk than expected

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Types of Collateral

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Types of collateral

Standard

Cash

G10 Government Bonds

Most desired because they have the **least risk** associated with them

Alternative

Mortgage Backed Securities (MBS)

Corporate Bonds

Letters of Credit

Equity

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Collateral Type	Amount received (2014 USD billions)
Cash	767.6
Government Securities	134.0
MBS	18.7
Corporate & Other Non Government Bonds	29.4
Letters of Credit	4.2
Equities	28.9
Other	19.6
Total	1,002.0

Standard

Alternative

Source: ISDA Margin Survey 2015

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Documentation

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Robust legal documentation

- Display how transactions will proceed through their lives
- Determine collateral requirements in the event of bankruptcy

ISDA Master Agreement (International Swaps and Derivatives Association)

A document agreed between two parties on a bilateral basis which covers the standard terms in OTC derivative transaction (including responsibilities in the event of default and netting arrangements)

Credit Support Annex (CSA)

An element of an ISDA Master Agreement which defines key elements of collateral arrangements

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Credit Support Annex (CSA)

An element of an ISDA Master Agreement which defines key elements of collateral arrangements

- **Eligible Collateral**: The types of assets and currencies of assets that can be pledged as collateral
- **Exposure**: How counterparty credit risk exposure is calculated for different derivative instruments
- **Threshold**: Mark-to-market value of derivative position above which collateral must be pledged
- **Minimum Transfer**: Defines the minimum amount of collateral that needs to be posted if threshold is breached
- **Frequency**: How often the need for collateral is recalculated

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Credit Risk

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Credit risk

The risk of suffering a loss due to borrowers or counterparties failing to meet their obligations

Expected loss = **Probability** of default (PD) × **Exposure** at default (EAD) × **Loss** given default (LGD)

Reduced via holding of collateral

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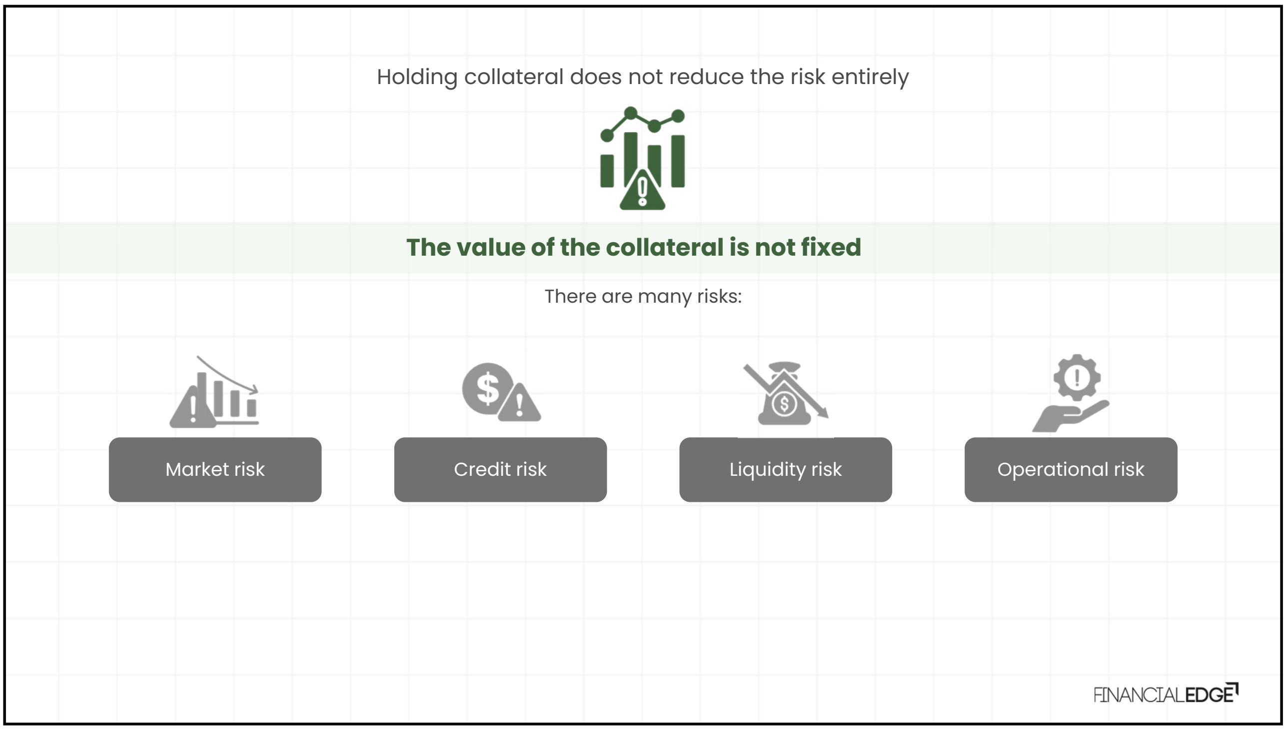
Holding collateral does not reduce the risk entirely
The value of the collateral is not fixed
There are many risks:
Market risk
Credit risk
Liquidity risk
Operational risk
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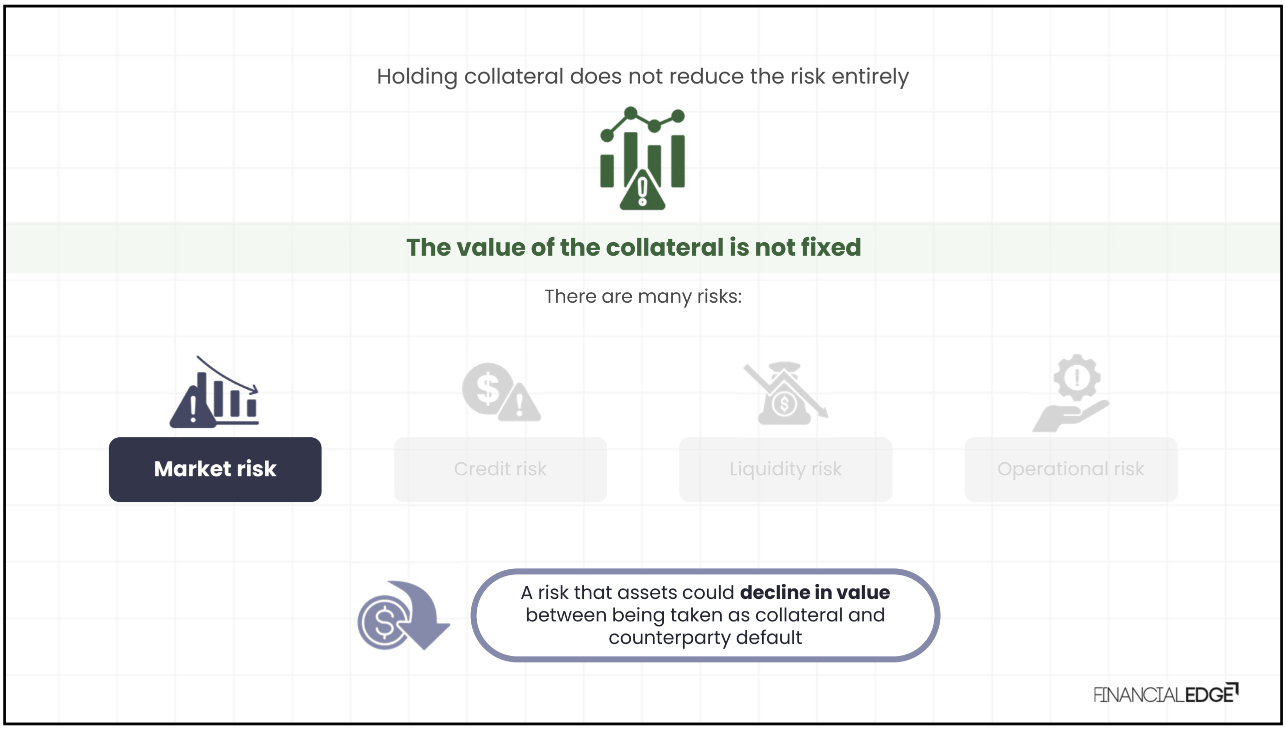
Holding collateral does not reduce the risk entirely
The value of the collateral is not fixed
There are many risks:
Market risk
Credit risk
Liquidity risk
Operational risk
A risk that assets could **decline in value** between being taken as collateral and counterparty default
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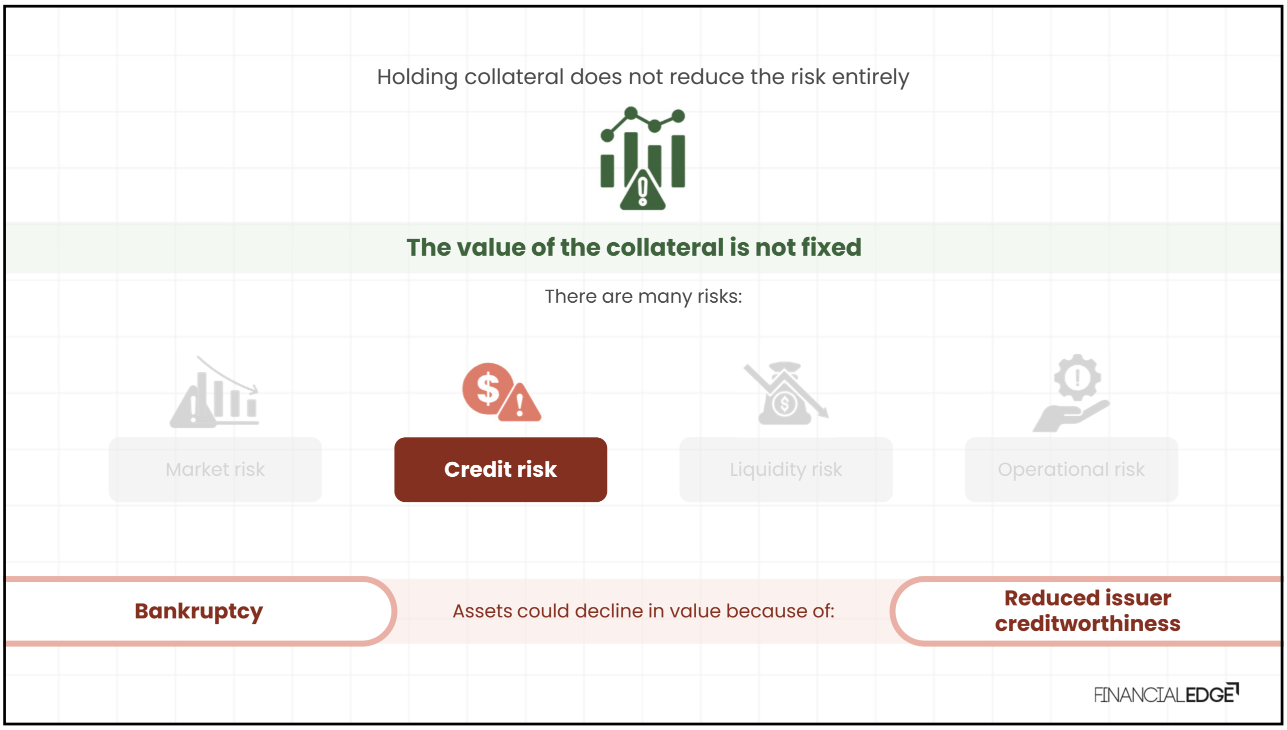
Holding collateral does not reduce the risk entirely
The value of the collateral is not fixed
There are many risks:
Market risk
Credit risk
Liquidity risk
Operational risk
Bankruptcy
Assets could decline in value because of:
Reduced issuer creditworthiness
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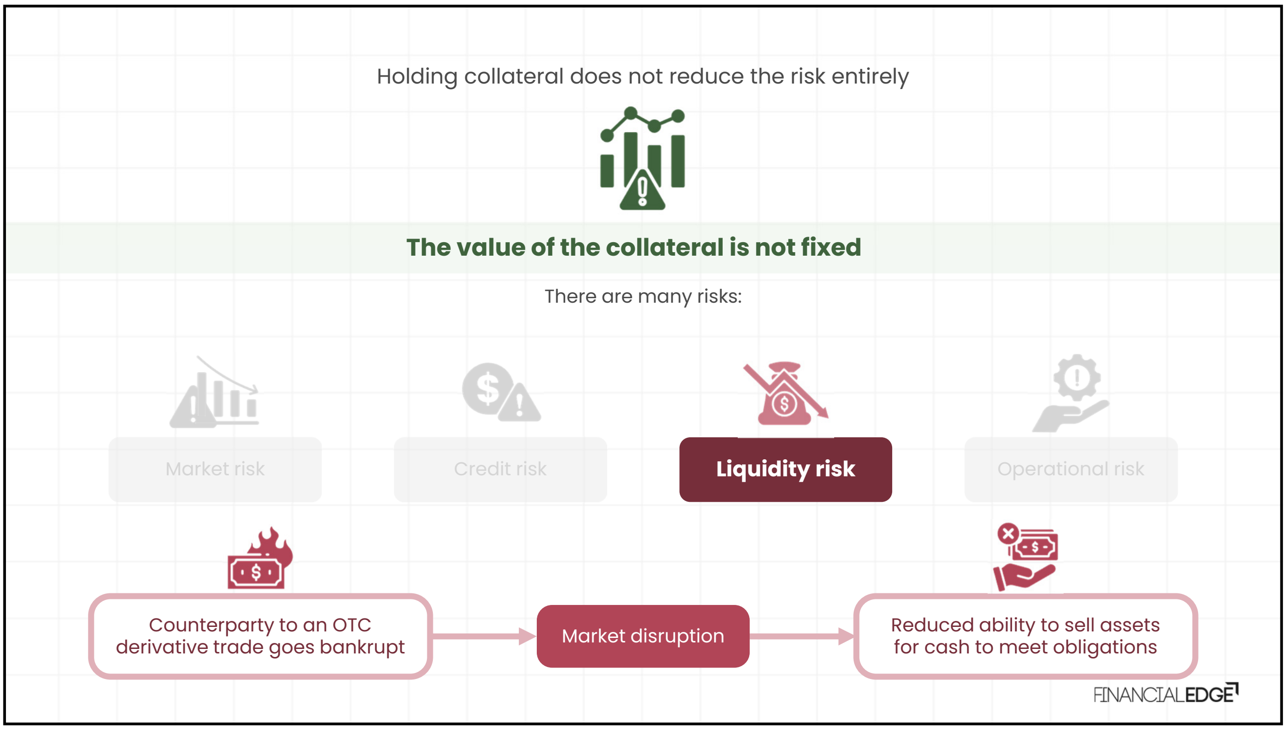
Holding collateral does not reduce the risk entirely
The value of the collateral is not fixed
There are many risks:
Market risk
Credit risk
Liquidity risk
Operational risk
Counterparty to an OTC derivative trade goes bankrupt
Market disruption
Reduced ability to sell assets for cash to meet obligations
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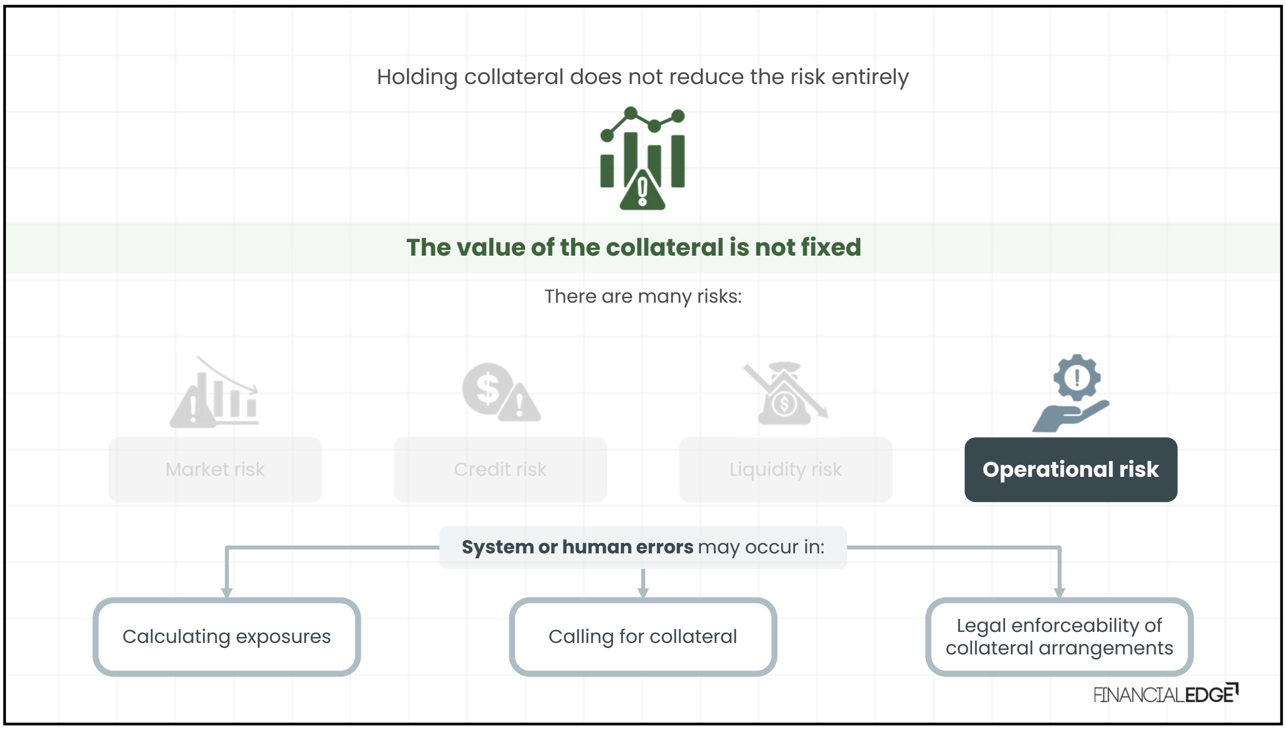
Holding collateral does not reduce the risk entirely
The value of the collateral is not fixed
There are many risks:
Market risk
Credit risk
Liquidity risk
Operational risk
System or human errors may occur in:
Calculating exposures
Calling for collateral
Legal enforceability of collateral arrangements
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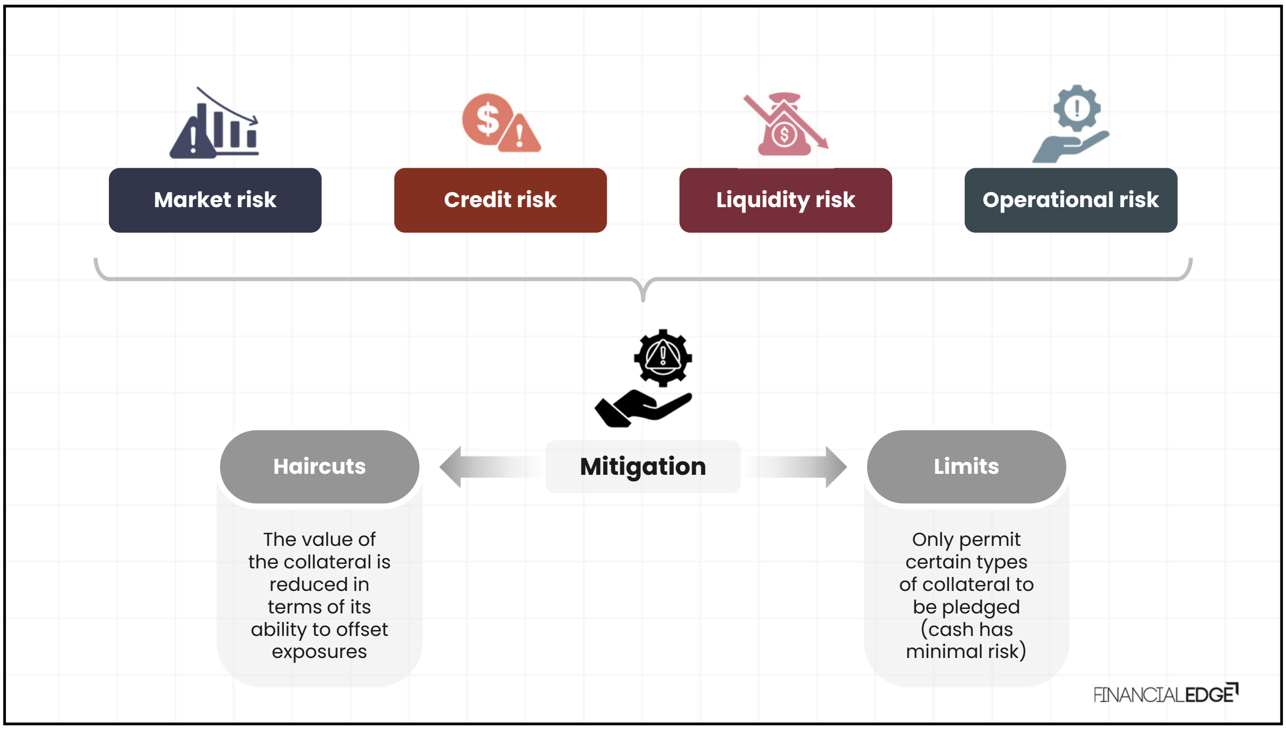
Market risk
Credit risk
Liquidity risk
Operational risk
Haircuts
The value of the collateral is reduced in terms of its ability to offset exposures
Mitigation
Limits
Only permit certain types of collateral to be pledged (cash has minimal risk)
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Centralized Clearing

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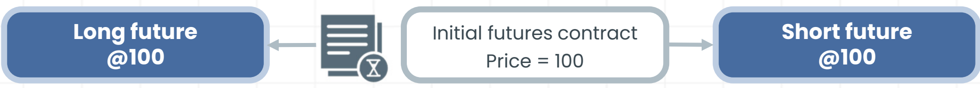
Centralized clearing

Settlement of derivatives traded over an exchange

Settlement of OTC derivatives



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Settlement of derivatives traded over an exchange
Centralized clearing
Settlement of OTC derivatives
Long future @100
Initial futures contract Price = 100
Short future @100
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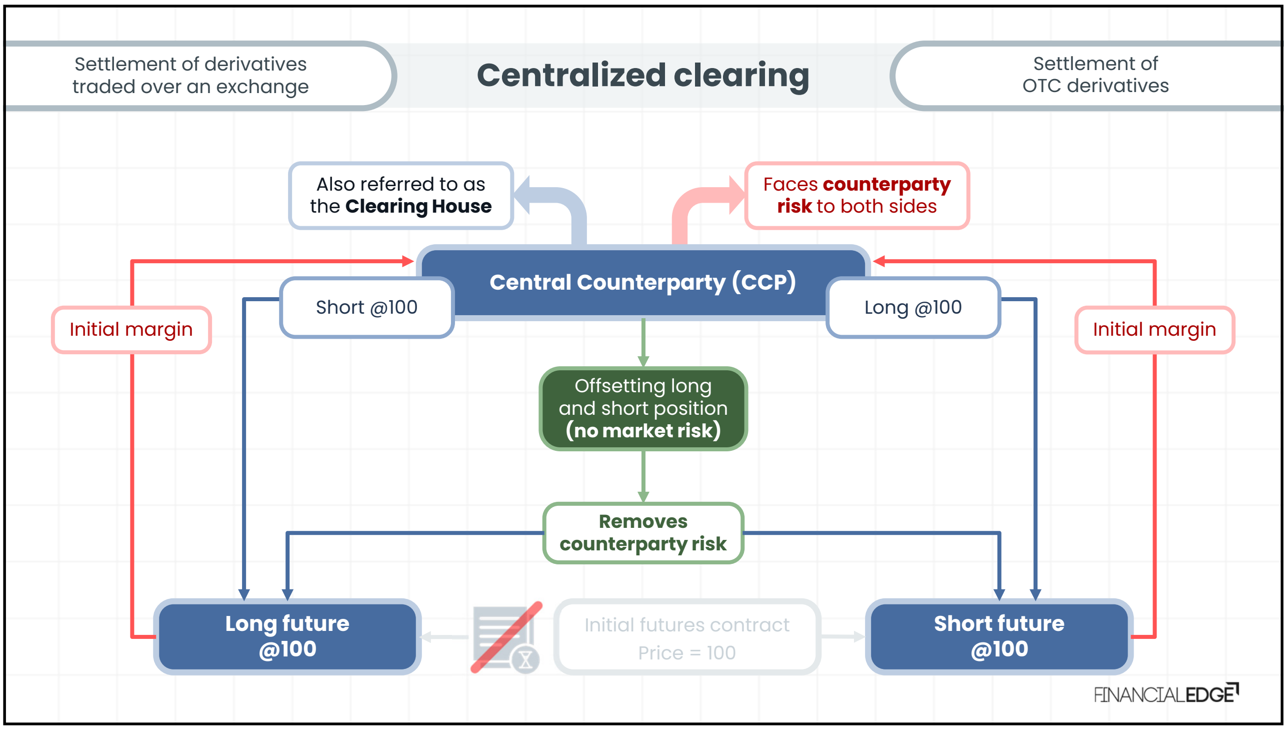
Settlement of derivatives traded over an exchange
Centralized clearing
Settlement of OTC derivatives
Also referred to as the Clearing House
Faces counterparty risk to both sides
Central Counterparty (CCP)
Short @100
Long @100
Initial margin
Initial margin
Offsetting long and short position (no market risk)
Removes counterparty risk
Long future @100
Initial futures contract Price = 100
Short future @100
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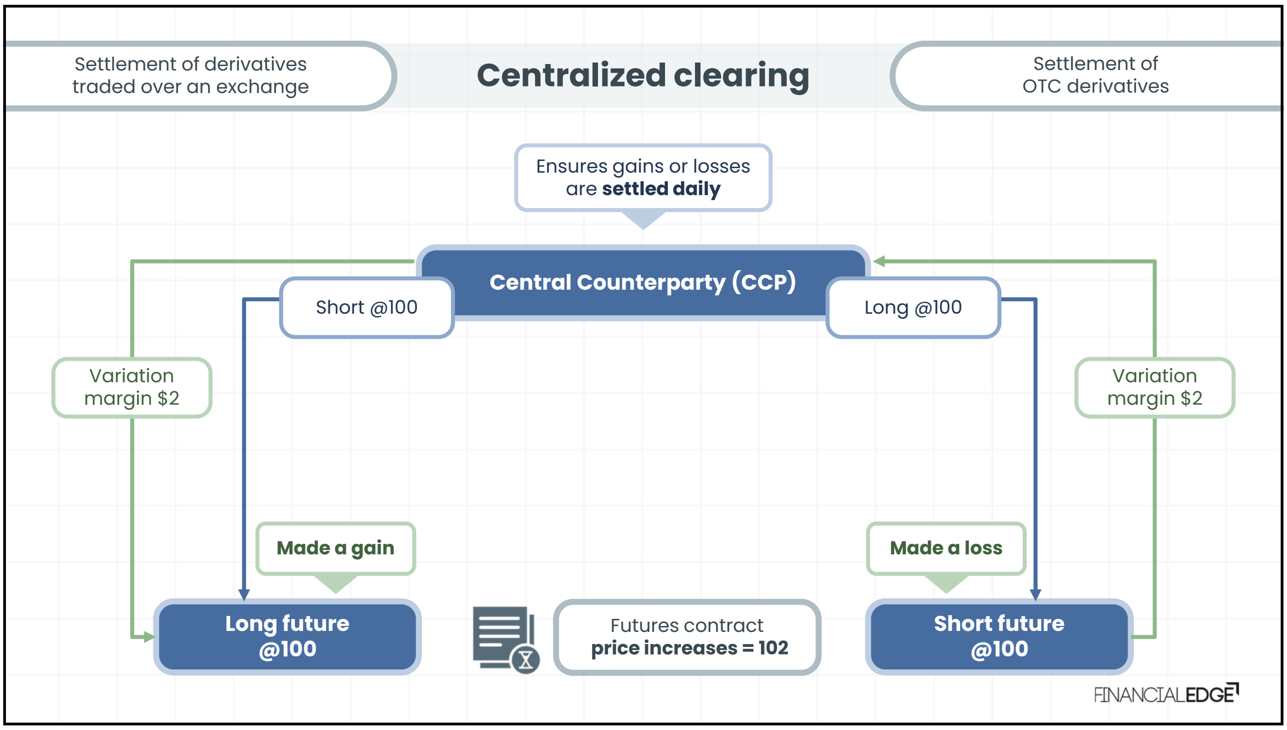

Clearing House Margin Calls

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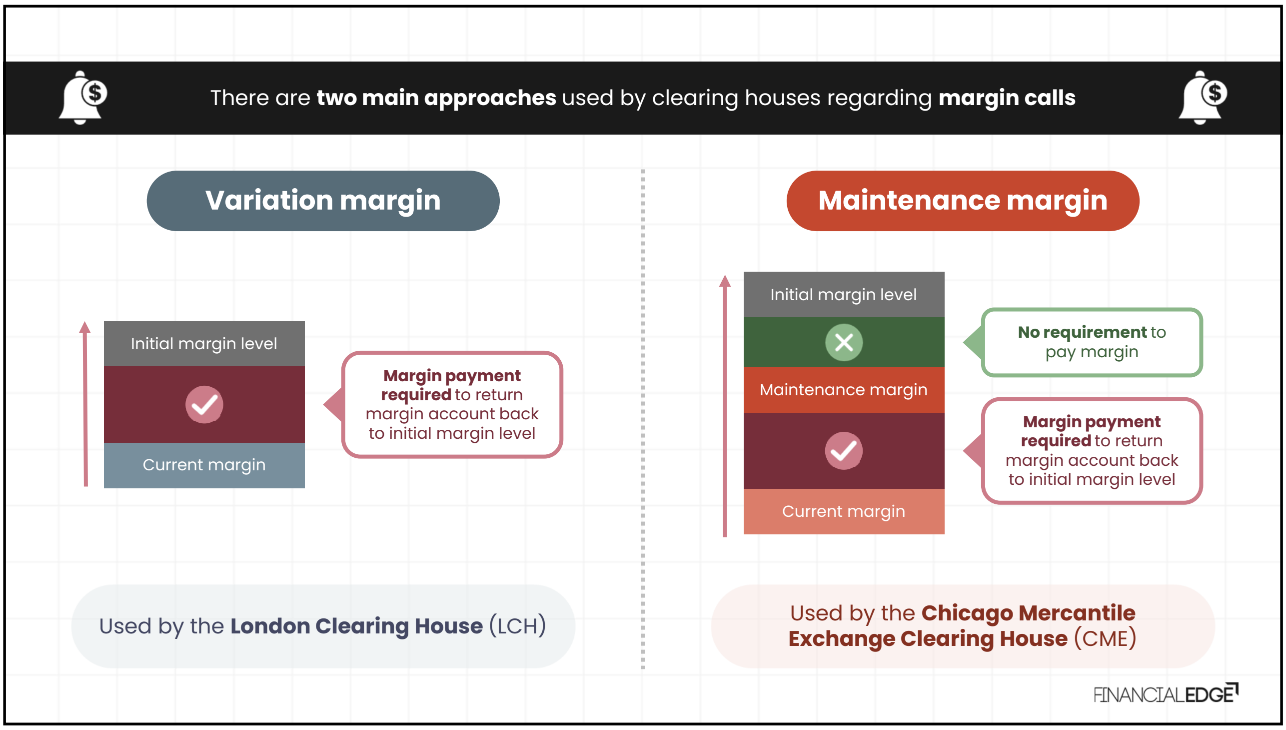
There are **two main approaches** used by clearing houses regarding **margin calls**
Variation margin
Initial margin level
Current margin
Margin payment required to return margin account back to initial margin level
Used by the **London Clearing House** (LCH)
Maintenance margin
Initial margin level
Maintenance margin
Current margin
No requirement to pay margin
Margin payment required to return margin account back to initial margin level
Used by the **Chicago Mercantile Exchange Clearing House** (CME)
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