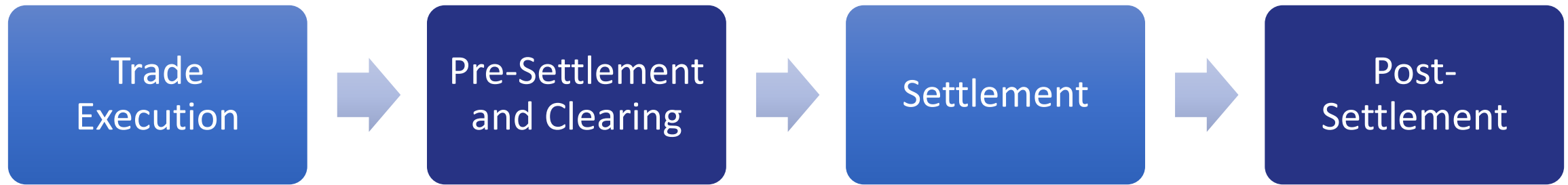




## Chapter 3 - Settlement Characteristics

11 Questions

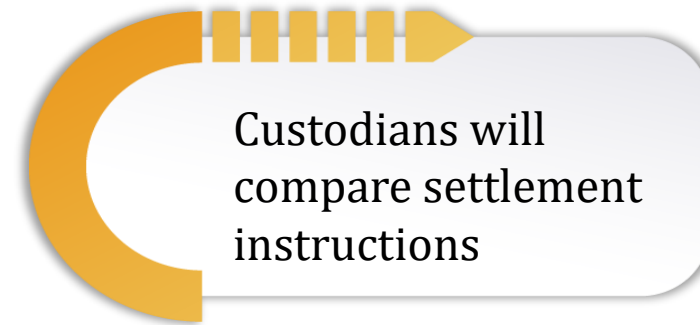
# The Trade Cycle



# Pre-Settlement

The Pre-Settlement stage is for the two sides to the trade to compare trade details and to eliminate any mismatches, prior to the exchange of cash and securities.

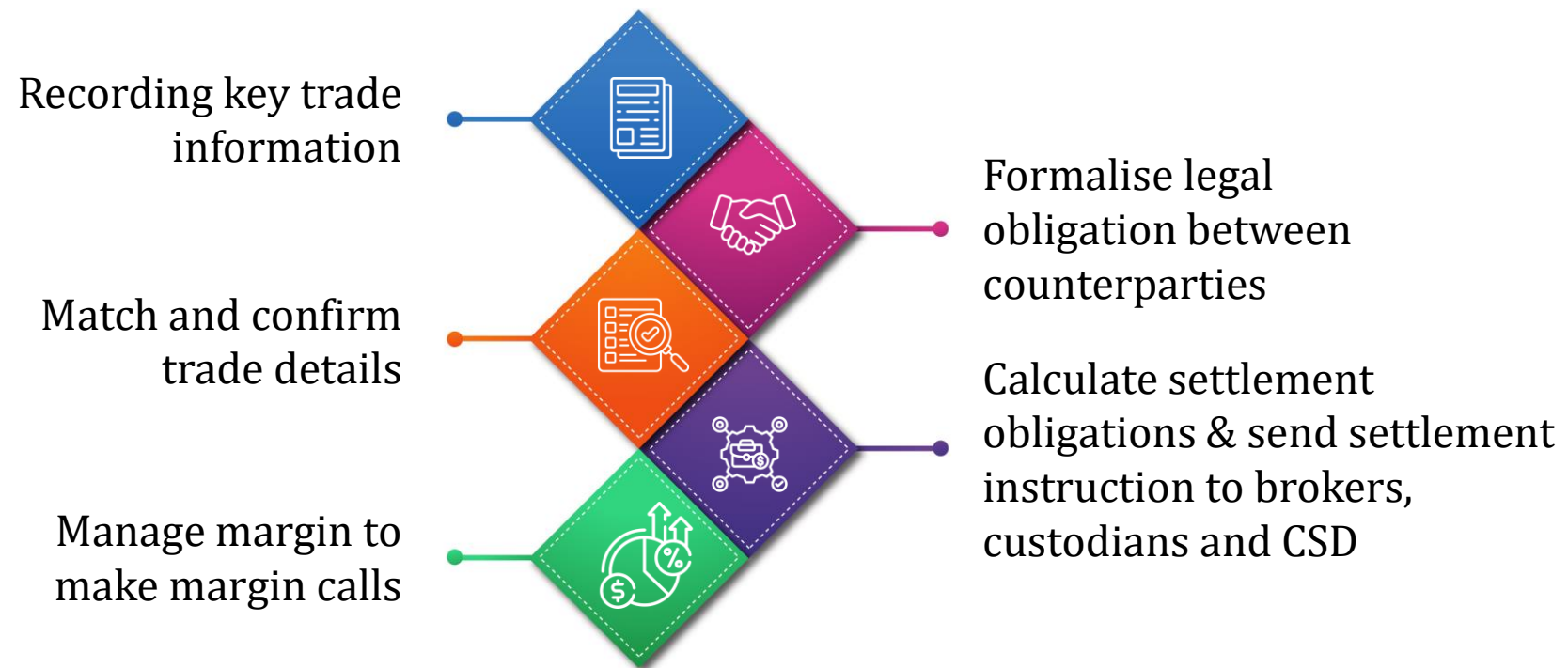
**This is done on 2 levels:**



# Clearing

Clearing is the process through which the obligations held by buyer and seller to a trade are defined and legally formalised.

## Clearing involves the following:



# Clearing via a CCP

The buyer and seller can interact exclusively with a CCP and remain anonymous to each other – this is known as novation.

The benefits of Clearing with a CCP include:



Credit risk limited to the CCP only



Streamlines clearing relationships and reduces counterparty risk



Risk of default by the CCP is lower than that of individual counterparties



CCP is obliged to finalise the settlement between counterparties even if one party fails to meet its obligations

- The loss can be compensated with the defaulting party's property
- The loss may be met through mutual guarantee by other participants – this is only if the defaulting party's property is not enough

Netting involves offsetting positions or obligations between trading partners. This reduces multiple individual positions into fewer or a single position.

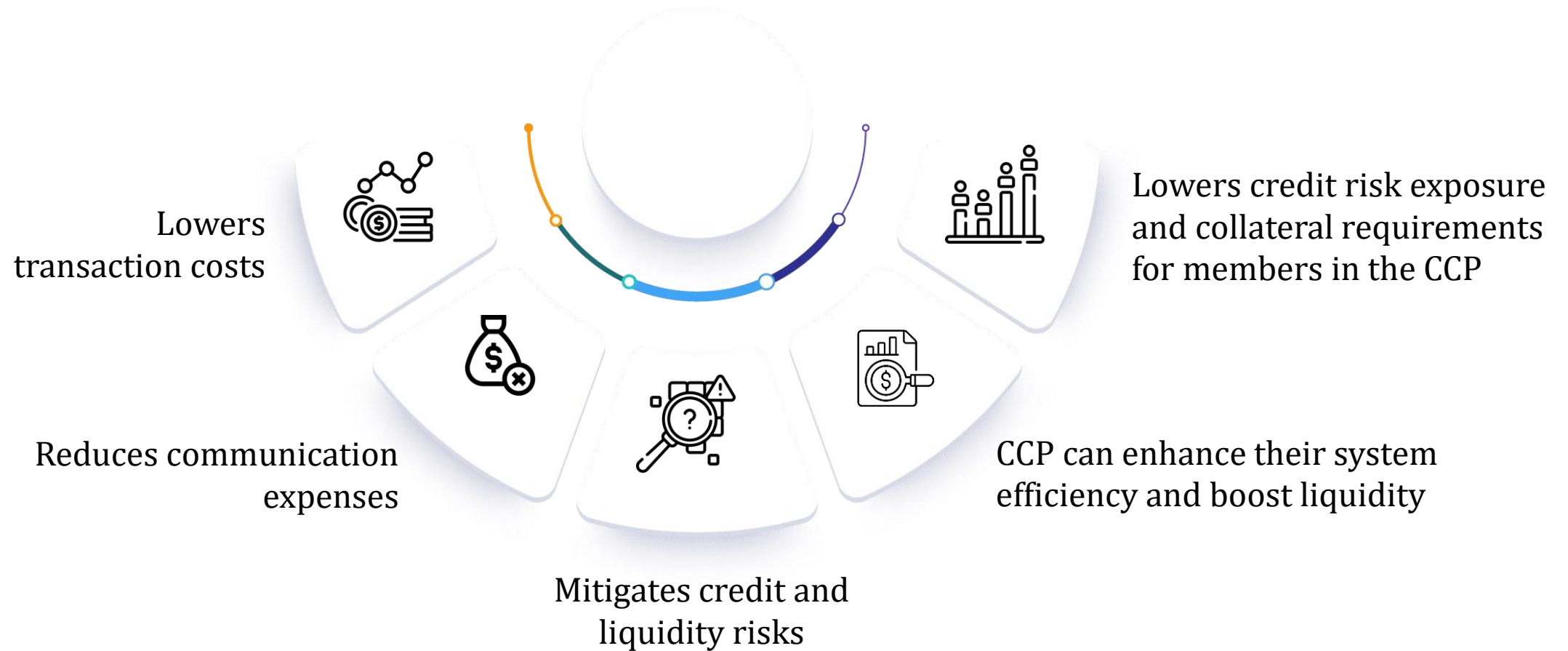
## Example:

Company A will exchange US\$1 million to Company B while Company B is required to exchange US\$400,000 to Company A.

In a single transaction, Company A will exchange US\$600,000.

# Benefits of Netting

## Why would trading partners undertake Netting?



# Automating the Functions Between Execution and Settlement

Firms have introduced facilities designed to centralise and automate trade processing in the post-execution and pre-settlement space.

**Example:**

Central Trade Manager  
(CTM) by the DTCC

This has been made possible largely by key advances in messaging and communication.

**Example:**

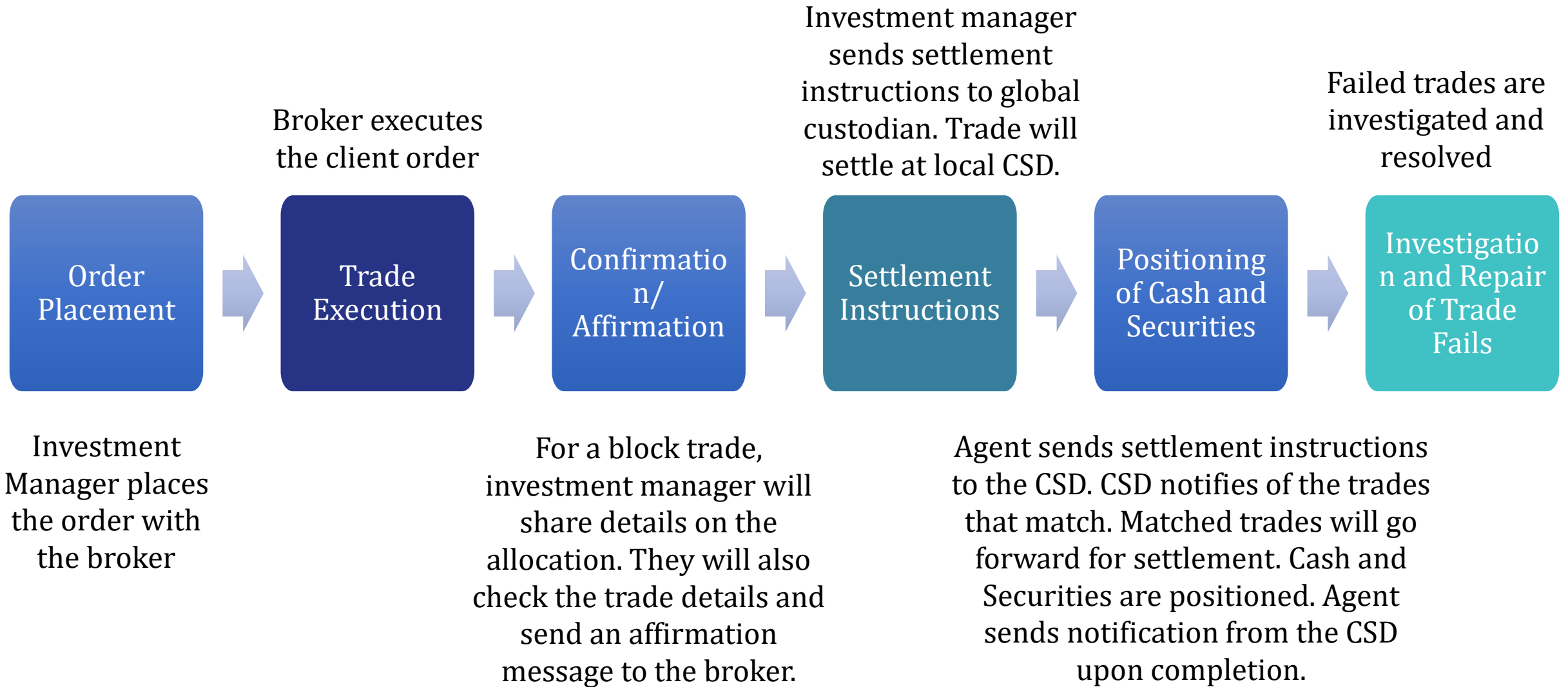
SWIFT and FIX Protocol



# Settlement Periods in the Selected Markets (Summary)

Country	Equities	Bonds/Debt
Australia	T+2	T+2
Brazil	T+2	T+0
France	T+2	T+2
Germany	T+2	T+2
Hong Kong	T+2	T+0
India	T+1	T+1
South Korea	T+2	T+0
Japan	T+2	T+1
UK	T+2	T+1
US	T+1	T+1

# Financial Institutions in the Settlement Process



# Payments Systems (Summary)

Domestic and international systems provide finality of payment in central bank money. Here is a summary:

Payment System	Country	Description
<b>CHIPS</b>	US	Computerised network for the transfer of US dollar payments. Provides intra-day payment finality through a real-time system. Each participant pre-funds its CHIPS account by depositing a quantity of funds to cover its intra-day exposures. Banks with positive closing positions at the end of the day are credited with the cash balance through the Fedwire.
<b>Fedwire</b>	US	Federal Reserve's electronic funds transfer system. It is an RTGS system where funds transfers are immediate, final, and irrevocable when processed. Transfers are completed on the same day. Fedwire operates as follows: Online transfers – 21:00 to 19:00 NY with 17:00 for foreign orders. Offline transfers – 09:00 to 18:00 NY with 16:30 for foreign orders. Instructions – 08:30 to 19:00 NY (online) and 09:00 to 16:00 NY (offline).
<b>CHAPS</b>	UK	UK's high-value payments system. Provides RTGS for credit transfers.
<b>Faster Payments</b>	UK	Handles the processing of internet, telephone and standing order payments in the UK market. All payments must reach the recipient's account by the next working day. Funds can be withdrawn on the same day.
<b>TARGET</b>	Europe	RTGS system for the Euro. Ensures same-day payment finality in central bank money. Migrated from TARGET to the TARGET2 platform. TARGET2 is open from 07:00 to 18:00 CET, with 17:00 for customer payments.
<b>CLS Bank</b>	<i>Multiple</i>	Supported by the largest FX banks to eliminate settlement risk and reduce systemic liquidity risk in the FX market. 18 central banks have currencies eligible for settlement in CLS. Reduces Herstatt risk with real-time PvP settlement between participating currencies. Banks can use CLS through direct membership, settlement member, or user (sponsored) member.

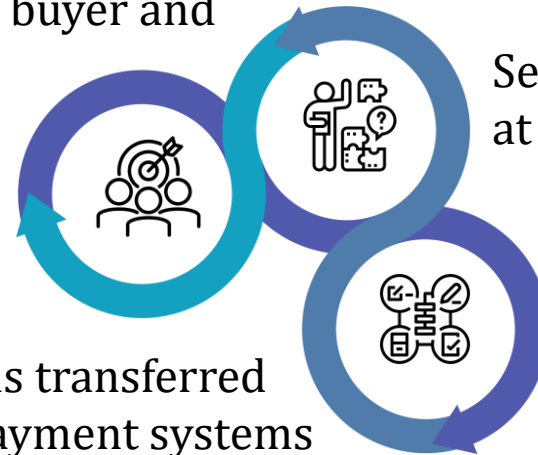
## The Pre-Settlement stage focuses on:

- A. Executing the transfer of securities and cash between the parties
- B. Finalizing the ownership of securities in the central depository system
- C. Comparing trade details on the two sides and eliminate any mismatches
- D. Monitoring post-trade discrepancies and initiating penalties for failed trades



## Recap: The Settlement Process

Settlement is the process of exchanging securities and cash between buyer and seller to fulfill obligations



Securities are delivered at a CSD/ICSD

Delivery of cash is transferred via banking or payment systems

→ Let's explore some of the different methods used for settlement...



Free of Payment (FOP) Settlement is where one or both parties deliver without immediate receipt of the corresponding asset.

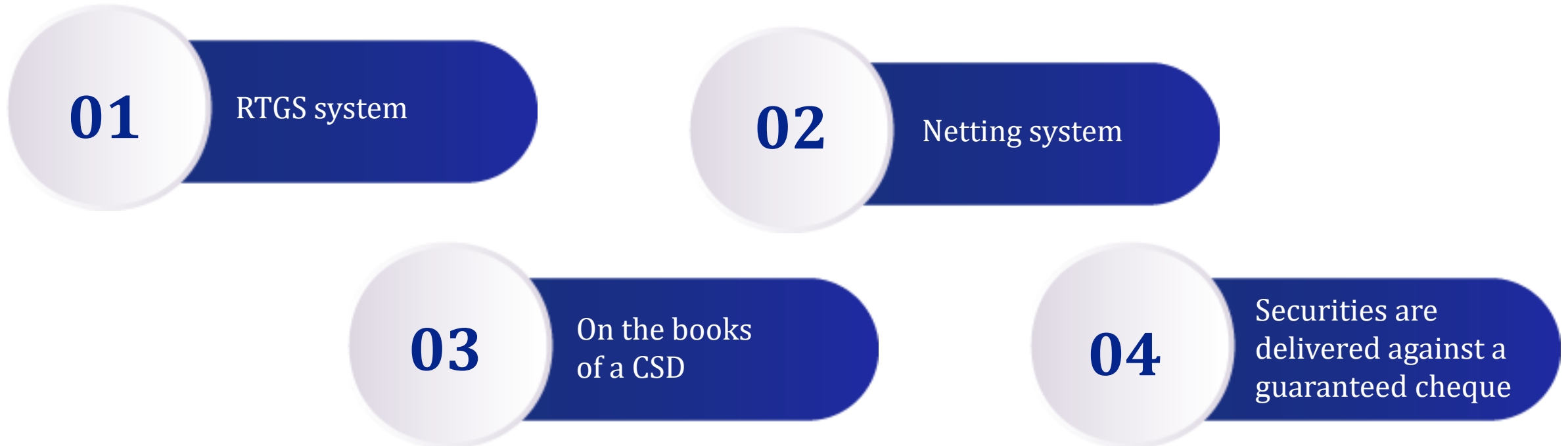
→ This leads to high counterparty default risk and is not recommended by regulatory authorities.

# DvP Settlement

Delivery versus Payment (DvP) Settlement ensures simultaneous and final exchange of securities and cash between buyer and seller.

→ This reduces counterparty default risk and is preferred over the FOP Settlement method.

DvP can be achieved in the following ways:





## Bilateral Netting

Trades between two counterparties in the same security are netted to result in a single transfer



## Multilateral Netting

Expands netting to include all trades in the same security among multiple counterparties

Let's go through a worked example...



# Netting – Worked Example

Company A conducts trades in a specific share with 3 counterparties: C1, C2 and C3. Here are the trades:

Company A buys 10,000 shares  
from C1 for £30,000

Company A sells 5,000 shares  
to C2 for £18,000

Company A sells 2,500 shares  
to C3 for £6,000

Multilateral Netting would allow each party to settle a single cash and securities balance with the CCP. For Company A, it would mean:

Company A receives 2,000  
shares (6,000 / £3 per share)

Company A pays £6,000 in cash  
(30,000 – 18,000 – 6,000)

# Rolling Settlement

Rolling Settlement involves settlements occurring a specific number of business days after the trade date.

The US moved to T+1 settlement in May 2024



Most markets follow T+2 settlement for equities and fixed income securities

Shorter settlement cycles reduce the number of outstanding trades, minimizing aggregate market exposure

**FX Transactions are used for 3 purposes:**



Obtain currency to  
fulfill immediate  
payment obligations



To profit from  
changes in exchange  
rates through trading



Hedge against future  
exchange rate  
fluctuations

FX prices are quoted as follows:

GBP / USD 1.2988-92

Here is the breakdown:

**GBP is the base currency**

**USD is the quoted currency**

**1.2988 is the bid price**

- GBP 1 will buy USD 1.2988

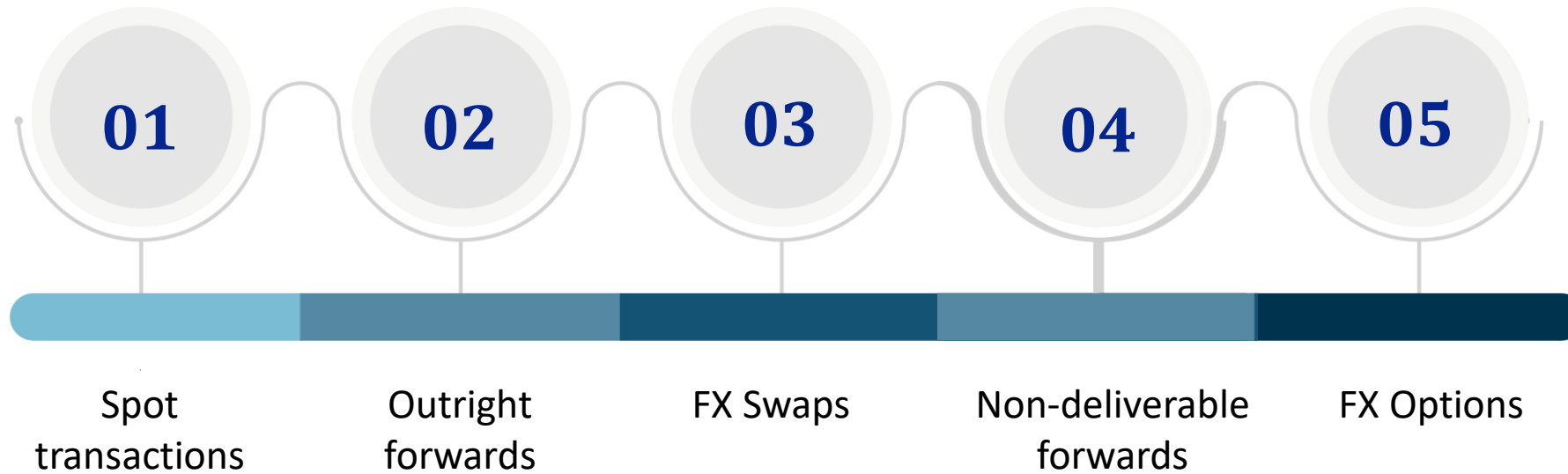
**1.2992 is the offer price**

- USD 1.2992 will buy GBP 1

The spread is the difference between the bid and offer prices. This is the trader's profit margin on the transaction.

# Foreign Exchange (FX) Settlement

FX Transactions include:



# Transfer of Title

When securities are sold or transferred to a new owner, the method for transferring legal title will depend on whether the security is in bearer, certificated or dematerialised form.

	<b>Bearer</b>	<b>Certificated</b>	<b>Dematerialized</b>
<b>Method for holding securities</b>	Certificate and book entry	Register and certificate	Register and book entry
<b>Method for securities transfer</b>	Book-entry transfer	Transfer and reregistration	Book entry and reregistration
<b>Holder name on register</b>	No	Yes	Yes

# Contractual Settlement

## Actual Settlement Date Accounting (ASDA)

Proceeds from a securities sale are credited to the seller, and purchase costs are debited from the buyer, on the actual settlement date

E.g. Trade is scheduled on T+1 but settles on T+4

01

Seller receives funds 3 days late

02

Sellers lose the opportunity to use or earn interest on funds during the delay period

03

Buyer will not need to pay cash to settle the transaction until 3 days after the originally scheduled settlement date (T+1)

## Contractual Settlement Date Accounting (CSDA)



Funds will be credited or debited on the settlement date (or an otherwise pre-agreed value date), even if trade settlement is not yet final and irrevocable on that date

→ CSDA provides clients with greater certainty over their cash flows and is only offered in well-structured/liquid markets.

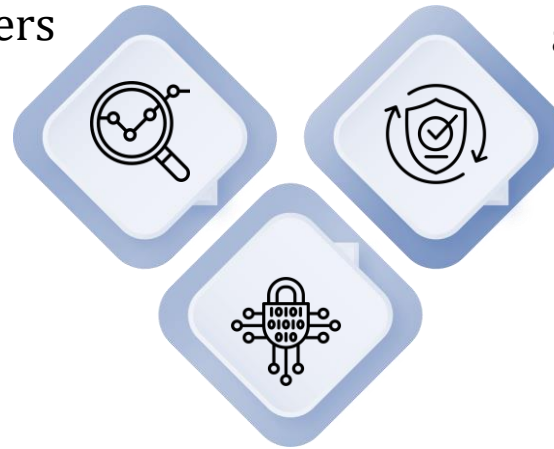


# Distributed Ledger Technology (DLT)

DLT creates a shared, synchronized ledger across multiple sites or institutions without a central register

Each ledger is an exact copy and updates independently while synchronizing with others

Records are confirmed and updated without a central authority



Achieved through cryptographic keys and digital signatures

→ DLT could provide cost efficiencies, speed, and effectiveness to settlement and registration of transactions.

# Failed Settlement

Settlement Failure could occur due to the following reasons:



Non-matching  
settlement instructions



Insufficient securities



Insufficient funds



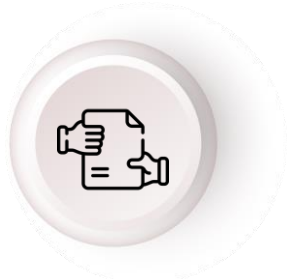
Corporate actions



Counterparty default

# Buy Ins and Sell outs

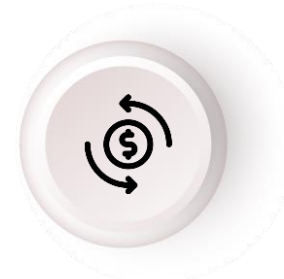
## Seller fails to deliver securities → Buy-in



Buyer issues a notice to the seller with a deadline for delivery, warning of a buy-in if not met



If the seller fails to deliver by the deadline, the buyer purchases the securities from a third party at the current market price



Any additional costs from the buy-in are charged to the seller

# Buy Ins and Sell outs

## Buyer cannot deliver cash → Sell-out



Seller notifies the buyer with a deadline to provide necessary funds, warning of a sell-out if not met



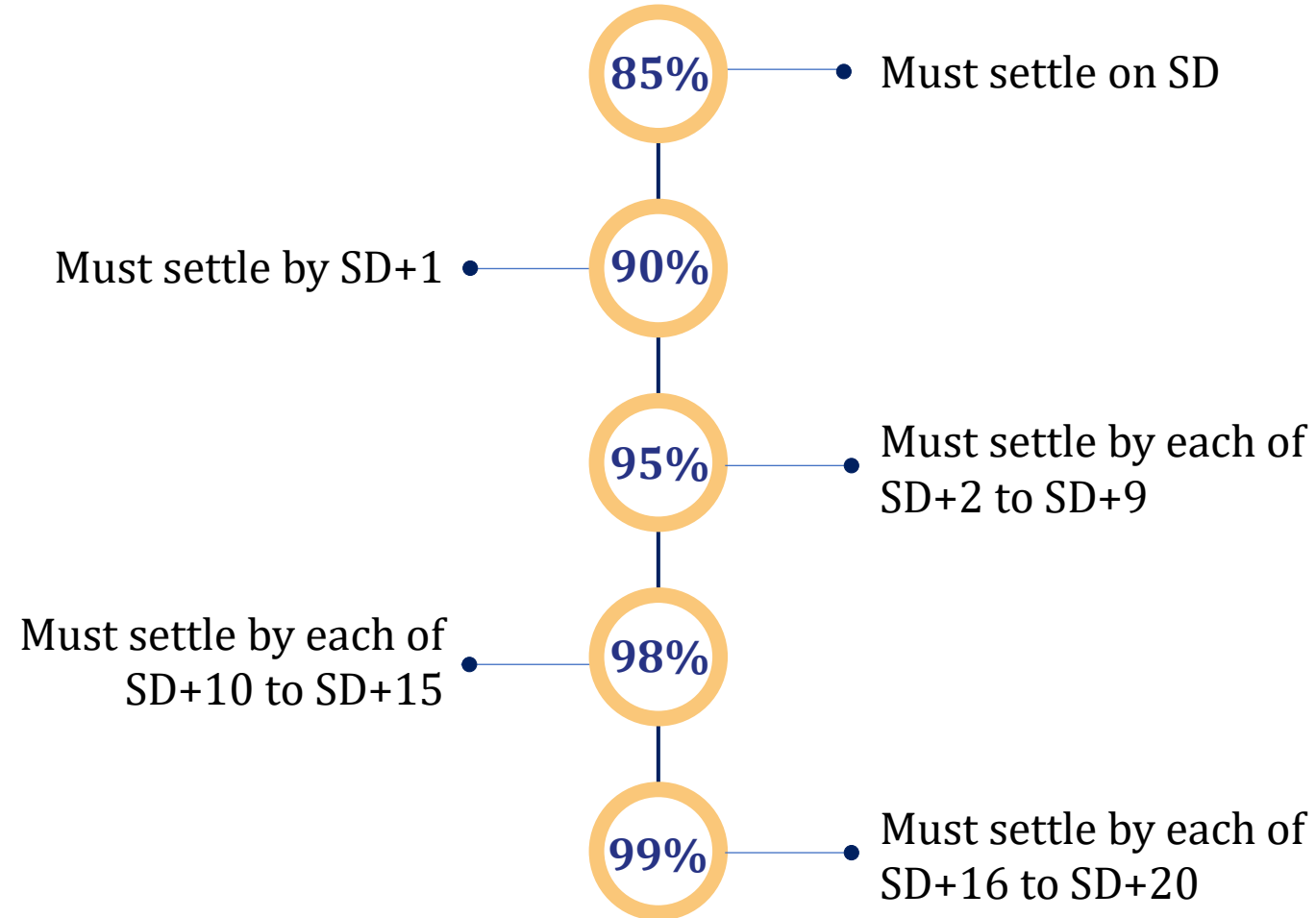
If funds are not received by the deadline, the seller sells the securities to another buyer to cover the cash leg



Additional costs from the sellout are passed on to the original buyer

# Fines

EUI will impose a fine if a firm fails to meet the following targets for trade settlement during a two-month period.



If a buyer or clearing agent causes a settlement failure, the seller can claim interest for the loss on the amount they would have received.

The claim amount can be calculated as follows:

$$\text{Claim amount} = \text{Net amount} \times \frac{\text{overdraft rate}}{100} \times \frac{\# \text{ of calendar days}}{360 \text{ (or 365/366)}}$$

→ Let's go through a worked example...

# Interest Claims

A buyer was due to pay £300,000 for a number of bonds.

The settlement was delayed by 5 days. The seller pays 2% on its overdraft.

Calculate the claim amount (use 365).

$$\text{Claim amount} = 300,000 \times \frac{2}{100} \times \frac{5}{365} = \text{£}82.2$$

**CHAPS and CHIPS are payment systems operating in:**

- A. Europe and US respectively
- B. US and UK respectively
- C. UK and Europe respectively
- D. UK and US respectively

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