

DERIVATIVES

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THE DERIVATIVE MARKET

- Global derivatives markets are worth tens of trillions of dollars annually
- Can be a transaction in isolation or a part of a broader transaction like structured finance, project financing, securitisations, CDOs and repackagings
- Mystery
- Terminology

FACTS AND FIGURES

- BIS reports USD 595 trillion notional of derivatives at end June 2018
- USA reports average daily notional interest rate derivative trading Q1 2017 at USD 787 billion
- USA reports Q1 2017 average number of interest rate derivative trades 4718
- 74% of interest rate derivative turnover involves an end user on one side and a reporting dealer on the other.

EXAMPLES: ALL MARKET SECTORS

Manufacturing:

- Manufacturers use derivatives to help lock in the cost of issuing debt to finance new investments and plants, which contributes to growth and job creation.

Exporting:

- Exporters use derivatives to achieve certainty in the rate they can convert future overseas revenue, which creates stability and keeps them competitive.

Food Production:

- The agricultural businesses that produce food and the companies that bring it to store use derivatives to manage the risk of fluctuating crop, livestock and fuel prices.

Energy:

- Explorers, producers and distributors of energy use derivatives to manage changes in energy prices and reduce volatility for consumers.

Financial Services:

- Banks use derivatives to manage their interest rate risk, enabling them to expand lending to individuals and businesses.

EXAMPLES: ALL MARKET SECTORS

CONTINUED

Mortgage Providers:

- Derivatives allow mortgage providers to offer a choice of fixed-rate and floating-rate mortgages.

Transport:

- Airlines use derivatives to hedge fuel costs, which helps to keep ticket prices more stable.

Pensions:

- Pension funds use derivatives to manage interest rate and inflation risk to protect the value of pension pots for future retirees.

Insurance:

- Insurance companies use derivatives to ensure premiums paid by customers are sufficient to meet future insurance claims.

EXAMPLES OF DERIVATIVE TRANSACTIONS

- Interest Rate Swap
- Basis Swap
- Forward Rate Transaction
- Commodity Option
- Equity or Equity Index Swap
- Equity Option
- Equity Index Option
- Bond Option
- Interest Rate Option
- Cap Transaction
- Floor Transaction
- Collar Transaction
- Currency Swap
- Cross Currency Rate Swap
- Currency Option
 - Deliverable
 - Non-Deliverable
- Foreign Exchange Transaction
 - Deliverable
 - Non-Deliverable
- Swaption
- Credit Default Swap
- Total Return Swap
- Bullion Trade
- Bullion Option
- Bullion Swap
- Any Combination of the above

TODAY

- What is a derivative?
- Examples
- Terminology
- How are they documented?
- Legal issues

WHAT ARE DERIVATIVES?

DEFINITION

“A derivative is a contract, whose value derives from that of an underlying asset or index”

WHAT ARE DERIVATIVES?

FIVE KEY ELEMENTS

Contracts

- general principles of contract law apply
- capacity and authority

Rights and obligations

- may change over life of contract as value changes
- market risk

Future performance

- Counterparty risk - bankruptcy

Linked to underlying asset

- value of underlying affects value of derivative

Financial instruments

- a derivative contract has a value and can be sold independently of the underlying asset.

TYPES OF DERIVATIVES: FORWARDS AND OPTIONS

The crucial building blocks to understanding all derivative products:

Forwards

- Terms agreed now
- Creates legal obligations for both parties to perform in the future
- Example: equity forward (agreement today for the sale and purchase of specified shares on a specified date in the future at an agreed price) (aka “future” in exchange traded context)

↓ Sub-set

Swaps

- Typically an exchange of cash flows over time
- A type of forward, since:
 - terms agreed now
 - performance in future
 - creates legal obligations for both parties to perform in the future
- Example: fixed to floating interest rate swap

Options

- Terms agreed now
- Option buyer has right (but not obligation) to exercise in future
- Put or call (sell or buy)
- Example: equity option (agreement today giving one party the option to buy/sell specified shares in the future at an agreed price)

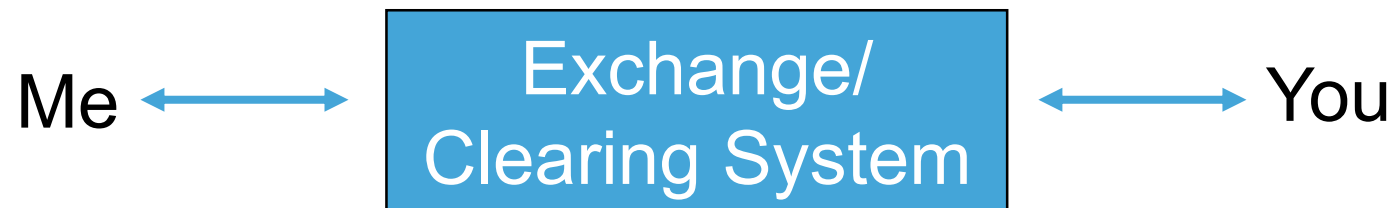
HOW ARE DERIVATIVES TRANSACTED?

OTC (over-the-counter) or securities or funds



Vs

Exchange traded



EXAMPLE OF A FORWARD

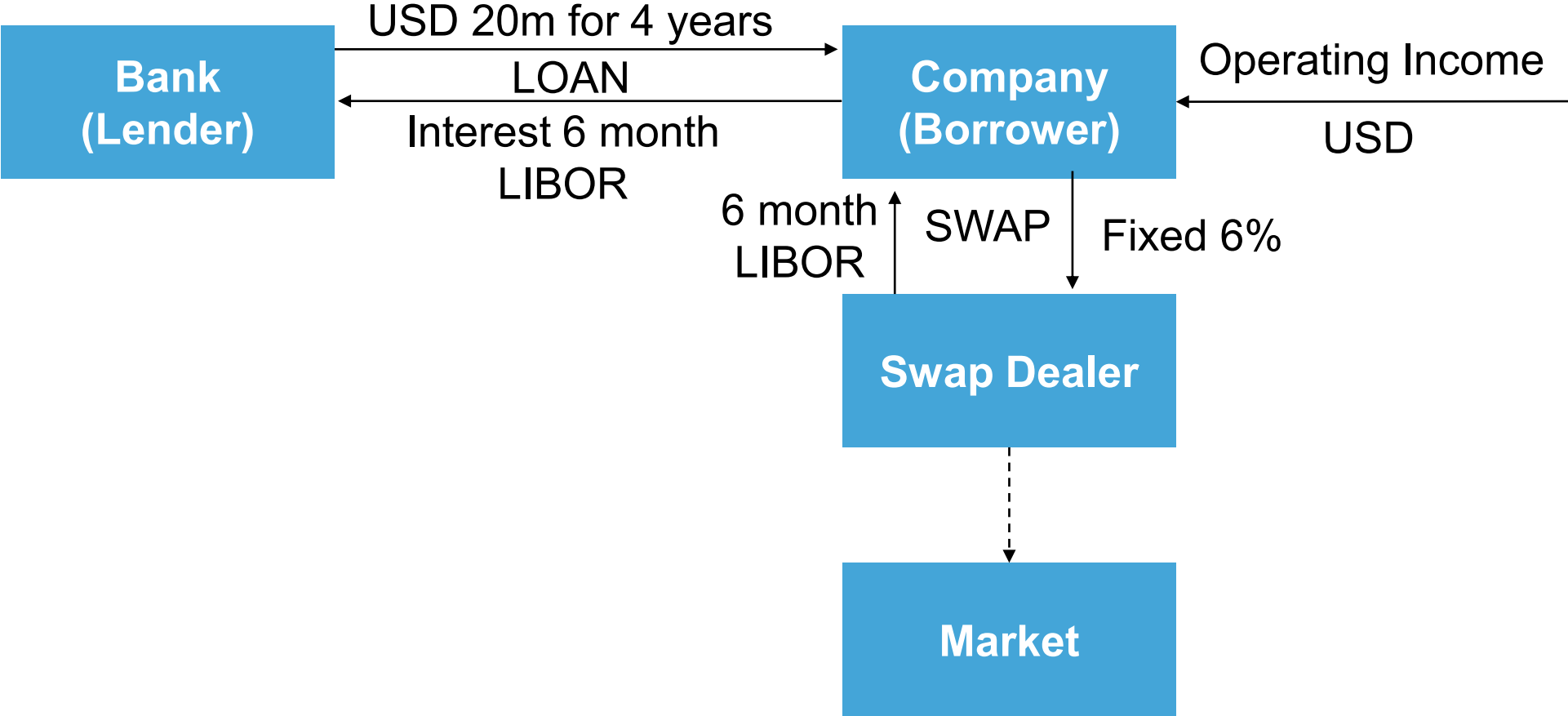
- You and I agree now that I will sell my shares to you in 5 years for \$100.
- Compulsory (no optionality)
- Why?

- In 5 years what happens?
- What if cash settled?

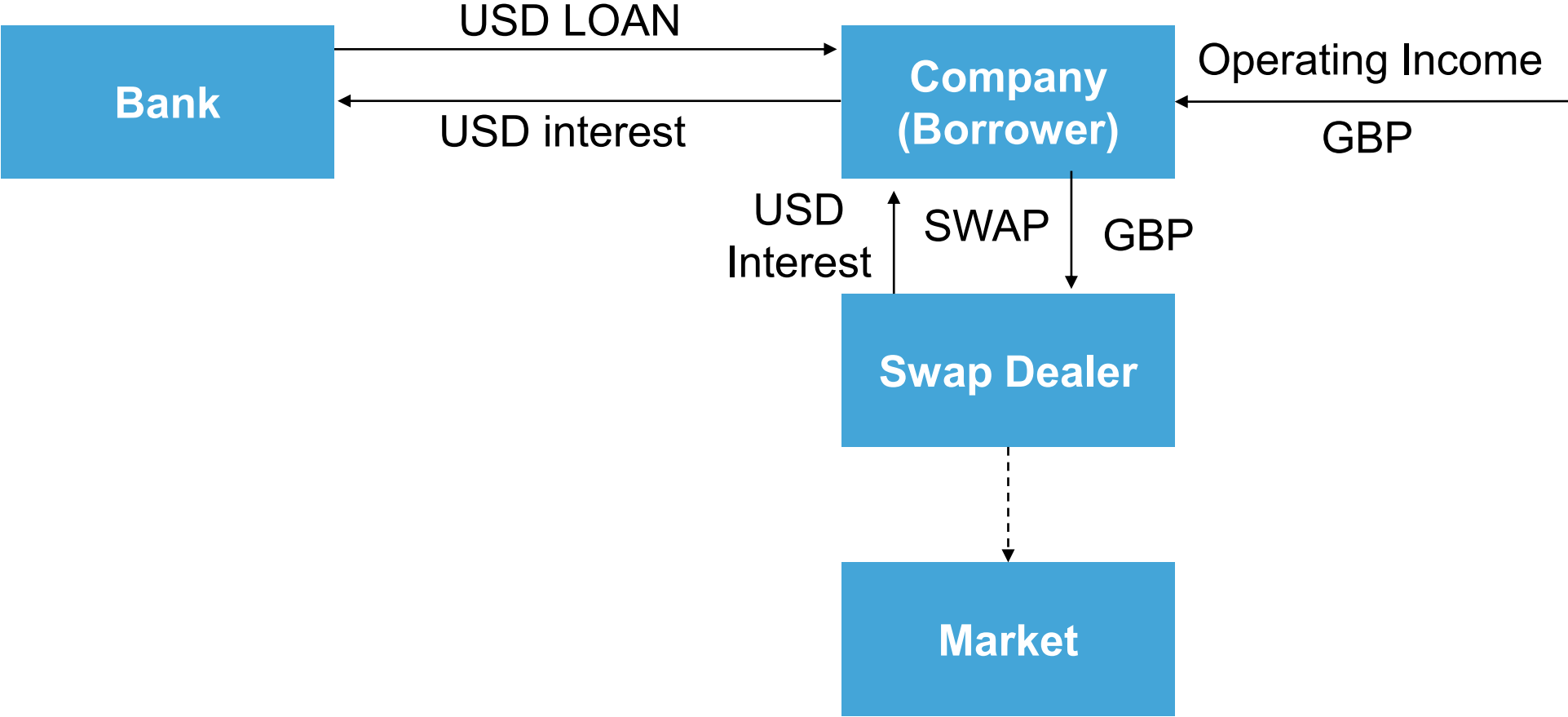
ANOTHER EXAMPLE OF A FORWARD: SWAPS

- Subset of forwards
- Can swap:
 - assets such as bonds or equities
 - cash flows
 - interest rates
 - currencies
 - credit risk

EXAMPLE: INTEREST RATE SWAP



EXAMPLE: CURRENCY SWAP



EXAMPLE OF PUT OPTION

- You and I agree now that I will have the option to sell (put) my shares to you in 5 years for \$100
- I “may do”, you then “must do”
- Why?
 - Option buyer has paid a premium to option seller
- In 5 years what happens?

EXAMPLE OF CALL OPTION

- You and I agree now that you will have the option to buy (call) my shares in 5 years for \$100
- You “may do”, I then “must do”
- Why?
 - Option buyer has paid a premium to the option seller
- In 5 years what happens?

TERMINOLOGY: OPTIONS

Terminology

- Call option - a right to purchase
- Put option - a right to sell
- Premium
- Exercise
- Exercise price
- European style - exercisable only at maturity
- American style - exercisable at any time in the exercise period, hence expire
- Bermudan style - exercisable on certain specified dates in the exercise period

TERMINOLOGY: EXPOSURE AND RISK IN DERIVATIVES

Position/Exposure

- if A owes money to B then B can be said to have an exposure to/be exposed to A

Credit risk

- B is taking a risk in respect of A's creditworthiness that A will be able to pay B back before A goes bust (risk of insolvency)

Settlement risk

- the risk that A fails to settle its obligations on the due date (thus perhaps causing B to default elsewhere)

Market risk

- the risk of an adverse movement in the relevant market if derivative needs to be re-booked

WHY USE DERIVATIVES?

Principally:

Hedging

- Managing out **risk**
- Remember: a hedge is an investment made to reduce the risk of loss from fluctuations in interest rates or the price of commodities, currencies or securities etc.

Speculation

- Deliberately taking on risk for the reward.

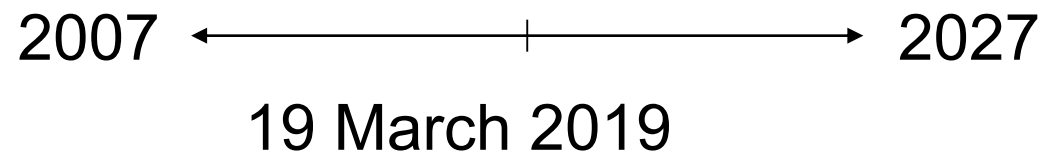
Arbitrage

- Taking advantage of different prices in different markets.

HOW ARE DERIVATIVES VALUED?

MARK-TO-MARKET (1)

- Value of derivative to each party at a moment in time during the tenure of the derivative



- Example: 1EUR/1USD Swap

HOW ARE DERIVATIVES VALUED?

MARK-TO-MARKET (2)

- What would parties pay to enter transaction again
- In the money
- Out of the money
- Why calculate?
 - Determine exposure for credit and regulatory purposes

WHAT IS COLLATERAL?

- A credit enhancement mechanism used to reduce or mitigate credit risk
- Limits the credit exposure of one or both parties across a portfolio of derivatives
- The net mark-to-market value of the portfolio between two parties is reviewed on a periodic basis and, if necessary, the out-of-the-money party transfers collateral to the in-the-money party.

What is the purpose of taking collateral?

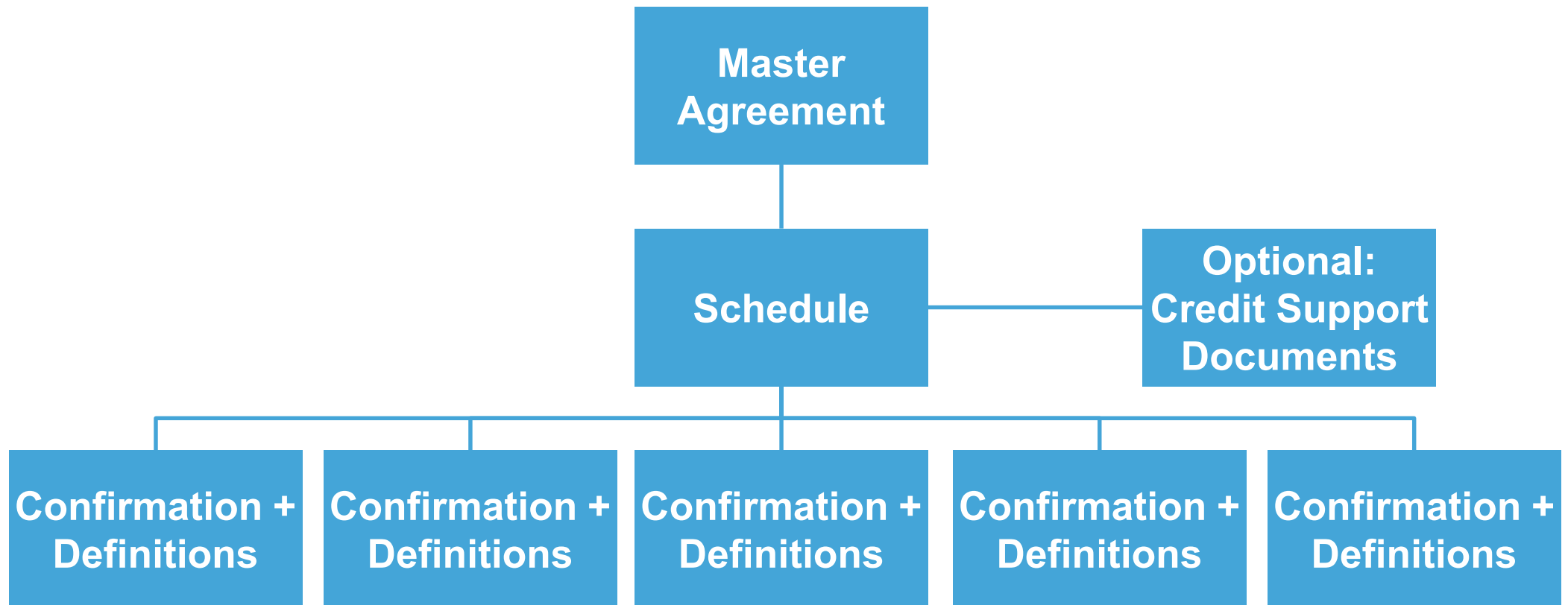
- Counterparty risk transformed into legal, operational, market, liquidity risks
- Regulatory capital can be reduced
- Compliance with OTC regulation
- Collateral can produce access to:
 - More clients, more liquidity
 - Longer maturity transactions
 - Larger size transactions
 - Transactions with high risk elements.

OTC DERIVATIVE DOCUMENTS

INTRODUCING THE ISDA MASTER AGREEMENT

- Who is ISDA?
- What is a Master Agreement?
- The 3 Master Agreements:
 - 1987
 - 1992
 - 2002
- What does it look like?

ISDA DERIVATIVE DOCUMENTATION FRAMEWORK: THE KEY COMPONENTS



BENEFITS OF MASTER AGREEMENT

- Certainty as to legal position
- Liquidity: facilitates more market trading when parties trade consistently
- Bank documentation teams: reduces need to rely on outside Counsel
- Reduces costs of documenting derivative transactions.

ISDA MASTER AGREEMENT

COMPARISON TO LOAN AGREEMENT

	ISDA Master Agreement	Loan
Representations	✓	✓
Withholding tax/gross-up	✓	✓
Transfer restrictions	✓	✓
Events of Default	✓	✓
Payments on default	✓	✓
Notices	✓	✓
Governing law	✓	✓

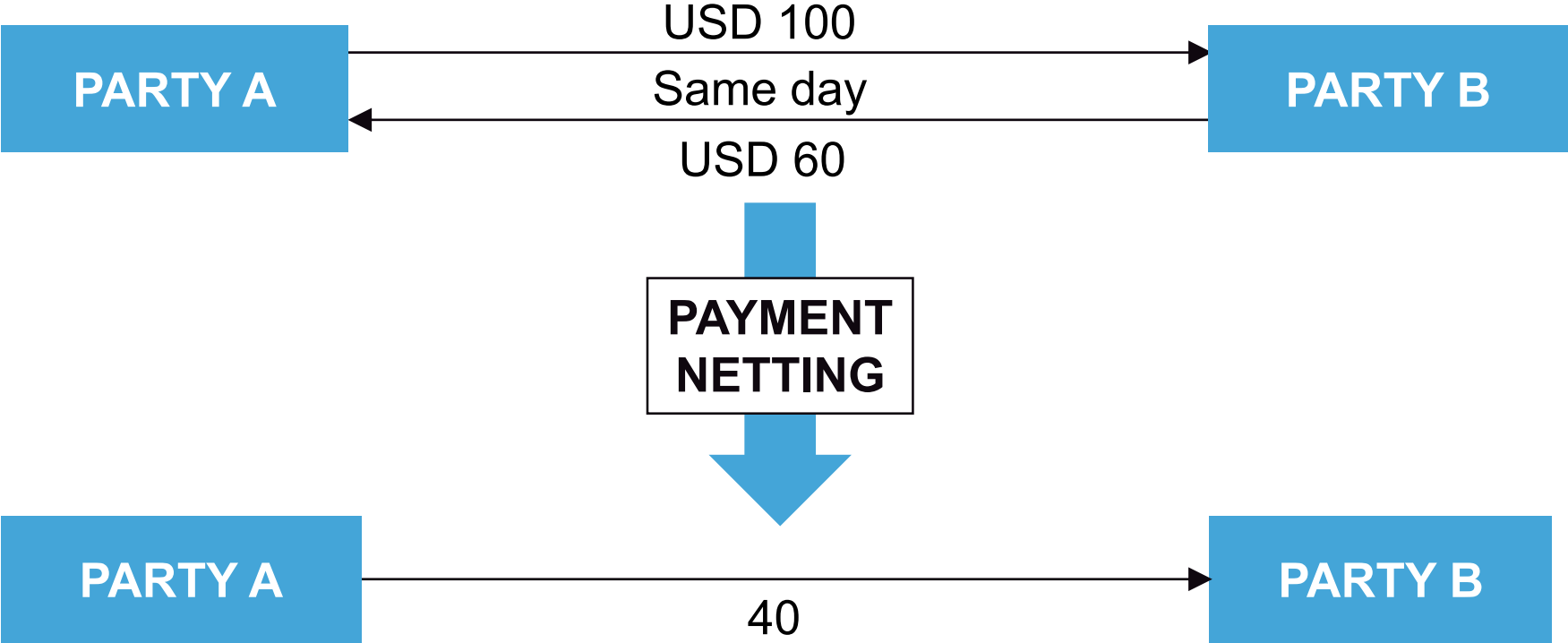
IMPORTANT MASTER AGREEMENT CONCEPTS

PAYMENT NETTING

Payment netting for same currency payments on same day benefits counterparties by reducing:

- number of payments
- size of payment
- scope for settlement error
- cost of payment
- credit exposure
- settlement risk.

EXAMPLE OF PAYMENT NETTING



IMPORTANT MASTER AGREEMENT CONCEPTS

WHEN DO TRANSACTIONS TERMINATE EARLY?

Events of Default (All trades terminate)

- Bankruptcy
- Failure to Pay
- Breach of Agreement
- Cross Default etc.

Termination Events (Some trades terminate)

- Illegality
- Force Majeure
- Tax Event
- Additional Termination Events etc.

IMPORTANT MASTER AGREEMENT CONCEPTS

CLOSE-OUT NETTING

How does close-out netting work?

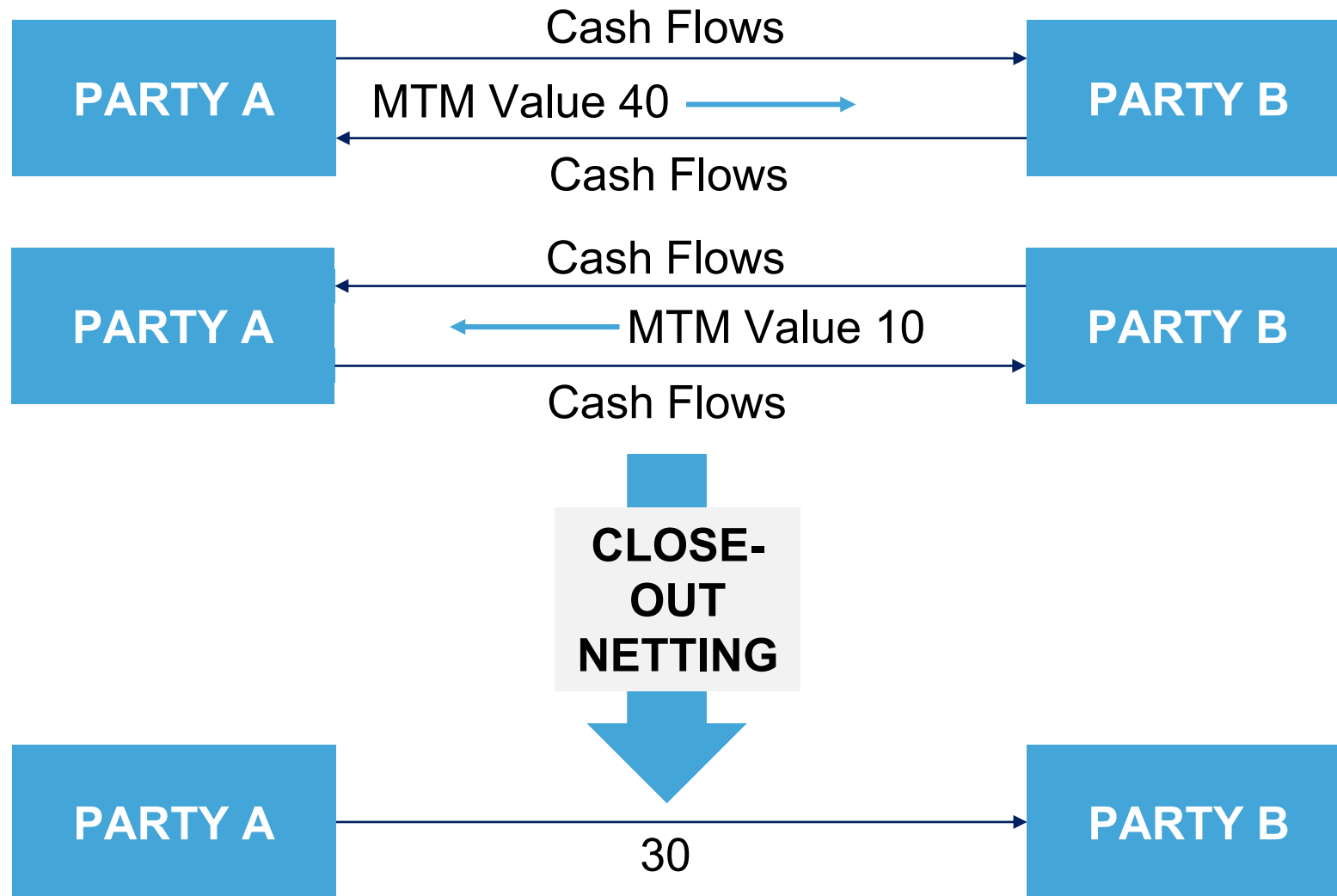
Upon insolvency

- Accelerate performance of individual derivative transactions
- Convert non-cash amounts to cash equivalent
- Convert all amounts to a base currency (the “Termination Currency”)
- Set-off each amount to produce single figure
- Intended to stop “cherry-picking” by liquidator.

As a concept before insolvency

- Risk management
- Collateral on a net basis
- Regulatory capital requirements for banks.

EXAMPLE OF CLOSE-OUT NETTING



THE ROLE OF THE LAW AND LAWYERS

Effective risk management requires legal certainty. In the ISDA context this means:

- Enforceability of derivatives contracts
- Clarity of insolvency law and enforceability of netting provisions
- Clarity regarding the treatment of collateral.

Key questions:

- Will my agreement be respected and enforced by a court or arbitration tribunal?
- Will it be enforced as written, both before and after my counterparty's insolvency?
- How can I protect against the risk of my counterparty's insolvency?
 - Early termination and close-out netting under a master agreement
 - Do collateral arrangements work?
 - Legal opinions.

LEGAL ISSUES IMPACTING DERIVATIVES

Licensing and Capacity

- Authorisation
- Capacity and authority

Regulatory requirements

- Trade reporting
- Mandatory clearing
- Mandatory margining.

Insolvency

- Collateral
- Netting

Legal characterisation

- Insurance
- Tax
- Gambling

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