

LCMB7032 - BFE

Money Markets

Staffing

Module Leader

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Seminar Leaders

REVIEW

- Discussed *risk* and the drivers of risk
 - Specific & systemic
- Discussed *Asset allocation*
 - Carefully selected assets can lower risk
- Broadened measures of *risk & return* to portfolios
- Discussed *Covariance & Correlation*
- Measurements of return for units of risk (Sharpe)

OBJECTIVES

- Discuss *Money Markets*
 - Global view of market
- Understand participants & instruments
 - Who operates in this market? Why & how?
- Introduced basic calculations to value Money Markets

MONEY MARKETS - a working definition

- Trading in short term financial assets
- Maturity one year or less
 - Compare to bonds
- Can be as short as overnight
 - In fact bulk of trading is for 24 hours
- What instruments are traded?

INSTRUMENTS (SUMMARY)

General characteristics of these instruments

- High credit rating
 - What does this say about default?
- Very liquid
 - What about bid / ask spread?
- Simple, with LIBOR used as a reference
- Very short term (compare to bonds)
- So who trades these instruments?

MARKET PARTICIPANTS

WE NEED TWO PARTIES TO MAKE A MARKET

- Supply
 - Federal Government
 - US States
 - Local Governments (county, municipalities)
 - Some large corporations
 - BUT only those with highest credit ratings
- Demand
 - Banks
 - Institutional investors
 - Financial institutions
 - Individuals

INSTRUMENTS (DETAIL)

Certificates of deposit

- Colloquially referred to as *CDs*
- These are fixed term deposits
- Sold to consumers at par
 - At redemption principal PLUS interest
- The secondary market for CDs is very liquid
- Market Markets largest secondary market

INSTRUMENTS (DETAIL)

T-Bills

- Short term obligations of the US Government
- Sold in maturities 1M, 2M, 3M, 6M, 12M
- Sold on discount basis
- Multiple secondary markets exist
 - Very liquid
 - In US these instruments are *fungible* with cash

INSTRUMENTS (DETAIL)

T-Bills (pt 2)

- Sold on Thursdays, mature on Mondays
- Competitive auction via *Primary Dealers*
- \$10,000K minimum with \$1K increments
- Registered, book entry (Federal Book Entry System)
- Large number issues outstanding at any one time

INSTRUMENTS (DETAIL)

U.S. Treasury Quotes

Monday, February 26, 2024

Treasury Notes & Bonds | [Treasury Bills](#)

Treasury note and bond data are representative over-the-counter quotations as of 3pm Eastern time. For notes and bonds callable prior to maturity, yields are computed to the earliest call date for issues quoted above par and to the maturity date for issues below par.

MATURITY	COUPON	BID	ASKED	CHG	ASKED YIELD
2/29/2024	1.500	99.3160	100.0020	0.0040	0.0776
2/29/2024	2.125	99.3100	99.3140	-0.0020	4.9781
2/29/2024	2.375	99.3120	99.3160	0.0020	3.7881
3/15/2024	0.250	99.2440	99.2500	0.0040	4.995
3/31/2024	2.125	99.2240	99.2300	unch.	5.270
3/31/2024	2.250	99.2320	99.2360	0.0080	5.129
4/15/2024	0.375	99.1100	99.1140	0.0080	5.338
4/30/2024	2.000	99.1360	99.1420	0.0060	5.244

INSTRUMENTS (DETAIL)

Federal agency discount notes (pt 1)

- Issued by GSEs
 - Entities called Government Sponsored Entities
 - “implicit” guarantee from US government
 - Does this guarantee impact risk/reward?
- Entities include (not a complete list)
 - FANNIE MAE, Federal National Mortgage Association
 - FHLB - Federal Home Loan Bank
 - FCS - Farm Credit System

INSTRUMENTS (DETAIL)

Federal agency discount notes (pt 2)

- Instrument Maturity ranges from one to 360 days
- Minimum of \$10K, then in \$1K increments
- Registered, book entry (Federal Book Entry System)
- These instruments are *unsecured*

INSTRUMENTS (DETAIL)

Commercial paper (CP) (pt 1)

- *Unsecured* promissory notes issued by corporations
- Shelf offering approval via SEC
 - allows easy access to the market
- Sold at a discount from face value
- Money markets are a key secondary market

INSTRUMENTS (DETAIL)

Commercial paper (CP) (pt 2)

- There are two ways to sell
 - *Direct Paper* - sold directly to investors by corp
 - *Dealer Placed Paper* - via intermediary
 - Size of placement & credit rating determine
- Maturity overnight to 270 days
- Minimum of \$25K but varies by program
- Both book and physical ownership

INSTRUMENTS (DETAIL)

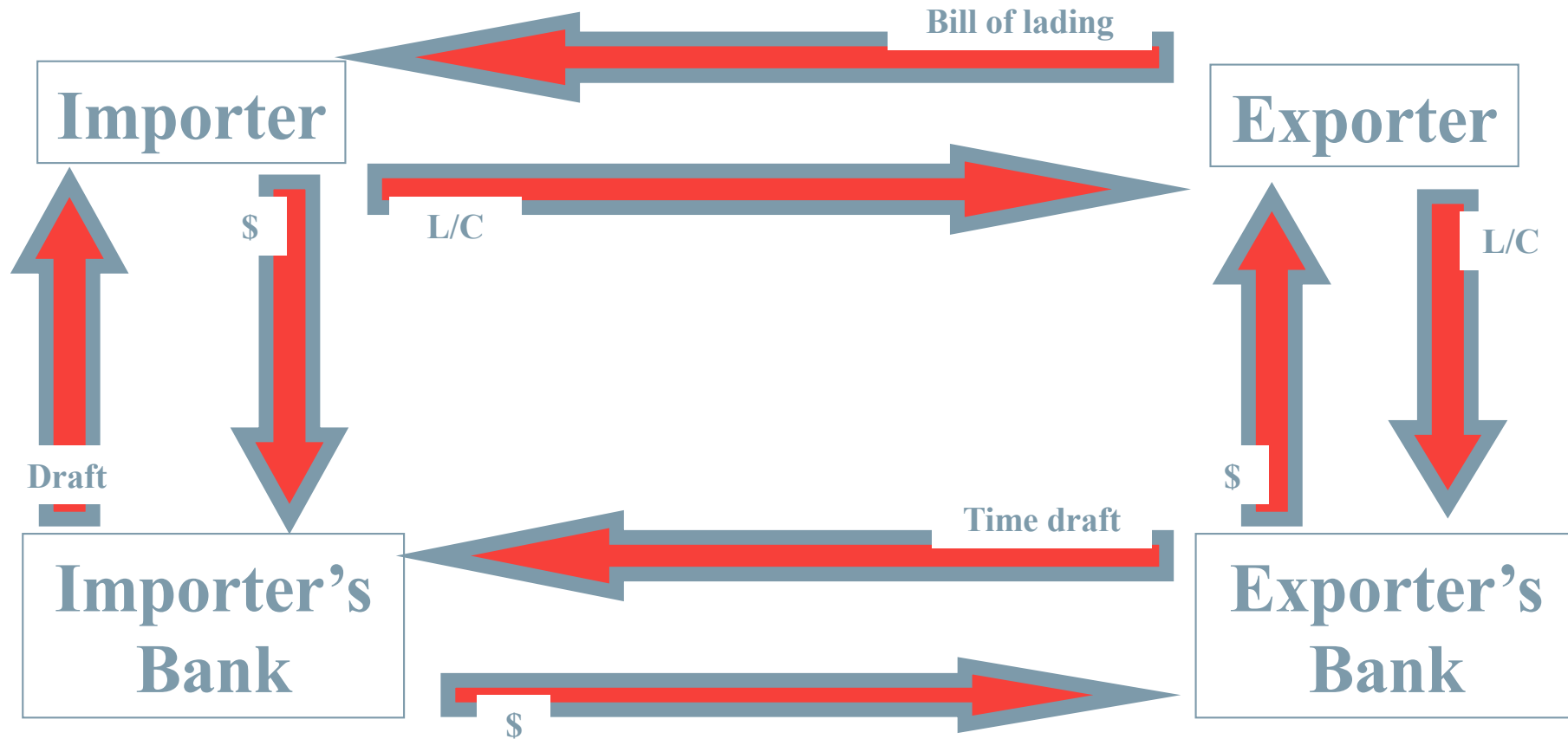
Bankers Acceptances (pt 1)

- Instruments to facilitate international trade
 - Money market investors provide liquidity
- Parties involved
 - Importer
 - Exporter
 - Importer's bank
 - Exporter's bank
 - Investor puts own money behind transaction
- These are negotiable instruments



INSTRUMENTS (DETAIL)

Bankers Acceptances (pt 2)



INSTRUMENTS (DETAIL)

Bankers Acceptances (pt 3)

- 1) Importer gives *Letter of Credit (L/C)* to exporter
- 2) Exporter gives *shipping documents* to importer
- 3) *Letter of Credit* delivered to exporter's bank
- 4) Exporters bank then creates a *time draft* based on L/C

INSTRUMENTS (DETAIL)

Bankers Acceptances (pt 4)

- 3) Importer's bank pays exporter's bank discounted amount of face
- 4) Importer's bank stamps time draft *accepted*
- 5) An accepted time draft is by definition a *Banker's Acceptance* note, and is negotiable
- 6) On maturity date importer's bank charges importers account full face value of the Bankers Acceptance note

20 MINUTE BREAK

INSTRUMENTS (DETAIL)

Municipal notes (pt 1)

- Short-term notes issued by municipalities
- Issued in anticipation of revenue
- Perceived to be very safe
- Tax benefits apply
 - Free of Federal / State / Local taxes (triple)
- Secondary markets exist
 - However are NOT deep

INSTRUMENTS (DETAIL)

Municipal notes (pt 2)

- Four basic types of securities, differing on use & issue
 - *RAN* “Revenue Anticipation Note”
 - *TAN* “Tax Anticipation Note”
 - *TRAN* “Tax & Revenue Anticipation Note”
 - *BAN* “Bond Anticipation Note”
- Risk varies according to type

INSTRUMENTS (DETAIL)

Money market funds

- These are pooled vehicles, lots of retail money
- Very high quality investments
- Backed by portfolio of money market securities
- Attractive to retail investors
- One share is worth \$1
- Interest paid in additional, fractional shares

INSTRUMENTS (DETAIL)

Federal funds

- Percentages of deposits held by banks
 - Uncommitted to the lending exercise
 - MUST be maintained at specific levels (i.e., reg cap)
- Funds are borrowed or lent by banks
 - To achieve regulatory capital
- Referenced by Fed Funds rate NOT LIBOR
- Almost always overnight only
- \$25M minimum

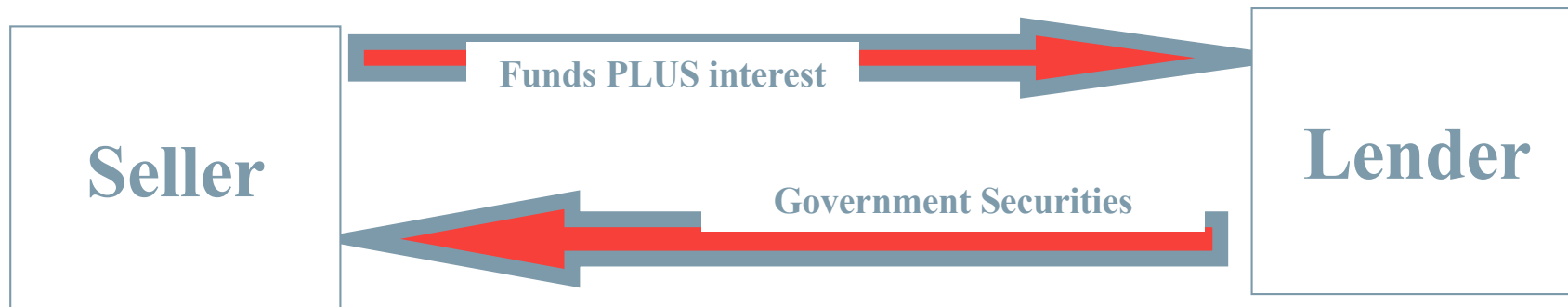
INSTRUMENTS (DETAIL)

Repurchase agreements (pt 1)

- Highly collateralised short-term loans
- Agreement structured as
 - Sale of securities to lender
 - With simultaneous agreement to repurchase
 - At known date and at agreed price
- These are
 - overcollateralised short term loans
 - Backed by high quality assets

INSTRUMENTS (DETAIL)

Repurchase Agreements (pt 2)



INSTRUMENTS (DETAIL)

Eurodollar deposits

- Deposits of US dollars offshore
- Not backed by FDIC insurance (perhaps local?)
- No reserve requirements
- Offer higher yield than domestic US deposits
- Zero currency exposure
 - If you need US dollars no need to convert from local currency e.g. GBP, JPY, EUR, RUB ...

INSTRUMENTS (DETAIL)

MINOR INSTRUMENTS

- FX swaps
- MBS swaps
- ABS swaps

Some basic definitions

- *Face Value*
 - Aka *Nominal*, stated value of the instrument
- *Discount instrument*
 - Security sold at at a *discount* to *face*
 - Later redeemed at *face* value
- Trade date
 - Date when a trade actually takes place
- Settlement date
 - When securities and funds are exchanged between seller and buyer
- Maturity
 - Date on which a fixed income instrument matures (I.e., stops paying)

Tools to evaluate discount instruments

- If we purchase an instrument at a *discount*
 - Which is later redeemed at *full face* value
- We need metrics to make informed decisions
- There are three key calculations used
 - *Discount Rate*
 - *Discount Price*
 - *Discount Dollar Amount*



Discount Rate

$$DR = \frac{\text{FaceAmount} - \text{PurchasePrice}}{\text{FaceAmount}} * \frac{360}{\text{DaysFromSettlementToMaturity}}$$

- Given
 - Face amount
 - Purchase price
 - Days from settlement to maturity



Discount Price

$$DP = 1 - \left(DR * \frac{\text{DaysFromSettlementToMaturity}}{360} \right)$$

- Given
 - Discount rate
 - Days from settlement to maturity



Discount Dollar Amount

$$DDA = \text{FaceAmount} * DR * \frac{\text{DaysFromSettlementToMaturity}}{360}$$

- Given
 - Face amount
 - Discount rate
 - Days from settlement to maturity

REVIEW

- Discussed Money Markets
- Participants, motivations, instruments
- Considered instruments
 - From both broad and specific characteristics
- Outlined some basic calculations

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Money Markets