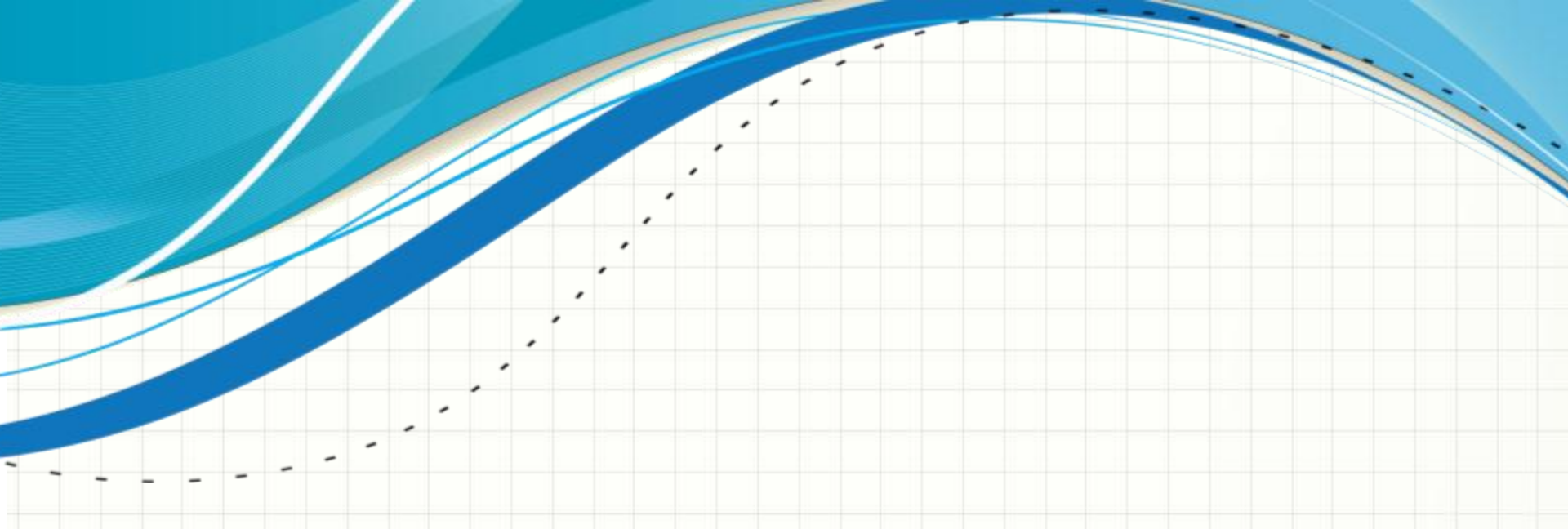




LECTURE 3

MONEY MARKETS

Lecture 3

- Chapter 11 of textbook by Frederic S. Mishkin and Stanley Eakins, Financial Markets and Institutions, Global Edition, 7th edition, Pearson

Key Terms

- Money Markets; Why do they exist?
- Money Markets Features
- Money Markets Functions
- Money Markets vs. Capital Markets
- Money Markets Participants
- Money Markets Instruments

Money Markets

- As money is a commodity, the Money Market (MM) is a component of financial markets for assets in short-term borrowing, lending, buying & selling with original maturities of one year or less
- Money (currency) is not actually traded in MM
- Securities in MM are short term with high liquidity; therefore, they are close to being money
- Trading in the MM is done over the counter & is wholesale (transactions in excess of 1 million).
- MM & Capital Markets (CM) are parts of financial markets. The instruments bear differing maturities, currencies, credit risks, and structure & can be used to distribute the exposure

Money Markets Features

- MM securities:
 - are usually sold in large denominations (£1,000,000 or more)
 - have low default risk
 - mature in one year or less from their issue date, although most mature in less than 120 days

Money Markets

- MM exist because:
 - they offer a distinct cost advantage over banks as banks are quite regulated
 - reserve requirements create additional expense for banks that money markets do not have
 - offer the opportunity to earn a higher interest rate

Money Markets

- MM provide:
 - investors a place for warehousing surplus funds for short periods of time
 - borrowers low-cost source of temporary funds
 - corporations and governments a low cost way to solve cash-timing problems (when timing of cash inflows and outflows are not well synchronized)

Money Markets Functions-Examples

- Financing Industry: MM contributes to the growth of industries by helping industries:
 - in securing short-term loans to meet working capital requirements
 - indirectly through its link with & influence on long-term CM. Industries generally need long-term loans, provided in CM. However, CM depend upon the conditions in MM. The short-term interest rates of MM influence the long-term interest rates in CM

Money Markets Functions-Examples

- **Commercial Banks Profitable Investment:**
 - MM enable commercial banks to use their excess reserves in profitable investment. The main objective of commercial banks is to earn income from its reserves & maintain liquidity to meet the uncertain cash demand of the depositors. In MM, the excess reserves of the commercial banks are invested in near-money assets which are highly liquid & can be easily converted into cash. Thus, the commercial banks earn profits without losing liquidity
- **Commercial Banks Self-Sufficiency:**
 - Developed MM help commercial banks to become self-sufficient. In the situation of emergency, when commercial banks have scarcity of funds, they need not approach the central bank and borrow at a higher interest rate. They can meet their requirements by recalling their old short-run loans from the MM

Money Markets Functions-Examples

- Help Central Bank:
 - the short-run interest rates of the MM serve as an indicator of the monetary and banking conditions in the country & can guide the central bank to adopt an appropriate banking policy
 - MM are sensitive and integrated & can help the central bank to secure quick & widespread influence on the sub-markets, and thus achieve effective implementation of its policy

Money Markets Functions

- In summary MM functions:
 - provide a quick and low cost source of temporary funds to firms, government and intermediaries
 - transfer of large sums of money
 - transfer from parties with surplus funds to parties with a deficit
 - allow governments to raise funds
 - help to implement monetary policy
 - determine short-term interest rates

Money Markets vs. Capital Markets

- Maturity period & purpose of funding:
 - MM deal in lending & borrowing of short-term finance (for one year or less) & provide working capital
 - CM deal in lending and borrowing of long-term finance (for more than one year), cater for long-term credit needs of industrialists & provide fixed capital to buy land, machinery, etc.
- Main role:
 - role of MM is that of liquidity adjustment
 - role of CM is that of putting capital to work, preferably to long-term, secure and productive employment

Money Markets vs. Capital Markets

- Credit Instruments :
 - in MM, the main credit instruments are treasury bills, fed funds, certificates of deposit, bank acceptances, etc. and are more homogeneous.
 - in CM are stocks, bonds etc. and are more heterogeneous
- Risk profile:
 - in MM risk is small. The risk is much greater in CM. Risk varies both in degree & nature throughout the CM
- Relation with Central Bank:
 - MM are closely and directly linked with central bank. CM feel central bank's influence, but mainly indirectly and through the MM

Money Market Participants

Participant	Role
U.S. Treasury Department	Sells U.S. Treasury securities to fund the national debt
Federal Reserve System	Buys and sells U.S. Treasury securities as its primary method of controlling the money supply
Commercial banks	Buy U.S. Treasury securities; sell certificates of deposit and make short-term loans; offer individual investors accounts that invest in money market securities
Businesses	Buy and sell various short-term securities as a regular part of their cash management
Investment companies (brokerage firms)	Trade on behalf of commercial accounts
Finance companies (commercial leasing companies)	Lend funds to individuals
Insurance companies (property and casualty insurance companies)	Maintain liquidity needed to meet unexpected demands
Pension funds	Maintain funds in money market instruments in readiness for investment in stocks and bonds
Individuals	Buy money market mutual funds
Money market mutual funds	Allow small investors to participate in the money market by aggregating their funds to invest in large-denomination money market securities

Money Market Instruments

- Treasury Bills
- Federal Funds
- Repurchase Agreements
- Negotiable Certificates of Deposit
- Commercial Paper
- Eurodollars
- Banker's Acceptances

Treasury Bill

- The treasury issues various debt securities to finance national debt. Most widely & liquid is the Treasury Bill (or T-Bills)
- They mature in one year or less. Like zero-coupon bonds, they do not pay interest prior to maturity; instead are sold at a discount of the par value to create a positive yield to maturity.

$$\text{Discount Yield}(\%) = \frac{\text{Face Value} - \text{Purchase Price}}{\text{Face Value}} \times \frac{360}{\text{Days Till Maturity}} \times 100[\%]$$

- Regular weekly T-Bills are commonly issued with maturity dates of 28 days , 91 days , 182 days , and 364 days
- Treasury bills are sold by single-price auctions held weekly

Treasury Bill-Example

- What is its discount rate? If you bought a 28-day T-bill for £996.37 and is worth £1,000 at maturity

$$i_{discount} = \frac{F - P}{F} \times \frac{360}{n}$$

$$i_{discount} = \frac{1,000 - 996.73}{1,000} \times \frac{360}{28} = 4.665\%$$

Fed Funds

- Federal funds in U.S. are overnight borrowings between banks & other entities to maintain their bank reserves at the Federal Reserve
- Banks keep reserves at Federal Reserve Banks to meet their reserve requirements & clear financial transactions. Transactions in the federal funds market enable depository institutions with reserve balances in excess of reserve requirements to lend reserves to institutions with reserve deficiencies.
- These loans are usually made for one day only, that is, "overnight". The interest rate at which these deals are done is called the federal funds rate

Fed Funds

- Federal funds are not collateralized; like Eurodollars, they are an unsecured interbank loan
- The Federal reserve cannot directly control fed funds. It does that indirectly by adjusting the level of reserves available to banks
- Fed can increase the amount of money by buying securities. When investors sell securities to the fed, their reserves are increased, so interest rates are lower
- When fed removes reserves by selling securities, fed funds rates increase

Repurchase Agreements, Repo

- Short-term loans; normally for less than two weeks and frequently for one day, arranged by selling securities to an investor with an agreement to repurchase them at a fixed price on a fixed date(usually 3–14 days later)
- The repurchase price should be greater than the original sale price, the difference effectively representing interest, called the repo rate
- The party that originally buys the securities effectively acts as a lender. The original seller is effectively acting as a borrower, using their security as collateral for a secured cash loan at a fixed rate of interest

Repurchase Agreements, Repo

- Repos work similar to the market for fed funds, but nonbanks can participate
- A repo is like a short term collateralized loan
- The federal reserve also uses repos in conducting monetary policy. Fed will buy or sell treasury securities in the repo market
- Repos are collateralized with treasury securities, low-risk investment and of low risk

Negotiable Certificates of Deposit

- Time deposit, commonly offered to consumers by banks and credit unions
- A bank-issued security that documents a deposit & specifies the interest rate & the maturity date (term security), not a demand security (that can be withdrawn anytime)
- It is also a bearer instrument (whoever hold it at maturity receives principal & interest)

Commercial Paper

- Unsecured promissory notes, issued by corporations, that mature in no more than 270 days
- The use of commercial paper increased significantly in the early 1980s because of the rising cost of bank loans

Banker's Acceptances

- An order to pay a specified amount to the bearer on a given date if specified conditions have been met, usually delivery of promised goods
- These are often used when buyers / sellers of expensive goods live in different countries
- Avoid the need to establish the credit-worthiness of a customer living abroad
- A bank intervenes by issuing a banker's acceptance where the bank substitutes its creditworthiness for that of the purchaser

Banker's Acceptances Advantages

- Exporter paid immediately
- Exporter shielded from foreign exchange risk
- Exporter does not have to assess the financial security of the importer
- Importer's bank guarantees payment
- Crucial to international trade

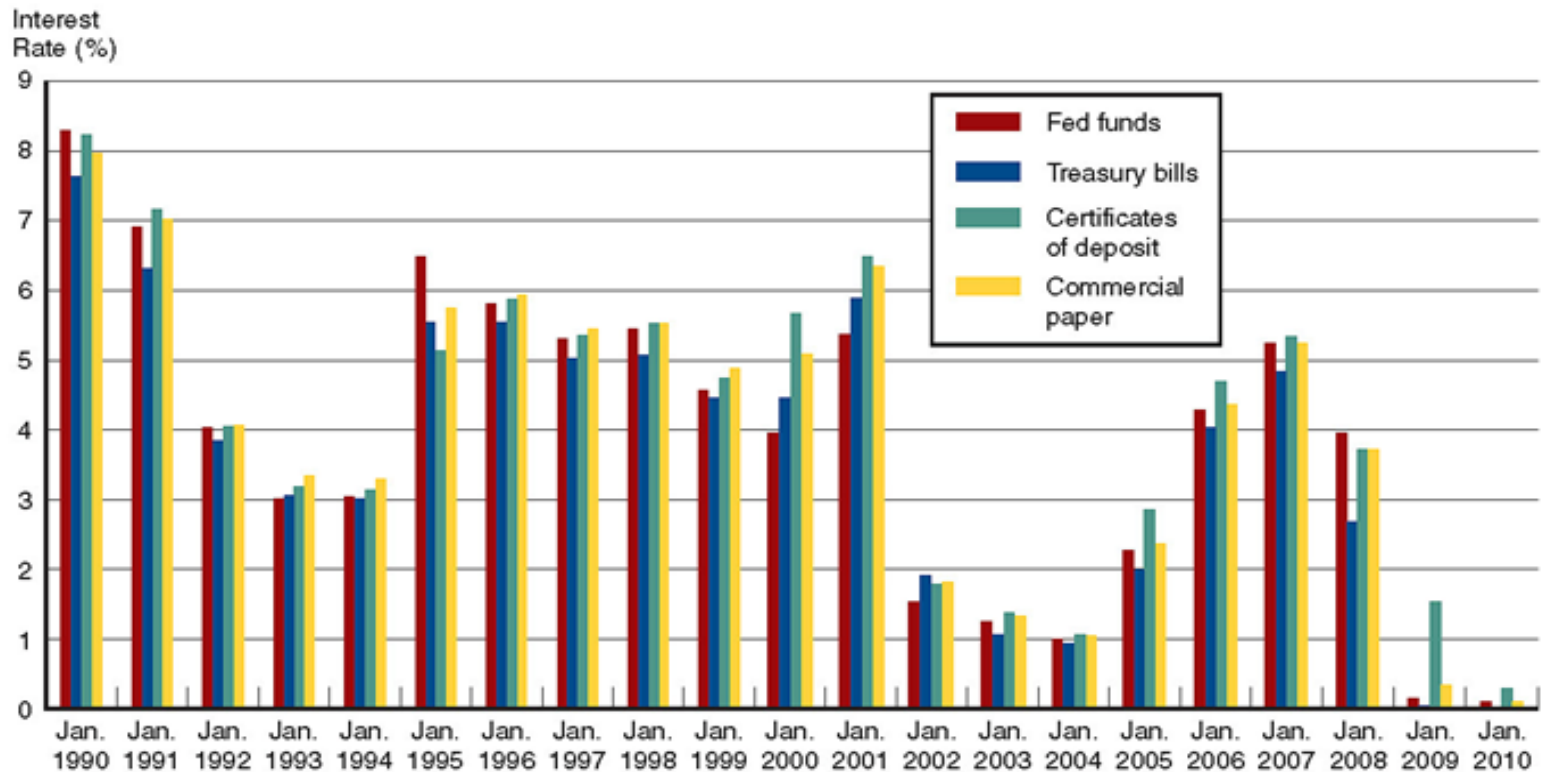
Eurodollars

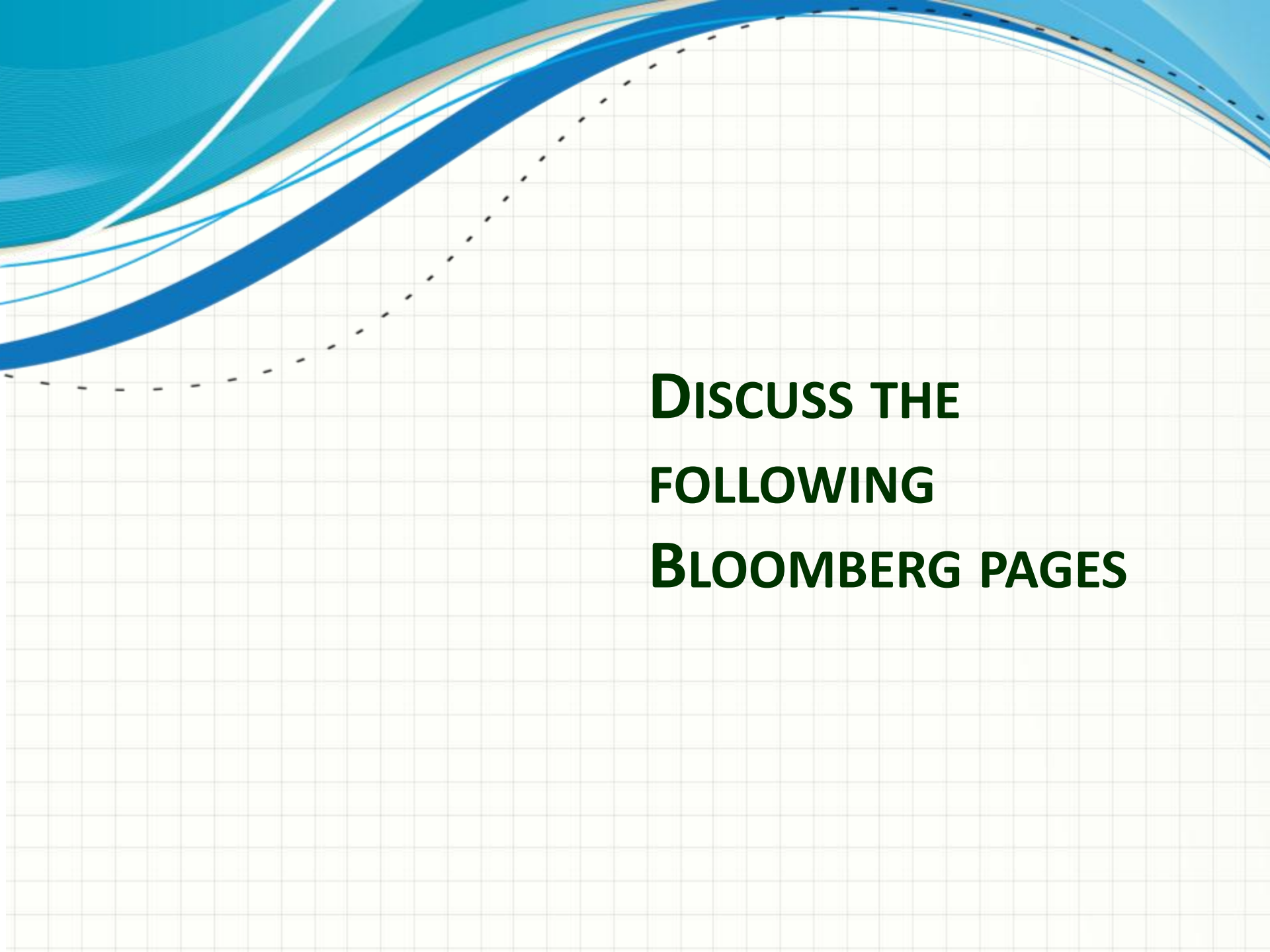
- Eurodollars represent Dollar denominated deposits held, outside the US, and thus are not under the jurisdiction of the Federal Reserve
- The market is essential since many foreign contracts call for payment in U.S. dollars due to the stability of the dollar, relative to other currencies

Eurodollar

- The Eurodollar market has continued to grow rapidly because depositors receive a higher rate of return on a dollar deposit in the Eurodollar market than in the domestic market

Comparison of Money Market Securities





**DISCUSS THE
FOLLOWING
BLOOMBERG PAGES**

97 Change Country			98 Feedback		12:33:50		Treasury & Money Markets: United Kingdom									
GBP Deposit Rate			LIBOR		Swaps			FRAs			1) T-Bill (DM)					
O/N	0.4100	0.5300	O/N	0.47000	1Y	0.65	0.68	1x4	0.5470	1M	0.375					
1w	0.4200	0.5400	1M	0.48781	1.5Y	0.72	0.76	2x5	0.5625	3M	0.405					
2w	0.2500	0.5000	2M	0.50125	2Y	0.83	0.85	3x6	0.5740	6M	0.405					
3w	0.4200	0.5400	3M	0.51688	3Y	1.11	1.12	4x7	0.5900	Gilts						
1M	0.4100	0.5100	6M	0.59375	4Y	1.42	1.44	5x8	0.6080	1Y	0.382	-0.009				
2M	0.4200	0.5200	12M	0.88125	5Y	1.71	1.72	6x9	0.6250	2Y	0.412	-0.013				
3M	0.4400	0.5300			6Y	1.96	1.97	9x12	0.6790	3Y	0.718	-0.028				
6M	0.6000	0.6100			7Y	2.18	2.19	1x7	0.6200	5Y	1.502	-0.046				
9M	0.6600	0.7600			8Y	2.36	2.38	2x8	0.6530	7Y	2.012	-0.040				
12M	0.8200	0.9100			9Y	2.52	2.53	3x9	0.6800	8Y	2.229	-0.037				
Spot FOREX		Bank Rate				10Y			2.65	2.66	6x12	0.7425	10Y	2.662	-0.034	
GBP	1.5960	0.500				Crude Oil				12x18	0.8980	20Y	3.227	-0.019		
EUR	1.3514					IPE			109.98	12x24	1.1850	30Y	3.486	-0.026		
€/GBP	0.8467	Commodities			Futures						Stock Indices					
£/CHF	1.4534	Gold	1311.77	-7.55	0LA	99.42	-0.01				FTSE100				6366.75	+0.92
£/JPY	155.2270	Silver	22.15	-0.16	G A	110.87	+0.42				FTSE350				3453.36	+0.23
		Brent	109.91	-0.41												
30 Economic Releases (ECO)																
Date	Time	C	A	M	Event	Period	Survey	Actual	Prior	Revised						
31) 10/09	00:01	UK			BRC Shop Price Index YoY	Sep	--	-0.2%	-0.5%	--						
32) 10/09	09:30	UK			Industrial Production MoM	Aug	0.4%	-1.1%	0.0%	0.1%						
33) 10/09	09:30	UK			Industrial Production YoY	Aug	-0.7%	-1.5%	-1.6%	-1.1%						
34) 10/09	09:30	UK			Manufacturing Production MoM	Aug	0.4%	-1.2%	0.2%	--						
Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000																
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2013 Bloomberg Finance L.P.																
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97) Change Country		98) Feedback		12:34:33		Treasury & Money Markets: United States									
1) FED Funds(FOMC)		12:27		US T-Bill				EURO\$DEP				Reverse		REPO	
BID/ASK 0.0900 0.1100				4W 0.25 -0.01 0.25 0.25				3M 0.1800 0.2800				O/N 0.12		0.07	
LST/OPEN 0.1000 0.1000				3M 0.04 -0.01 0.05 0.04				6M 0.2200 0.4200				1W 0.15		0.07	
HIGH/LOW 0.1000 0.0900				6M 0.07 -0.01 0.08 0.07				1Y 0.3600 0.5600				2W 0.17		0.10	
				1Y 0.13 -0.01 0.13 0.13								1M 0.20		0.13	
Dow Jones				S&P 500 Future				NASDAQ Composite Index				CRB Commodity Index			
DJIA 14776.53 -159.71				SPX Future 1656.30 +5.90				CCMP 3694.83 -75.54				CRB 288.00 +0.66			
2) US Bonds (BBT)								Comm Paper		90D EUR\$ FUT		Funds Future		3) LIBOR Fix	
6) T 0 3/4 09/30/15 0.369		99-24 3/4 99-24+ +00		15D 0.120		DEC 99.6850		OCT 99.893		1W 0.13930					
7) T 0 5/8 10/15/16 0.686		99-26 99-26 3/4 +01		30D 0.140		MAR 99.6400		NOV 99.885		1M 0.17725					
8) T 1 3/8 09/30/18 1.398		99-28 3/4 99-28+ +03		60D 0.170		JUN 99.5950		DEC 99.890		2M 0.21725					
9) T 2 09/30/20 2.022		99-27 99-27+ +03		90D 0.190		SEP 99.5450		JAN 99.890		3M 0.24560					
10) T 2 3/2 08/15/23 2.627		98-28 3/4 98-28 3/4 +01		120D 0.220		DEC 99.4700		FEB 99.885		6M 0.36865					
11) T 3 5/8 08/15/43 3.698		98-21 98-22 -04+		180D 0.310		MAR 99.3650		MAR 99.880		1Y 0.63110					
4) Spot FOREX (FXC)		Key Rates		Swaps		10Y Note Future				5) 30Y MBS (BBTM)					
JPY 97.2620		Prime 3.25		3Y 0.7820		CBT 126-12 +03+				GNMA 3. 102-14 102-15 +00					
EUR 1.3514		BLR 2.00		5Y 1.5410		Commodities				GOLD 3.5 101-01 101-02 +00					
GBP 1.5958		FDTR 0.25		10Y 2.7625		NYM WTI 103.39 -0.10				FNMA 3.5 101-10 101-11 +00					
CHF 0.9106		Discount 0.75		30Y 3.6535		GOLD 1311.56 -7.76									
CAD 1.0377															
30) Economic Releases (ECO)															
Date	Time	C	A M	Event	Period	Survey	Actual	Prior	Revised						
31) 10/09	12:00	US		MBA Mortgage Applications	Oct 4	-	1.3%	-0.4%	--						
32) 10/09	19:00	US		Fed Releases Minutes from Sept 17-18 FOMC Meeting											
33) 10/09		US		Gov. Releases Delayed: Click for Oct. 7-11 Shutdown Schedule											
34) 10/10	13:30	US		Initial Jobless Claims	Oct 5	310K	--	308K	--						
Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000															
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2013 Bloomberg Finance L.P.															
SN 170878 BST GMT+1:00 H437-2217-0 09-Oct-2013 12:34:33															