

MUNI
ECON

Money Markets

Money Markets

...to facilitate the transfer of short-term funds from individuals, corporation and governments

...to maintain liquidity

93 <G0> to Save United States of America as Default View

United States of America Treasury & Money Markets

Fed Funds FOMC »		Fed O/N Repo		US T-Bill		USD Deposit Rates		Rev Repo (Bid/Ask)	
FDFD	0.0700 0.0900	SOFR	0.05	4W	-0.02 -0.02 0.06 -0.02	O/N	0.0700 0.1700	O/N	0.05 0.04
OBFR01	0.07	TGCR	0.05	2M	0.19 -0.01 0.24 0.19	1W	0.0600 0.3300	1W	0.06 0.04
Commercial Paper		BGCR	0.05	3M	0.34 -0.05 0.46 0.33	2W	0.0200 0.1400	2W	0.09 0.04
30D	0.120	AFX O/N Rate		6M	0.74 -0.02 0.78 0.73	1M	0.1400 0.1700	1M	0.06 0.04
90D	0.430	AMERIBOR	0.11	1Y	1.04 1.11 1.01				
Dow Jones		S&P 500 E-Mini Future		NASDAQ Composite Index		CRB Commodity Index			
DJIA	34566.17 -171.89	SPX Fut	4414.50 +20.50	CCMP	13790.92 -0.23	CRB	265.43 +2.34		
US Bonds FIT »		90D EUR\$ FUT		SOFR FUT		LIBOR		BSBY Fix SOFR Fix	
T 0 7/8 01/31/24	1.600	98-19 3/4	98-19+ -01+	MAR	99.2875	SFR1	99.943	1M	0.19 0.09 0.05
T 1 1/2 02/15/25	1.826	99-01+	99-01 3/4 -02+	JUN	98.7100	SFR2	99.403	3M	0.51
T 1 1/2 01/31/27	1.947	97-28+	97-28 3/4 -05 1/4	SEP	98.3000	SFR3	98.865	6M	0.84 1M 0.11 0.09
T 1 3/4 01/31/29	2.026	98-06+	98-07 -07+	DEC	97.9950	SFR4	98.485		
T 1 7/8 02/15/32	2.024	98-20+	98-21 -10+	MAR	97.8200	SFR5	98.240	3M	0.39 0.38
T 2 11/15/41	2.383	93-30	94-00 -16	JUN	97.6800	SFR6	98.030	6M	0.67 0.69
T 2 1/4 02/15/52	2.317	98-15+	98-17+ -21+					1Y	1.07 1.10
Spot FX FXC »		Key Rates		SOFR OIS Swaps		10Y Note Future		Funds Future	
JPY	115.5600	Prime	3.25	3Y	1.7283	CBT	125-26+ -05	FEB	99.913
EUR	1.1340	BLR	2.00	5Y	1.7876	Commodities		30Y MBS BBTM »	
GBP	1.3557	FDTR	0.25	10Y	1.8465	NYM WTI	93.95 -1.51	FNCL 2.5	97-23+ 97-25 + 00
CAD	1.2723	Discount	0.25	30Y	1.8400	GOLD	1869.21 -1.97	G2SF 2.5	99-04+ 99-05+ + 00
								Current Coupon	2.961

Economic Releases ECO »		Date	Time	C	A	M	R	Event	Period	Surv(M)	Actual	Prior	Revised
1)	02/15	16:30	US					PPI Final Demand MoM	Jan	0.5%	--	0.2%	--
2)	02/15	16:30	US					PPI Ex Food and Energy MoM	Jan	0.5%	--	0.5%	--
3)	02/15	16:30	US					PPI Ex Food, Energy, Trade MoM	Jan	0.4%	--	0.4%	--
4)	02/15	16:30	US					PPI Final Demand YoY	Jan	9.1%	--	9.7%	--
5)	02/15	16:30	US					PPI Ex Food and Energy YoY	Jan	7.9%	--	8.3%	--
6)	02/15	16:30	US					PPI Ex Food, Energy, Trade YoY	Jan	6.3%	--	6.9%	--
7)	02/15	16:30	US					Empire Manufacturing	Feb	12.0	--	-0.7	--
8)	02/16	00:00	US					Net Long-term TIC Flows	Dec	--	--	\$137.4b	--
9)	02/16	00:00	US					Total Net TIC Flows	Dec	--	--	\$223.9b	--
10)	02/16	15:00	US					MBA Mortgage Applications	Feb 11	--	--	-8.1%	--
11)	02/16	16:30	US					Retail Sales Advance MoM	Jan	2.0%	--	-1.9%	--
12)	02/16	16:30	US					Retail Sales Ex Auto MoM	Jan	0.9%	--	-2.3%	--
13)	02/16	16:30	US					Retail Sales Ex Auto and Gas	Jan	1.0%	--	-2.5%	--
14)	02/16	16:30	US					Retail Sales Control Group	Jan	1.4%	--	-3.1%	--

93 <GO> to Save Russia as Default View

Russia | Browse 15:04:45 | Treasury & Money Markets

Bank Rates	MICEX T-Bills	Ruonia Swaps	OFZ Issues	MICEX ZeroCpn	IR Swaps
Key Rate 20.00 3M	13.774	1W 19.36 19.46	7.60 21	1Y 13.454 -2.856	1Y 30.799 31.042
RUONIA Rate 10.00 6M	13.690	2W 8.70 8.86	7.00 23	2Y 13.090 -2.566	2Y 25.407 25.704
	1Y 13.454	1M 22.90 23.10	7.00 23	3Y 13.109 -2.228	3Y 21.397 21.703
	MOSPRIME	2M 22.90 23.10		5Y 13.197 -1.764	4Y 19.541 19.858
Interbank O/N	20.880	3M 23.90 24.10		10Y 12.516 -0.640	5Y 18.091 18.409
O/N 9.81 9.81	1W 21.380	6M 25.92 26.08			10Y 15.300 15.601
1W 23.50 27.50	2W 21.630	9M 25.92 26.08		World Govts	CDS
1M 10.46 10.46	1M 22.650			US 2Y 1.291 -0.141	1Y 4416.615624.93
2M 33.50 34.50	2M 23.500	Russia & Bonds		US 5Y 1.584 -0.132	2Y 2552.713140.87
3M 11.66 11.66	3M 24.050	Commodities	RF23 67.43 58.47	US 10Y 1.729 -0.095	3Y 1860.1-2240.74
6M 12.31 12.31	6M 24.630	Gold 1922.60 +0.71%	RF30 170.79 99.28	GE 10Y -0.02 -0.160	4Y 1535.91799.89
1Y 31.50 32.50	ENBI Index	Plat 1059.76 +1.16%	RF42 17.20 13.75	UK 10Y 1.248 -0.162	5Y 537.68 570.31
USDRUB Fwds Sp		CFD 1 -7.50 -22.68%	Brent 102.62 +4.75%	PL 10Y 4.026 -0.072	10Y 702.30 858.98
RUE100.375 102.921	EURRUB Fwds				
1W 99.650 99.809	Implied Yield	€/RUB 111.525 115.042	Spot FOREX	Equity Indices	
1M 99.619 99.955	1M 31.19 31.63	1M 114.303 114.368	\$/RUB 101.644 -3.46%	MOCX 2470.48 +20.04%	
2M 104.726 104.825	2M 31.65 32.19	2M 118.587 121.515	JPY/RUB 88.551 +22.13%	RTSI\$ 936.94 +26.12%	
3M 104.916 105.012	3M 31.80 31.40	3M	GBP/RUB 132.931 -7.09%	HKong 22761.71 +0.21%	
6M 112.140 113.000	6M 30.52 31.66	6M 130.333 133.446	CHF/RUB 110.821 -3.50%	ESTX 3808.52 -2.95%	
1Y 128.694 129.253	1Y 30.42 30.20	1Y 147.531 151.051	CNY/RUB 15.717 -10.95%	FTSE 7364.36 -1.26%	
			Basket 107.016 +21.38%	Dow 33892.60 -0.49%	

Economic Releases | EOD >

Date	Time	C	A	M	R	Event	Period	Surv(M)	Actual	Prior	Revised
03/01	09:00	RU				Markit Russia PMI Mfg	Feb	--	48.6	51.8	--
03/02	19:00	RU				Retail Sales Real YoY	Jan	3.9%	--	5.4%	--
03/02	19:00	RU				Cargo Shipments YoY	Jan	--	--	2.8%	--
03/02	19:00	RU				Unemployment Rate	Jan	4.2%	--	4.3%	--
03/02	19:00	RU				Real Wages YoY	Dec	2.3%	--	3.4%	--
03/02	19:00	RU				Construction YoY	Jan	3.4%	--	8.4%	--
03/02	19:00	RU				CPI MoM	Feb 25	--	--	0.24%	--
03/02	19:00	RU				CPI Weekly YTD	Feb 25	--	--	1.54%	--
03/02	03:09	RU				Wellbeing Fund	Feb	--	--	\$174.9b	--
03/03	09:00	RU				Markit Russia PMI Services	Feb	--	--	49.8	--
03/03	09:00	RU				Markit Russia PMI Composite	Feb	--	--	50.3	--
03/03	16:00	RU				Gold and Forex Reserve	Feb 25	--	--	643.2b	--
03/04	11:00	RU				Money Supply Narrow Def	Feb 25	--	--	14.50t	--
03/04		RU				Light Vehicle Car Sales YoY	Feb	--	--	-3.7%	--
03/09	16:00	RU				Official Reserve Assets	Feb	625.0b	--	630.2b	--

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
 Japan 81 3 4565 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2022 Bloomberg Finance L.P.
 SN 757294 TRT GMT+3:00 G637-8036-173 01-Mar-2022 15:04:45

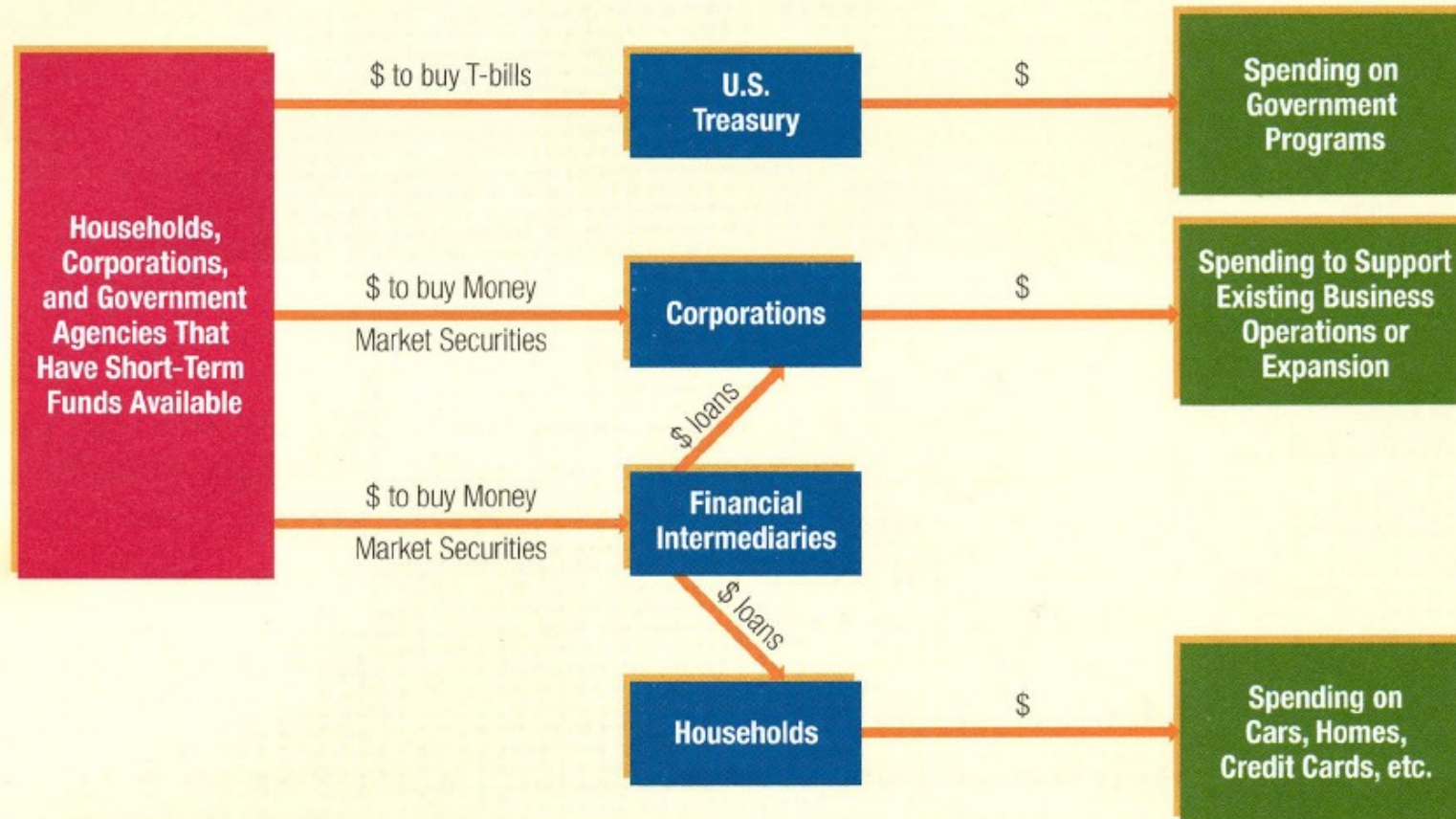
Money Markets Securities

...debt securities with maturity of one year or less

...issued in primary market to obtain short term financing

...liquidity provides by secondary market

commonly purchase by households (indirectly), corporations and government agencies



■ Source: Madura, J.: *Financial Markets and Institutions*, 9th Edition

Money Market Securities

T-Bills - government

Commercial paper - companies

Negotiable certificates of deposit - banks

Repurchase agreements- banks

Federal funds

Banker's acceptance – banks (use companies)

Treasury Bills (T-Bills)

- Issued to meet the short-term needs of government
- 4-week, 13-week, 26-week maturities on a weekly basis
- Periodically issued T-Bills
 - Cash management bills
- The par value (face value) was historically a minimum of \$10,000, but now \$1,000 and its multiples
- No pay any interest issue with discount from par value
 - Gain difference between par value and money paid
- Backed by federal government
- **Low default (credit) risk**
- **High level of liquidity**
- Secondary market and government security dealers

Fed Funds FOMC »			Fed O/N Repo			US T-Bill			USD Deposit Rates			Rev Repo (Bid/Ask)						
DFD	0.0800	0.1000	SOFR	0.01		4W	0.00	+0.00	0.02	0.00	O/N	0.0600	0.2100	O/N	0.05	0.02		
OBFR01		0.07	TGCR	0.01		2M	0.01	-0.01	0.03	0.01	1W	0.0600	0.0800	1W	0.06	0.04		
Commercial Paper			BGCR			3M			2W			2W						
30D		0.090	AFX O/N Rate			6M	0.04	-0.01	0.06	0.04	1M	0.1900	0.2900	1M	0.09	0.05		
90D		0.140	AMERIBOR	0.09		1Y	0.06	+0.00	0.08	0.06								
Dow Jones			S&P 500 E-Mini Future			NASDAQ Composite Index			CRB Commodity Index									
DJIA	32953.46	+174.82	SPX Fut	3957.50	-0.75	CCMP	13459.71	+139.84				CRB	193.42	-0.37				
US Bonds FIT »						SOFR Future			90D EUR\$ FUT			Funds Future			LIBOR Fix			
T 0 ¹ / ₈	02/28/23	0.155	99-30	99-30 ¹ / ₈	-00 ¹ / ₄	SFR1	99.948		JUN	99.8250		MAR	99.930		O/N	0.07813		
T 0 ¹ / ₄	03/15/24	0.339	99-23 ¹ / ₄	99-23+	-00+	SFR2	99.963		SEP	99.8050		APR	99.930		1W	0.08438		
T 0 ¹ / ₂	02/28/26	0.829	98-12 ³ / ₄	98-13	-00 ¹ / ₄	SFR3	99.940		DEC	99.7500		MAY	99.925		1M	0.10613		
T 1 ¹ / ₈	02/29/28	1.269	99-01	99-01+	+00+	SFR4	99.930		MAR	99.7850		JUN	99.925		2M	0.13675		
T 1 ¹ / ₈	02/15/31	1.602	95-20	95-20+	+01	SFR5	99.920		JUN	99.7400		JUL	99.920		3M	0.18950		
T 1 ⁷ / ₈	02/15/41	2.263	93-24+	93-26	+00	SFR6	99.915		SEP	99.6750		AUG	99.920		6M	0.19400		
T 1 ⁷ / ₈	02/15/51	2.352	89-24	89-25+	+03+										1Y	0.27813		
Spot FX FXC »			Key Rates			Swaps			10Y Note Future			BSBY Fix						
JPY	109.2000		Prime	3.25		3Y	0.4390		CBT	131-30+	+00							
EUR	1.1925		BLR	2.00		5Y	0.9135		Commodities			30Y MBS BBTM »						
GBP	1.3814		FDTR	0.25		10Y	1.6135		NYM WTI	64.67	-0.72	FNCL 2.5	102-30	102-31	+00			
CAD	1.2482		Discount	0.25		30Y	2.0499		GOLD	1731.75	+0.08	G2SF 2.5	103-09	103-10+	+00			
												Current Coupon			1.971			

Economic Releases | ECO »

	Date	Time	C	A	M	R	Event	Period	Surv(M)	Actual	Prior	Revised
1)	03/16	15:30	US	🔔	📊	📈	Import Price Index MoM	Feb	1.0%	--	1.4%	--
2)	03/16	15:30	US	🔔	📊	📈	Import Price Index ex Petroleum MoM	Feb	0.4%	--	0.9%	--

B 0 09/16/21

↓ 0.0375

-.0094

0.0550 / 0.0375

0.056 / 0.038

At 12:31

-- x --

Source BGN

B 0 09/16/21 Govt

Settings ▾

Actions ▾

Page 1/11

Security Description: Bond

95 Buy

96 Sell

25) Bond Description

26) Issuer Description

Pages	Issuer Information	Identifiers
11) Bond Info	Name TREASURY BILL	ID Number 912796F46
12) Addtl Info	Industry Treasury (BCLASS)	CUSIP 912796F46
13) Covenants	Security Information	ISIN US912796F469
14) Guarantors	Issue Date 03/18/2021	SEDOL 1 BM8TGH1
15) Bond Ratings	Interest Accrues	FIGI BBG00ZMG8FG3
16) Identifiers	1st Coupon Date	Issuance & Trading
17) Exchanges	Maturity Date 09/16/2021	Disc @ Issue .055000
18) Inv Parties	Floater Formula N.A.	Risk Factor .498
19) Fees, Restrict	Workout Date	Amount Issued 58673 (MM)
20) Schedules	Security Type USD	Amount Outstanding 58673 (MM)
21) Coupons	Cpn Frequency Type ZERO	Minimum Piece 100
Quick Links	Mty/Refund Type NORMAL Series	Minimum Increment 100
32) ALLQ Pricing	Calc Type DISCOUNT	SOMA Holdings N.A.
33) QRD Quote Recap	Day Count ACT/360	
34) CACS Corp Action	Market Sector US GOVT	
35) CN Sec News	Country US Currency USD	
36) HDS Holders	TENDERS ACCEPTED: \$54001MM.	
66) Send Bond		

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
 Japan 81 3 4565 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2021 Bloomberg Finance L.P.

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Why are the bid prices of T-bills higher than the ask prices? Aren't bids supposed to be lower than ask prices?

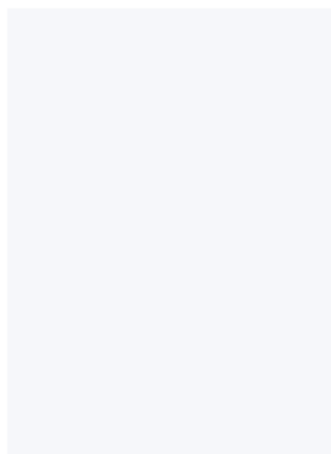
By Investopedia Staff

f SH

A: Yes, you are correct that the [ask price](#) of a security should typically be higher than the [bid price](#). This is because people will not sell a security (asking price) for lower than the price they are willing to pay for it (bidding price). So, because there is more than one method of quoting the bid and ask prices of [T-bills](#), the quoted ask price may simply be perceived as being lower than the bid.

For example, one common quote that you may see for a 365-day T-bill is July 12th, bid 5.35%, ask 5.25%. At first glance, the bid seems higher than the ask, but upon further inspection, you can see that the ask is actually higher. The reason is that a T-bill is a [discount bond](#) and these percentages are the quoted [yields](#), not the actual prices. So, if we convert the bid and ask discount yields into the dollar amounts of the prices, we get a bid of \$94.65 and an ask of \$94.75. Therefore, the bid is actually lower than the ask. Sometimes the quotes on T-bills show the actual prices, in which case you don't have to convert or calculate anything. The same T-bill above, therefore, may be quoted with a bid of 94.65 and an ask of 94.75.

So, as the dollar amount of the bid should be lower than the ask, the bid's quoted yield percentage should be higher than the ask's quoted yield percentage - the two different kinds of quotes are just different ways of saying the same thing.



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HOT DEFINITIONS

Proxy

Treasury Bills (T-Bills)

Investors in T-Bills

Financial institutions

Retain portfolio

Liquidity

Individuals (indirectly)

Liquidity

Money market funds/ ETFs funds

Corporation

Liquidity

SPY US \$ C 274.43 -3.47 T274.60 / 274.61Z 19x1
 On 27 Feb d Vol 99,099,165 0 278.11Z H 278.92J L 274.36Y Val 27.344B

SPY US Equity Report Page 4/5 Security Description: ETF

1) Profile 2) Performance 3) Holdings 4) Allocations 5) Organizational

Allocations as of 02/27/18

Top Industry Group Allocation	
Internet	8.62%
Banks	8.24%
Software	6.09%
Pharmaceuticals	6.00%
Computers	5.81%
Retail	5.10%
Oil&Gas	4.49%
Insurance	4.28%
Semiconductors	4.13%
Diversified Finan Serv	3.83%

Top Geographic Allocation	
U.S.	97.71%
Ireland	.98%
U.K.	.57%
Switzerland	.47%
Bermuda	.09%

Top Asset Allocation	
Equity	99.82%
Cash and Other	.18%


6) Hlds Anlys | PORT » 02/27/18

Top 10 Hldings % Port	20.64
Median Mkt Cap	USD 105.11B
Avg Wtd Mkt Cap	USD 213.07B
Avg Div Yield	1.86
Average P/B	3.42
Average P/E	24.82
Average P/S	2.27
Average P/C	14.58

7) Shares Outstanding | GP »



HOLDTOT 7119.6 As of 01/31/21 Billions
 US Treasury Major Foreign Holders Total US Treasury

 United States of America Sovereign Debt Ownership

Major Holders Foreign Holders Total US Debt Reported Holders Fed Holdings

For Further Holder Details | AGGD »

Debt Holder	USD Amount Held (Billions)	% Out	Latest Change	% Change
VANGUARD GROUP INCORPORATED	595.044	2.43	69.384	13.20
FIDELITY MANAGEMENT & RESEARCH	441.977	1.80	27.920	6.74
GOLDMAN SACHS ASSET MANAGEMENT	209.840	.86	44.040	26.56
BLACKROCK ADVISORS LLC	197.108	.80	65.065	49.28
JP MORGAN INVESTMENT MGMT	154.130	.63	23.248	17.76
BLACKROCK FUND ADVISORS	152.822	.62	-.032	-.02
GOVMT PENSION INVST FUND JAPAN	131.053	.53	.000	.00
MORGAN STANLEY INVESTMENTS LP	124.516	.51	30.012	31.76
FEDERATED INVESTORS	110.394	.45	27.966	33.93
WELLS FARGO BANK	98.153	.40	24.712	33.65
CAPITAL RESEARCH AND MANAGEMENT	78.875	.32	22.685	40.37
VANGUARD GROUP INC	74.831	.31	1.521	2.07
CHARLES SCHWAB INVESTMENT MGMT	66.128	.27	5.821	9.65
PACIFIC INVESTMENT MANAGEMENT CO	57.913	.24	4.543	8.51
BNY MELLON INVESTMENT ADVISER	56.445	.23	21.234	60.30
US BANCORP ASSET MANAGEMENT INC	52.977	.22	14.049	36.09
GOLDMAN SACHS ASSET MGMT GL SVC	49.493	.20	10.726	27.67
NORTHERN TRUST COMPANY	44.735	.18	21.250	90.48
BLACKROCK ASSET MGMT IRELAND	42.295	.17	.389	.93
METROPOLITAN WEST ASSET MGMT	36.177	.15	-2.961	-7.57
NIKKO GLOBAL UMBRELLA FUNDS	32.298	.13	-1.150	-3.44
CALIFORNIA PUBLIC EMP - CALPERS	32.104	.13	.000	.00
T ROWE PRICE ASSOCIATES INC	32.038	.13	5.791	22.06

Treasury Bills (T-Bills)

Pricing T-Bills

- Not pay interest
- Priced at discount from their par value
- Price that investor will pay depends on investor's required rate of return
- Price = present value of the future cash flows to be received
 - Present value of par value (face value)

Pricing T-Bills

$$Y_T = \frac{SP - PP}{PP} \times \frac{365}{n}$$

$$\text{T-bill discount} = \frac{\text{Par} - PP}{\text{Par}} \times \frac{360}{n}$$

where

SP = selling price

PP = purchase price

n = number of days of the investment (holding period)

EXAMPLE

An investor purchases a T-bill with a six-month (182-day) maturity and \$10,000 par \$9,600. If this T-bill is held to maturity, its yield is

$$Y_T = \frac{\$10,000 - \$9,600}{\$9,600} \times \frac{365}{182} = 8.36\%$$

Treasury Bills (T-Bills)

Estimating the Yield

Difference between the selling price and the purchase price

Estimating the T-bills discount

The percent discount of the purchase price from par value

For a newly issued T-Bills that will be held till maturity

T-Bill yield > T-Bill discount

Examples:

- A newly issued T-bill with a \$10,000 par value sells for \$9,750, and has a 90-day maturity. What is the discount?
- Jarrod King, a private investor, purchases a Treasury bill with a \$10,000 par value for \$9,645. One hundred days later, Jarrod sells the T-bill for \$9,719. What is Jarrod's expected annualized yield from this transaction?

Treasury Bills (T-Bills)

Treasury Bill Auctions

The primary market with T-Bills is organized as an auction

Competitively or noncompetitively (max. \$5 million per auction)

Individuals online bids www.treasurydirect.gov

<http://www.treasurydirect.gov/instit/marketable/tbills/tbills.htm>

Financial institutions online by Treasury Automated Auction

Processing System TAAOS

Noncompetitive Bidding

- Treasury bill auction (up to \$5 million limit)
- May be used to make sure bid is accepted
- Price is the weighted average of the accepted competitive bids
- Investors do not know the price in advance so they submit check for full par value
- After the auction, investor receives check from the Treasury covering the difference between par and the actual price

Competitive Bidding

- Treasury bill auction (fill bids in amount determined by Treasury borrowing needs)
- Bid process used to sell T-bills
- Bids submitted to Federal Reserve banks by the deadline
- Bid process
- Accepts highest bids
- Accepts bids until Treasury needs money

Commercial paper

- Short-term debt instrument
 - 20 and 45 days
 - 1 day or 270 days (SEC, otherwise registered)
- Alternative to bank loan
- Used only by well-known and creditworthy firms, rating is important
- Unsecured
- Minimum denominations of \$100,000
- Typical denomination are in multiples of \$1 million
- Liquidity vary

Commercial paper

Placement

- Directly
- Dealers

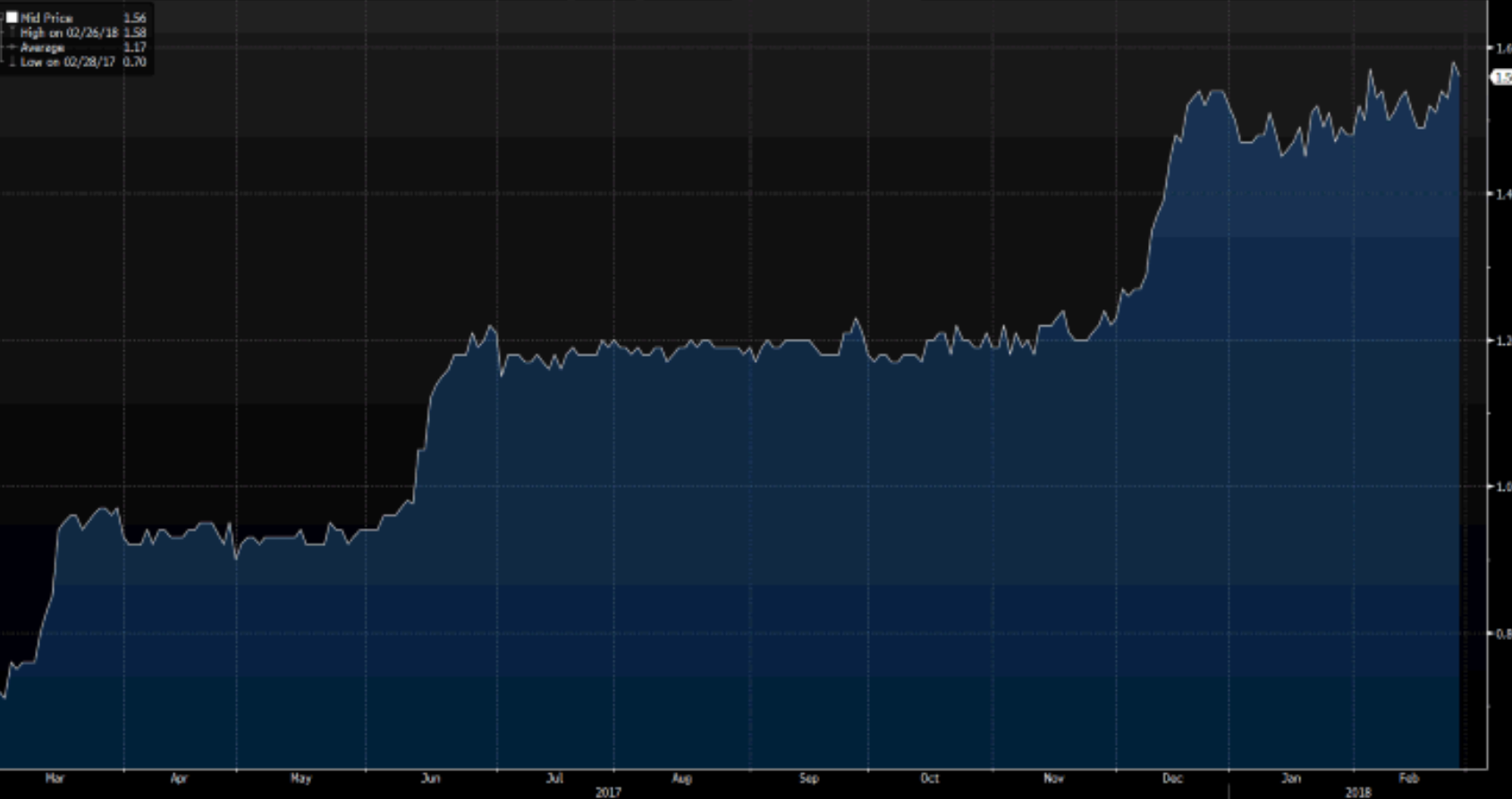
Commercial paper

- Estimating of Yield
 - Do not pay interest
 - Priced at a discount
- Yield slightly higher than the yield on T-Bills with same maturity
 - Credit risk
 - Less liquid
- The nominal return
 - Difference between the price paid and the par value

DCPB015D **1.56** -.02 0.00 / 0.00
 At 2/27 Op 1.56 Hi 1.56 Lo 1.56 Prev 1.58 Vol 0

DCPB015D Index **95 Compare** **96 Actions** **97 Edit** Line Chart

02/28/2017 - 02/28/2018 Mid Line USD Mov Avgs Key Events
 1D 3D 1M 6M YTD **1Y** 5Y Max Daily Table << Chart Content



Australia 61 2 9777 8600 Brazil 5511 2395 9000 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 2018 Bloomberg Finance L.P.
 SN 163608 CET GMT+1:00 H221-5626-0 28-Feb-2018 09:48:21

Example:

A firm plans to issue 30-day commercial paper for \$9,900,000. Par value is \$10,000,000. What is the firm's cost of borrowing?

Rating

- Credit or default risk
- Credit risk refers to the risk that a borrower may not repay a loan and that the lender may lose the principal of the loan or the interest associated with it.
- Indicator of a the potential risk of default
- Money market funds – top or second tire (5 % of assets) rating
- Junk commercial papers low or no rating

Rating grades

Fitch	S&P	Moody's	Rating grade description (Moody's)	
AAA	AAA	Aaa	Investment grade	Minimal credit risk
AA+	AA+	Aa1		Very low credit risk
AA	AA	Aa2		
AA-	AA-	Aa3		Low credit risk
A+	A+	A1		
A	A	A2		
A-	A-	A3		
BBB+	BBB+	Baa1	Moderate credit risk	
BBB	BBB	Baa2		
BBB-	BBB-	Baa3		
BB+	BB+	Ba1	Speculative grade	Substantial credit risk
BB	BB	Ba2		
BB-	BB-	Ba3		
B+	B+	B1		High credit risk
B	B	B2		
B-	B-	B3		
CCC+	CCC+	Caa1		Very high credit risk
CCC	CCC	Caa2		
CCC-	CCC-	Caa3		
CC	CC	Ca		In or near default, with possibility of recovery
C	C			
DDD	SD	C		
DD	D		In default, with little chance of recovery	
D				

Getting Started with the Bloomberg > Ratings Definitions

Q Search RATD Content

1) What Is RATD?

2) Rating Scale Comparisons

3) Agencies A-D

4) Agencies E-K

5) Agencies L-P

6) Agencies Q-Z

1) Market Examples

Rating	Indicates
AAA	Highest rating assigned by S&P. The obligor's capacity to meet its financial commitment on the obligation is EXTREMELY STRONG.
AA+	Differs from the highest rated obligations only in small degree. The obligor's capacity to meet its financial commitment on the obligation is VERY STRONG.
AA	
AA-	
A+	Somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still STRONG.
A	
A-	
BBB+	ADEQUATE protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.
BBB	
BBB-	
BB+	LESS VULNERABLE to nonpayment than other speculative issues. However, it faces major ongoing uncertainties or exposure to adverse business, financial, or economic conditions which could lead to the obligor's inadequate capacity to meet its financial commitment on the obligation.
BB	
BB-	
B+	MORE VULNERABLE to nonpayment than obligations rated 'BB', but the obligor currently has the capacity to meet its financial commitment on the obligation
R	

Getting Started with the Bloomberg > Ratings Definitions

Q Search RATD Content

- 1) What Is RATD?
- 2) Rating Scale Comparisons
- 3) Agencies A-D
- 4) Agencies E-K
- 5) Agencies L-P
- 6) Agencies Q-Z
- 7) Market Examples

	Underlying issues, these are outweighed by large uncertainties or major risk exposures to adverse conditions.
B+	Predominantly speculative with respect to the issuer's capacity to pay preferred stock obligations. 'BB' indicates the lowest degree of speculation and 'CCC' the highest. While such issues will likely have some quality and protective characteristics, these are outweighed by large uncertainties or major risk exposures to adverse conditions.
B	
B-	
CCC+	Predominantly speculative with respect to the issuer's capacity to pay preferred stock obligations. 'BB' indicates the lowest degree of speculation and 'CCC' the highest. While such issues will likely have some quality and protective characteristics, these are outweighed by large uncertainties or major risk exposures to adverse conditions.
CCC	
CCC-	
CC	Reserved for a preferred stock issue in arrears on dividends or sinking fund payments but that is currently paying.
C	A nonpaying issue.
D	A nonpaying issue with the issuer in default on debt instruments.
NR	NOT RATED, which implies no opinion about the insurer's financial security.

Note: Ratings from AAA to BBB- are investment grade ratings. Ratings from BB+ to C are non-investment grade

Screen Printed

Euro Zone		Settings				Sovereign Ratings				
<input checked="" type="radio"/> Foreign Currency <input type="radio"/> Local Currency <input type="checkbox"/> Ignore Watch		Highlight changes in last				20 business days.				
Country	Foreign Currency Long Term				Foreign Currency Short Term				Last Update MM/DD/YYYY	
	Moody's	S&P	Fitch	R&I	Moody's	S&P	Fitch	R&I		
21) Germany	Aaau	AAAu	AAA	AAA	NR	A-1+u	F1+	NR	01/27/2020	
22) Netherlands	Aaau	AAAu	AAA	AAA	P-1u	A-1+u	F1+	NR	01/27/2020	
23) Luxembourg	Aaa	AAA	AAA	NR	NR	A-1+	F1+	NR	09/20/2012	
24) Finland	Aa1	AA+	AA+	AAA	NR	A-1+	F1+	NR	01/18/2021	
25) Austria	Aa1	AA+	AA+	NR	P-1	A-1+	F1+	NR	06/24/2016	
26) France	Aa2u	AAu	AA	AAA	NR	A-1+u	F1+	NR	01/27/2020	
27) Belgium	Aa3	AAu	AA-	AA+	NR	A-1+u	F1+	NR	01/27/2020	
28) Estonia	A1	AA-	AA-	NR	NR	A-1+	F1+	NR	10/05/2018	
29) Lithuania	A2	A+	A	NR	WR	A-1	F1+	NR	02/12/2021	
30) Slovakia	A2	A+	A	A+	NR	A-1	F1+	NR	05/08/2020	
31) Malta	A2	A-	A+	NR	NR	A-2	F1+	NR	07/19/2019	
32) Ireland	A2	AA-	A+	A+	P-1	A-1+	F1+	a-1	01/25/2021	
33) Latvia	A3	A+	A-	A	NR	A-1	F1	NR	01/25/2021	

(Rating: Up, Down, No Change, Initial, Affirmation (R&I Only))

10 Rating News | NEWS »

- 1) Moneyweb: Brazil, South Africa finances at risk from domestic debt market volatility - S&P BES 03/15
- 2) Fitch Maintains Russia's Inter RAO at BBB, Keeps Outlook Stable MTN 08:25
- 3) Moody's affirms ratings of Jefferies (Baa3 senior debt) and its subsidiaries and changes outlook t... BMP 03/15
- 4) Fitch Maintains Russia's Inter RAO at BBB, Keeps Outlook Stable MTN 08:25

Screen Printed

Euro Zone		Settings				Sovereign Ratings				
<input checked="" type="radio"/> Foreign Currency		<input type="radio"/> Local Currency		<input type="checkbox"/> Ignore Watch		Highlight changes in last <input type="text" value="20"/> business days.				
Country	Foreign Currency Long Term				Foreign Currency Short Term				Last Update MM/DD/YYYY	
	Moody's	S&P	Fitch	R&I	Moody's	S&P	Fitch	R&I		
21) Greece	Ba3	BB-	BB	BB	NP	B	B	NR	11/06/2020	
22) Cyprus	(P)Ba2	BBB-	BBB-	NR	NP	A-3	F3	NR	10/19/2018	
23) Italy	Baa3u	BBBu	BBB-	BBB+	P-3u	A-2u	F3	NR	06/01/2020	
24) Portugal	Baa3	BBBu	BBB	BBB	NR	A-2u	F2	NR	12/14/2020	
25) Spain	Baa1	Au	A-	A	P-2	A-1u	F1	NR	11/02/2020	
26) Latvia	A3	A+	A-	A	NR	A-1	F1	NR	01/25/2021	
27) Slovenia	A3	AA-	A	A	NR	A-1+	F1+	NR	10/02/2020	
28) Lithuania	A2	A+	A	NR	WR	A-1	F1+	NR	02/12/2021	
29) Slovakia	A2	A+	A	A+	NR	A-1	F1+	NR	05/08/2020	
30) Malta	A2	A-	A+	NR	NR	A-2	F1+	NR	07/19/2019	
31) Ireland	A2	AA-	A+	A+	P-1	A-1+	F1+	a-1	01/25/2021	
32) Estonia	A1	AA-	AA-	NR	NR	A-1+	F1+	NR	10/05/2018	
33) Belgium	Aa3	AAu	AA-	AA+	NR	A-1+u	F1+	NR	01/27/2020	

(Rating: Up, Down, No Change, Initial, Affirmation (R&I Only))

10 Rating News | NEWS »

- | | | |
|---|-----|-------|
| 11) Moneyweb: Brazil, South Africa finances at risk from domestic debt market volatility - S&P | BES | 03/15 |
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| 14) Fitch Maintains Russia's Inter RAO at BBB, Keeps Outlook Stable | MTN | 08:25 |

Negotiable Certificates of Deposit (NCDs)

- Issued by large commercial banks or depository institutions
- Minimum denomination of \$100,000 but \$1 million more common
- Purchased by nonfinancial corporations or money market funds
- Provide **return in the form of interest**
- Maturity
 - Two week to one year
- Secondary markets supported by dealers in security

Repurchase Agreements (Repos)

- Sell a security with the agreement to repurchase it at a specified date and price
- **Loan backed by securities**
 - (Government securities, commercial papers)
- Borrower defaults, lender has security
- Maturity
 - From 1day to 15 days or 1, 3, 6 months
- Reverse repo name for transaction from lender
- No secondary market

Repo and Reverse Repo



Enter all values and hit <GO>

IBM US Equity | Send (VCON) | Send to NSD | Repo/Reverse Repo Analysis

International Business Machine (128.57/128.58) 1x132 Y Prev 128.58 | 97) Settings

Type Repo Trade Date 03/16/21 12:40 CUSIP 459200101 ISIN US4592001014

Repo Information

Settlement Date 03/18/21 Fixed Floating
Record Date 02/10/21 Repo Rate 0.0300% (Act/ Act)
Ex Date 02/09/21

	Settlement	Market
Price	128.5800000	128.58
Dividend		1.6300000

Collateral Haircut 100.0000%

Face Amt 1 M OR Settlement Money 128,580.00

Termination Date 03/19/21 OR Term (# Days) 1 DVP
Open Trade N Call Notification None

Currency Converter Money at Termination

View Amts in USD	Wired Amount	128,580.00
	Repo Interest	0.11
	Term Money	128,580.11

Notes

Screen saved as C:\Users\76289\Desktop\moneymarket 2021\repo.gif

IBM US Equity		Send (VCON)	Send to NSD	Repo/Reverse Repo Analysis	
International Business Machine (128.57/128.58) 1x132 Y Prev 128.58			Settings		
Type	Repo	Trade Date	03/16/21	12:40	CUSIP 459200101 ISIN US4592001014
Repo Information					
Settlement Date	03/18/21			<input checked="" type="radio"/> Fixed	<input type="radio"/> Floating
Record Date	02/10/21			Repo Rate	0.0300% (Act/Act)
Ex Date	02/09/21				
Price	Settlement	Market			
	128.5800000	128.58			
Dividend		1.6300000			
			<input checked="" type="radio"/> Collateral	<input type="radio"/> Haircut	100.0000%
Face Amt	1,000 M	OR	Settlement Money	128,580,000.00	
Termination Date	03/19/21	OR	Term (# Days)	1	DVP
			Open Trade	N	Call Notification
					None
Currency Converter		Money at Termination			
View Amts in	USD	Wired Amount	128,580,000.00		
		Repo Interest	105.68		
		Term Money	128,580,105.68		
Notes					

Federal Funds

- Interbank lending and borrowing
- Federal funds rate usually slightly higher than T-bill rate
 - Credit risk
- Fed district bank debits and credits accounts for purchase (borrowing) and sale (lending)
- High denomination
 - Usually \$5 million or more

SECURITIES	ISSUED BY	COMMON INVESTORS	COMMON MATURITIES	SECONDARY MARKET ACTIVITY
Treasury bills	Federal government	Households, firms, and financial institutions	13 weeks, 26 weeks, 1 year	High
Negotiable certificates of deposit (NCDs)	Large banks and savings institutions	Firms	2 weeks to 1 year	Moderate
Commercial paper	Bank holding companies, finance companies, and other companies	Firms	1 day to 270 days	Low
Banker's acceptances	Banks (exporting firms can sell the acceptances at a discount to obtain funds)	Firms	30 days to 270 days	High
Federal funds	Depository institutions	Depository institutions	1 day to 7 days	Nonexistent
Repurchase agreements	Firms and financial institutions	Firms and financial institutions	1 day to 15 days	Nonexistent

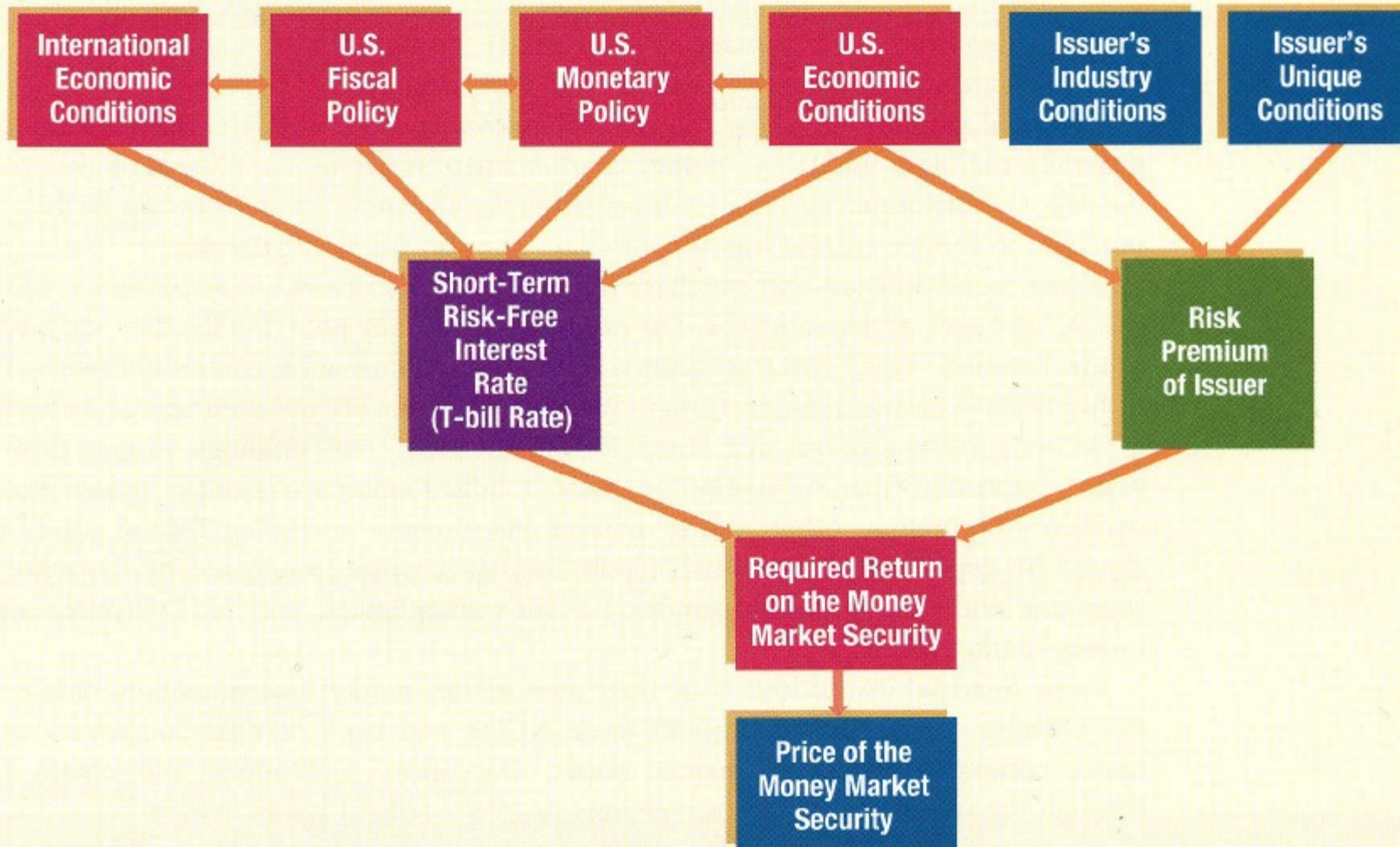
■ *Source: Madura, J.: Financial Markets and Institutions, 9th Edition*

TYPE OF FINANCIAL INSTITUTION	PARTICIPATION IN THE MONEY MARKETS
Commercial banks and savings institutions	<ul style="list-style-type: none"> • Bank holding companies issue commercial paper. • Some banks and savings institutions issue NCDs, borrow or lend funds in the federal funds market, engage in repurchase agreements, and purchase T-bills. • Commercial banks create banker's acceptances. • Commercial bank provide backup lines of credit to corporations that issue commercial paper.
Finance companies	<ul style="list-style-type: none"> • Issue large amounts of commercial paper.
Money market mutual funds	<ul style="list-style-type: none"> • Use proceeds from shares sold to invest in T-bills, commercial paper, NCDs, repurchase agreements, and banker's acceptances.
Insurance companies	<ul style="list-style-type: none"> • May maintain a portion of their investment portfolio as money market securities for liquidity.
Pension funds	<ul style="list-style-type: none"> • May maintain a portion of their investment portfolio as money market securities that may be liquidated when portfolio managers desire to increase their investments in bonds or stocks.

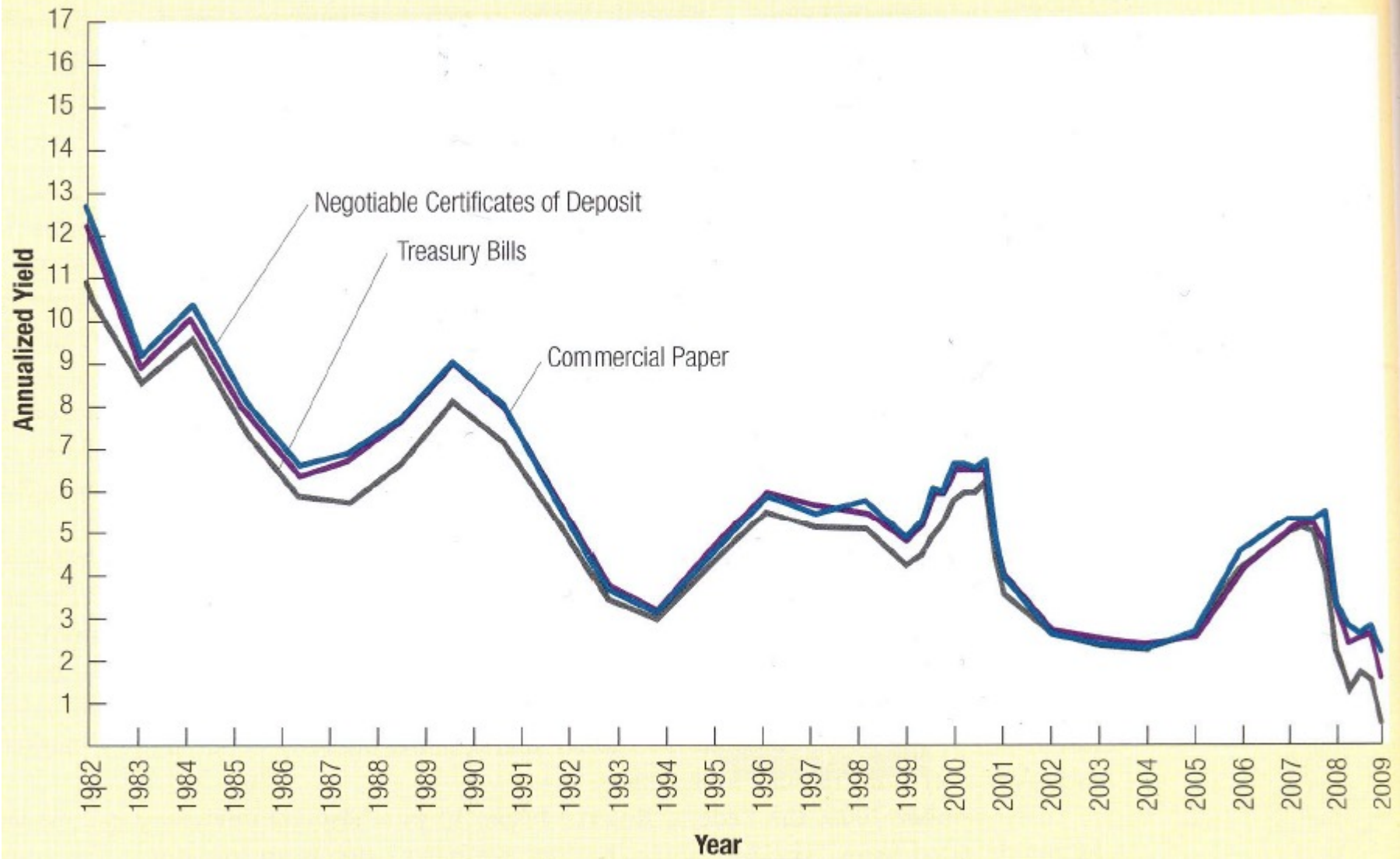
■ *Source: Madura, J.: Financial Markets and Institutions, 9th Edition*

Valuation of Money Markets Securities

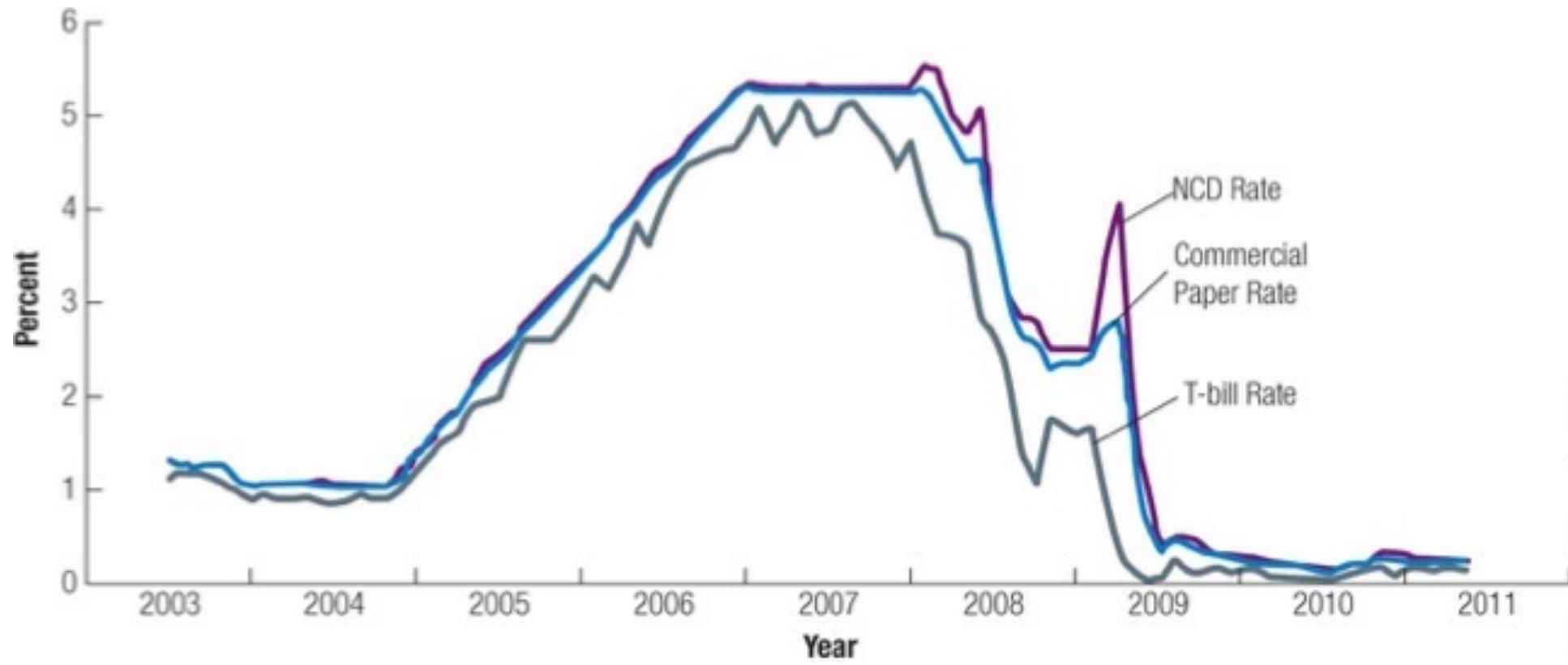
- **Based on simple interest**
- Present value of future cash flows at maturity (zero coupon)
- Value (price) inversely related to discount rate or yield
- Money market security prices more stable than longer term bonds
- Yields = risk-free rate + default risk premium
- Based on simple interest formula



■ Source: Madura, J.: *Financial Markets and Institutions*, 9th Edition



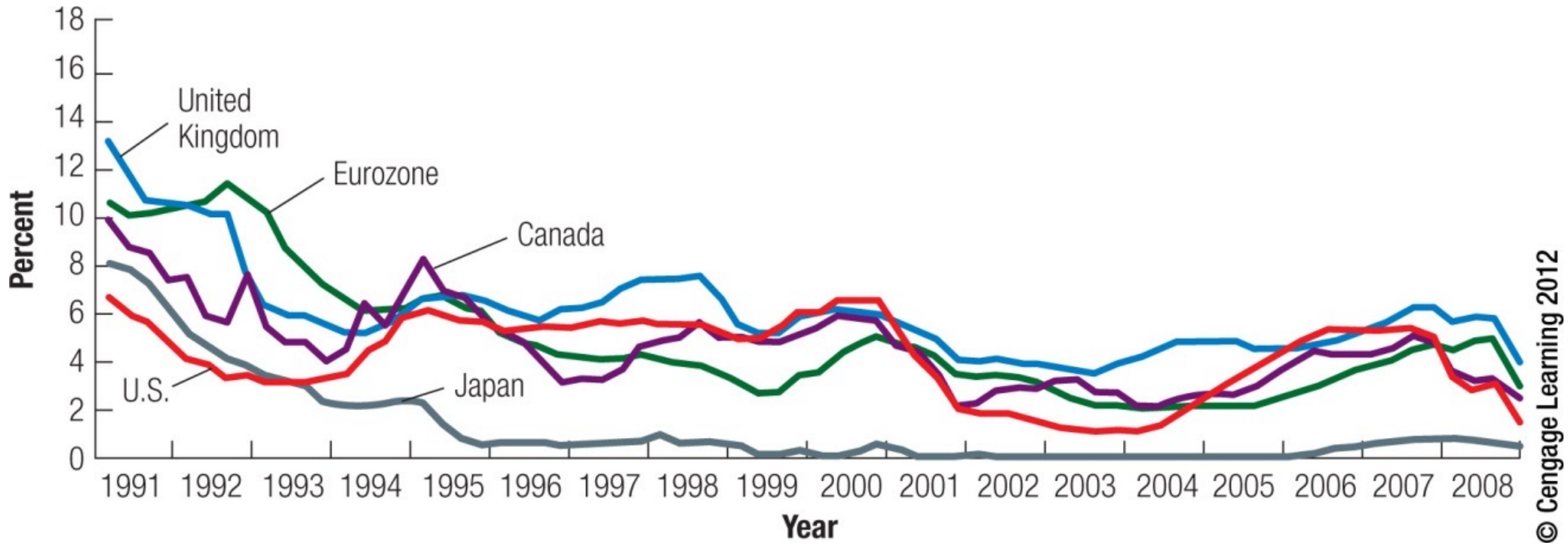
■ Source: Madura, J.: *Financial Markets and Institutions*, 9th Edition



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Globalization of Money Markets

- Money market rates vary by country
 - Segmented markets
 - Tax differences
 - Estimated exchange rates
 - Government barriers to capital flows
 - Deregulation Improves Financial Integration
- Capital Flows To Highest Rate of Return



■ Source: Madura, J.: *Financial Markets and Institutions, 9th Edition*

Performance of Foreign Money Market Securities

Measured by the **effective yield** (yield adjusted for the exchange rate)

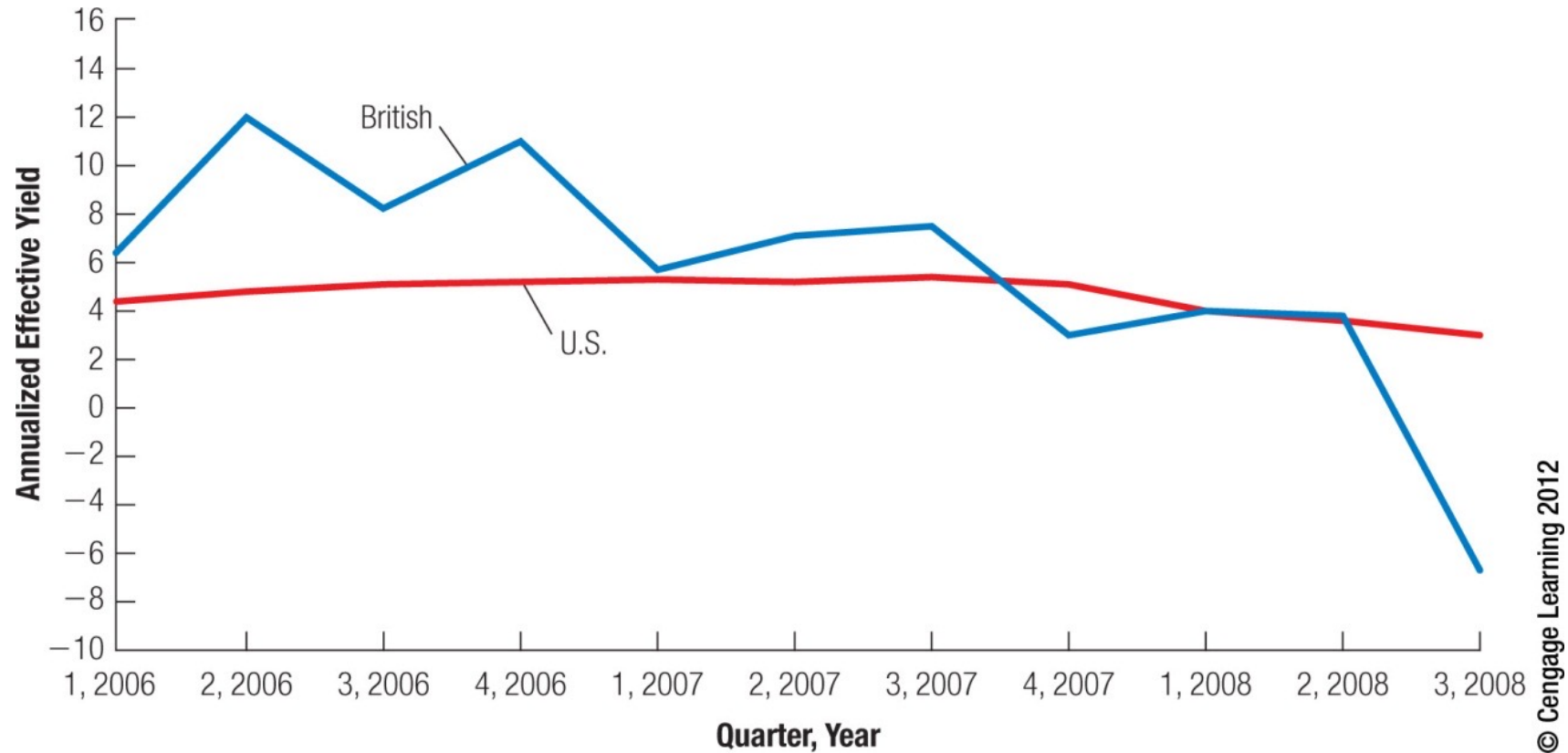
$$Y_f = \frac{SP_f - PP_f}{PP_f}$$

where SP_f = selling price of the foreign money market security
in the foreign currency

PP_f = purchase price of the foreign money market security
in the foreign currency

$$Y_e = (1 + Y_f) \times (1 + \% \Delta S) - 1$$

Comparison of Effective Yields between U.S. and British Money Market Yields for a U.S. Investor



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Example

Robbins Corp. frequently invests excess funds in the Mexican money market. One year ago, Robbins invested in a one-year Mexican money market security that provided a yield of 25 percent. At the end of the year, when Robbins converted the Mexican pesos to dollars, the peso had depreciated from \$.12 to \$.11. What is the effective yield earned by Robbins?

Combined rate of return = $\{(1 + \text{rate of return}) * (1 + \text{rate of return})\} - 1$

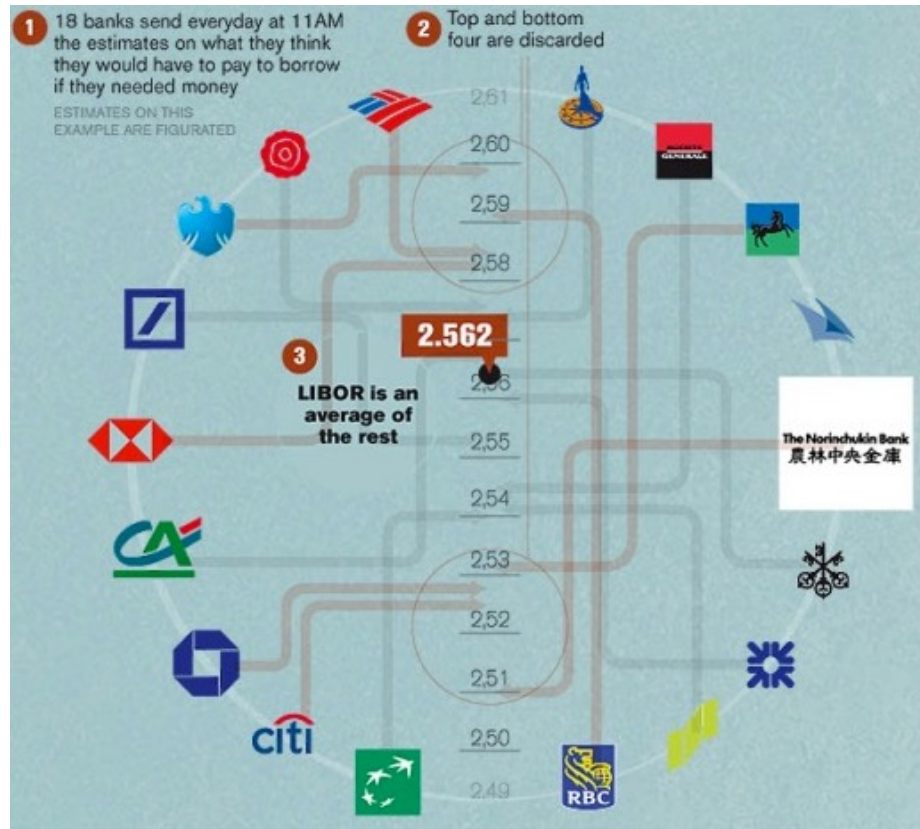
In this case rate of return from money market = 0.25

Rate of return from peso depreciation = $(0.11 - 0.12) / 0.12 = -0.08333$

Combined rate of return = $\{(1 + 0.25) * (1 - 0.08333)\} - 1$

Combined rate of return = 0.1459

Libor Scandal



Under suspicion for LIBOR manipulation

Top 10 currency traders [7]
% of overall volume, May 2012

Rank	Name	Market share
1	Deutsche Bank	14.57%
2	Citi	12.26%
3	Barclays Capital	10.95%
4	UBS AG	10.48%
5	HSBC	6.72%
6	JPMorgan	6.6%
7	Royal Bank of Scotland	5.86%
8	Credit Suisse	4.68%
9	Morgan Stanley	3.52%
10	Goldman Sachs	3.12%

In the first quarter of 2009, Citigroup for example reported that it would make that quarter \$936 million in net interest revenue if interest rates would fall by .25 percentage points a quarter, and \$1,935 million if they were to fall by 1 percentage

Libor Scandal

Libor Lies Revealed in Rigging of \$300 Trillion Benchmark



The benchmark rate for more than \$300 trillion of contracts was based on honesty. New evidence in banking's biggest scandal shows traders took it as a license to cheat. Graphic: Bloomberg Markets

By [Liam Vaughan](#) and [Gavin Finch](#)

6. února 2013 v 17:41 SEČ

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Businessweek

Libor fines

Deutsche Bank was fined a record \$2.5 billion for its role in a scam to manipulate the London Interbank Offered Rate (Libor)

	Fines	Regulators						
		FCA	DOJ	CFTC	NYDFS	EC	FINMA	DPP
Deutsche Bank (2013, '15)		✓	✓	✓	✓	✓		
UBS (2012)	1.5	✓	✓	✓			✓	
RBS (2013)	1.1	✓	✓	✓		✓		
Rabobank (2013)	1.0	✓	✓	✓				✓
Societe Generale (2013)	0.603					✓		
Barclays (2012)	0.453	✓	✓	✓				
Lloyds* (2014)	0.370	✓	✓	✓				
JPMorgan (2013)	0.108					✓		
ICAP (2013, 2015)	0.104	✓		✓		✓		
Citigroup (2013)	0.095					✓		
RP Martin (2013, 2014)	0.003	✓		✓		✓		

FCA: Financial Conduct Authority, DOJ: U.S. Department of Justice, CFTC: U.S. Commodity Futures Trading Commission, NYDFS: New York State Department of Financial Services, EC: European Commission, FINMA: Swiss Financial Market Supervisory Authority, DPP: Dutch Public Prosecutor.

Source: Reuters *Part of the Lloyds' fine related to attempted manipulation so-called "repo" rates

Overview of the most important ARR

Currency	CHF	EUR***	GBP	JPY	USD
Reference interest rate	SARON	€STR	SONIA	TONA	SOFR
Abbreviation for	Swiss Average Rate Overnight	Euro Short-Term Rate	Sterling Overnight Index Average	Tokyo Overnight Average Rate	Secured Overnight Financing Rate
Administrator	SIX Swiss Exchange	European Central Bank	Bank of England	Bank of Japan	Federal Reserve Bank of New York
Basis Market Segment	Secured interbank money market	Unsecured money market	Unsecured money market	Unsecured money market	Secured money market
Duration	Overnight	Overnight	Overnight	Overnight	Overnight

***The reference interest rate EURIBOR (European Interbank Offered Rate) was reformed and remains in use.