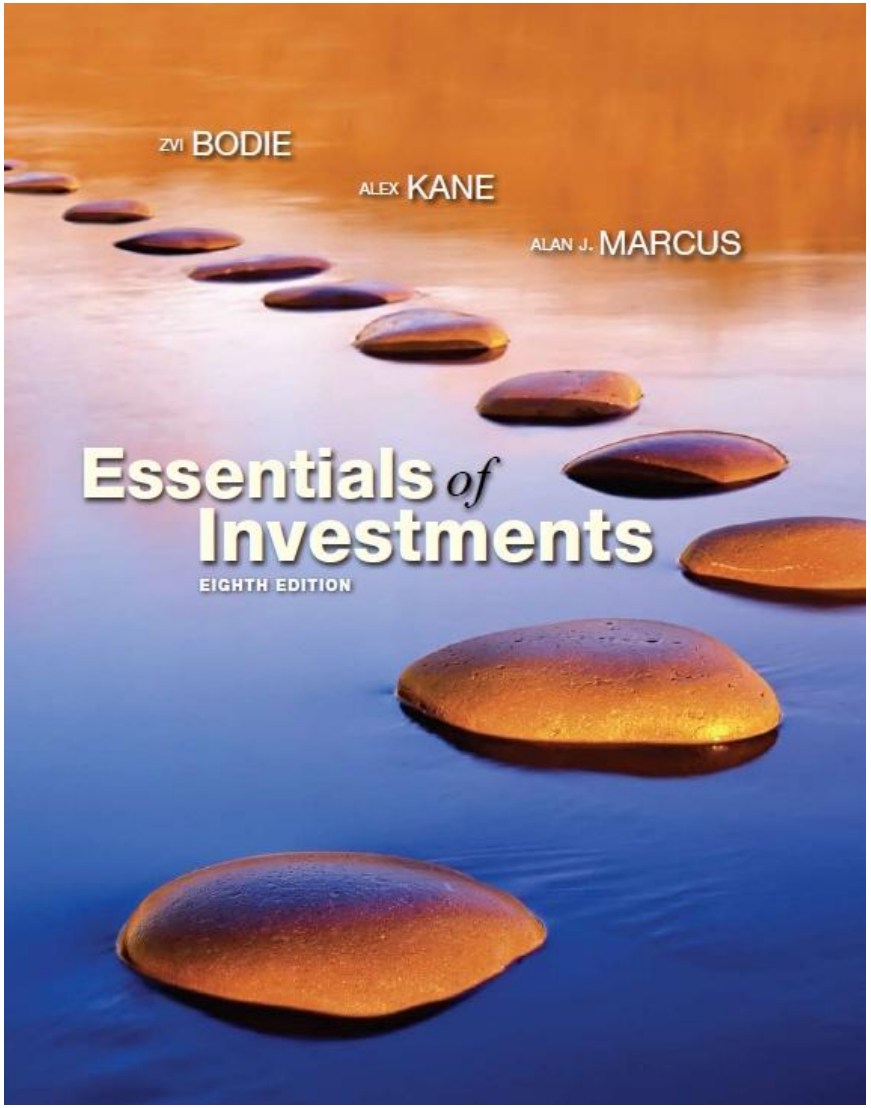
Chapter 2

Asset Classes and Financial Instruments



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2.1 The Money Market

Money Market Instruments

- Treasury Bills
- Certificates of Deposit
- Commercial Paper
- Bankers' Acceptances
- Eurodollars
- Repos and Reverses
- Broker's Calls
- Federal Funds
- LIBOR (London Interbank Offer Rate)

Treasury Bills

- **Treasury bills**
  - **Issued by** — **Federal Government**
  - **Denomination** — **$100, commonly $10,000**
  - **Maturity** — **4, 13, 26, or 52 weeks**
  - **Liquidity** — **Highly liquid**
  - **Default risk** — **None**
  - **Interest type** — **Discount**
  - **Taxation** — **Federal taxes owed, exempt from state and local taxes**

Certificates of Deposit (CD)

- **Certificates of Deposit**
  - **Issued by** — **Depository Institutions**
  - **Denomination** — **Any, $100,000 or more are marketable**
  - **Maturity** — **Varies, typically 14 day minimum**
  - **Liquidity** — **3 months or less are liquid if marketable**
  - **Default risk** — **First $100,000 ($250,000) is insured**
  - **Interest type** — **Add on**
  - **Taxation** — **Interest income is fully taxable**

Commercial Paper

- Commercial Paper
  - Issued by — Large creditworthy corporations and financial institutions
  - Maturity — Maximum 270 days, usually 1 to 2 months
  - Denomination — Minimum $100,000
  - Liquidity — 3 months or less are liquid if marketable
  - Default risk — Unsecured, Rated, Mostly high quality
  - Interest type — Discount
  - Taxation — Interest income is fully taxable

New Innovation: Asset backed commercial paper is backed by a loan or security. In summer 2007 asset backed CP market collapsed when subprime collateral values fell.

Bankers Acceptances & Eurodollars

- **Bankers Acceptances**
  - **Originates when a purchaser of goods authorizes its bank to pay the seller for the goods at a date in the future (time draft).**
  - **When the purchaser's bank 'accepts' the draft it becomes a contingent liability of the bank and becomes a marketable security.**
- **Eurodollars**
  - **Dollar denominated (time) deposits held outside the U.S.**
  - **Pay a higher interest rate than U.S. deposits.**

Federal Funds and LIBOR

- **Federal Funds**
  - **Depository institutions must maintain deposits with the Federal Reserve Bank.**
  - **Federal funds represents trading in reserves held on deposit at the Federal Reserve.**
  - **Key interest rate for the economy**

- **LIBOR (London Interbank Offer Rate)**
  - **Rate at which large banks in London (and elsewhere) lend to each other.**
  - **Base rate for many loans and derivatives.**

Repurchase Agreements and Reverses

- **Repurchase Agreements (RPs or repos) and Reverse RPs**
  - **Short term sales of securities arranged with an agreement to repurchase the securities a set higher price.**
  - **A RP is a collateralized loan, many are overnight, although "Term" RPs may have a one month maturity.**
  - **A Reverse Repo is lending money and obtaining security title as collateral.**
  - **"Haircuts" may be required depending on collateral quality**

Money Market Instruments

- Call Money Rate
  - Investors who buy stock on margin borrow money from their brokers to purchase stock. The borrowing rate is the call money rate.
  - The loan may be ‘called in’ by the broker.

Figure 2.1 Money Rates

Money Rates

January 5, 2009

International rates

	Latest	Week ago	52-WEEK High	52-WEEK Low
Prime rates				
U.S.	**3.25**	**3.25**	**7.25**	**3.25**
Canada	**3.50**	3.50	6.00	3.50
Euro zone	**2.50**	2.50	4.25	2.50
Japan	**1.675**	1.675	1.875	1.675
Switzerland	**0.52**	2.03	4.56	0.52
Britain	**2.00**	2.00	5.50	2.00
Australia	**4.25**	4.25	7.25	4.25
Hong Kong	**5.00**	5.00	7.00	5.00
Overnight repurchase				
U.S.	**0.10**	0.10	4.17	0.08
U.K. (BBA)	**1.925**	1.858	5.742	1.483
Euro zone	**2.14**	2.17	4.50	2.13

U.S. government rates

	Latest	Week ago	52-WEEK High	52-WEEK Low
Federal funds				
Effective rate	**0.15**	0.15	4.28	0.12
High	**0.5000**	0.5000	10.0000	0.5000
Low	**0.0300**	0.0400	4.1875	0.0000
Bid	**0.0625**	0.0625	4.7500	0.0000
Offer	**0.2500**	0.1250	7.0000	0.0500
Treasury bill auction				
4 weeks	**0.030**	0.000	3.240	0.000
13 weeks	**0.150**	0.050	3.180	0.005
26 weeks	**0.320**	0.250	3.170	0.250

Secondary market

	Latest	Week ago	52-WEEK High	52-WEEK Low
Freddie Mac				
30-year mortgage yields				
30 days	**4.25**	4.44	6.49	4.09
60 days	**4.46**	4.61	6.56	4.37
One-year RNY	**3.375**	3.375	3.375	3.375
Fannie Mae				
30-year mortgage yields				
30 days	**4.652**	4.470	6.566	4.099
60 days	**4.809**	4.583	6.618	4.186
Bankers acceptances				
30 days	**0.50**	0.68	5.13	0.50
60 days	**0.88**	0.88	5.13	0.88
90 days	**1.25**	1.13	5.00	1.13
120 days	**1.50**	1.50	5.00	1.50
150 days	**1.50**	1.50	5.00	1.50
180 days	**1.75**	1.88	5.00	1.75

	Latest	Week ago	52-WEEK High	52-WEEK Low
Commercial paper				
30 to 97 days	**n.q.**	...	...	...
98 to 119 days	**0.15**	...	...	...
120 to 149 days	**0.20**	...	...	...
150 to 165 days	**0.30**	...	...	...
166 to 180 days	**0.35**	...	...	...
181 to 270 days	**n.q.**	...	...	...
Dealer commercial paper				
30 days	**0.84**	0.74	5.95	0.52
60 days	**0.94**	0.94	5.95	0.94
90 days	**1.14**	1.14	5.95	1.12
Euro commercial paper				
30 day	**2.27**	2.37	4.75	2.27
Two month	**2.50**	2.50	4.80	2.48
Three month	**2.60**	2.59	5.00	2.58
Four month	**2.64**	2.86	5.00	2.64
Five month	**2.65**	2.89	5.02	2.65
Six month	**2.68**	2.91	5.07	2.68
London interbank offered rate, or Libor				
One month	**0.42875**	0.46125	4.58750	0.42875
Three month	**1.42125**	1.45875	4.81875	1.41250
Six month	**1.79375**	1.81125	4.39375	1.75000
One year	**2.09250**	2.07750	4.23375	2.00375
Libor Swaps (USD)				
Two year	**1.579**	1.461	3.978	1.431
Three year	**1.892**	1.714	4.325	1.692
Five year	**2.319**	2.076	4.661	1.996
Ten year	**2.856**	2.477	4.968	2.304
20 year	**3.164**	2.736	5.200	2.438
30 year	**3.177**	2.713	5.248	2.365
Euro interbank offered rate (Euribor)				
One month	**2.543**	2.692	5.197	2.543
Three month	**2.822**	2.973	5.393	2.822
Six month	**2.913**	3.037	5.448	2.913
One year	**2.995**	3.126	5.526	2.995
Asian dollars				
One month	**0.432**	0.468	4.588	0.430
Three month	**1.422**	1.462	4.780	1.415
Six month	**1.754**	1.818	4.438	1.754
One year	**2.018**	2.076	5.408	2.018

	LATEST Offer	LATEST Bid	Week ago	52-WEEK High	52-WEEK Low
Eurodollars (mid rates)					
One month	**0.50**	1.00	1.00	6.25	0.63
Two month	**0.75**	1.25	1.25	5.50	0.88
Three month	**1.00**	1.75	1.50	5.75	1.00
Four month	**1.25**	2.00	1.75	5.25	1.25
Five month	**1.25**	2.00	1.75	5.25	1.50
Six month	**1.50**	2.25	2.00	5.25	1.75

Figure 2.2 Treasury Bills (T-bills)

Treasury Bills

MATURITY	DAYS TO MAT	BID	ASKED	CHG	ASK YLD
Nov 20 08	56	0.205	0.185	–0.25	0.188
Dec 04 08	70	0.240	0.220	–0.18	0.223
Jan 02 08	99	0.510	0.490	–0.52	0.497
Jan 29 09	126	0.600	0.585	–0.15	0.594
Feb 26 09	154	1.200	1.175	–0.02	1.197
Mar 05 09	161	1.200	1.190	–0.14	1.213
Mar 12 09	168	1.190	1.175	0	1.198
Mar 26 09	182	1.435	1.430	–0.18	1.460

MMMF and the Credit Crisis of 2008

- **Between 2005 and 2008 money market mutual funds (MMMFs) grew by 88%. Why?**
- **MMMFs had their own crisis in 2008 when Lehman Brothers filed for bankruptcy on September 15.**
- **Some funds had invested heavily in Lehman's commercial paper.**
- **On Sept. 16, Reserve Primary fund "broke the buck." What does this mean?**
- **A run on money market funds ensued.**
- **The U.S. Treasury temporarily offered to insure all money funds to stop the run**
  - **(up to $3.4 trillion in these funds.)**

Money Market Instrument Yields

- Yields on money market instruments are not always directly comparable

Factors influencing “quoted” yields

- Par value vs. investment value
- 360 vs. 365 days assumed in a year (366 leap year)
- Simple vs. Compound Interest

Bank Discount Rate (T-Bill quotes)

$10,000 = Par

$$r_{BD} = \frac{\$10{,}000 - P}{\$10{,}000} \times \frac{360}{n}$$

r_{BD} = bank discount rate

P = market price of the T-bill

n = number of days to maturity

Example

90-day T-bill, P = $9,875

$$r_{BD} = \frac{\$10{,}000 - \$9{,}875}{\$10{,}000} \times \frac{360}{90} = 5\%$$

Bond Equivalent Yield

- Can’t compare T-bill directly to bond
  - 360 vs 365 days
  - Return is figured on par vs. price paid

- Adjust the bank discount rate to make it comparable

Bond Equivalent Yield

$r_{BD}=5\%$

$$r_{BEY} = \frac{10{,}000 - P}{P} \times \frac{365}{n}$$

P = price of the T-bill

n = number of days to maturity

Example Using Sample T-Bill

$$r_{BEY} = \frac{10{,}000 - 9{,}875}{9{,}875} \times \frac{365}{90}$$

$$r_{BEY} = .0127 \times 4.0556 = .0513 = 5.13\%$$

Effective Annual Yield

$$r_{EAY} = \left(1 + \frac{\$10{,}000 - P}{P}\right)^{\frac{365}{n}} - 1$$

r_{BD}=5%

r_{BEY}=5.13%

r_{EAY}=5.23%

P = price of the T-bill

n = number of days to maturity

Example Using Sample T-Bill

$$r_{EAY} = \left(1 + \frac{\$10{,}000 - \$9{,}875}{\$9{,}875}\right)^{\frac{365}{90}} - 1$$

r_{EAY} = 5.23%

An investor buys a T-bill at a bank discount quote of 4.80 with 150 days to maturity. The investor's actual annual rate of return on this investment was _____.

A. 4.80%
B. 4.97%
C. 5.47%
D. 5.74%

A T-bill quote sheet has 90 day T-bill quotes with a 4.92 bid and a 4.86 ask. If the bill has a $10,000 face value an investor could buy this bill for

A. $10,000.00
B. $9,878.50
C. $9,877.00
D. $9,880.16

If a treasury note has a bid price of $996.25, the quoted bid price in the Wall Street Journal would be _____.

A. 99:25

B. 99:63

C. 99:20

D. 99:08

A stock quote indicates a stock price of $60 and a dividend yield of 3%. The latest quarterly dividend received by stock investors must have been _____ per share.

A. $0.55
B. $1.80
C. $0.45
D. $1.25

Money Market Instruments

• Treasury bills	Discount
• Certificates of deposit	BEY*
• Commercial Paper	Discount
• Bankers Acceptances	Discount
• Eurodollars	BEY*
• Federal Funds	BEY*
• Repurchase Agreements (RPs) and Reverse RPs	Discount

2.2 The Bond Market

Capital Market - Fixed Income Instruments

Government Issues

- **US Treasury Bonds and Notes**
  - **Bonds versus Notes**
  - **Denomination**
  - **Interest type**
  - **Risk? Taxation?**

Variation: Treasury Inflation Protected Securities (TIPS)

- **Tips have principal adjusted for increases in the Consumer Price Index**
- **Marked with a trailing *'i'* in the quote sheet (See Figure 2.4)**

Capital Market - Fixed Income Instruments

MATURITY	COUPON	BID	ASKED	CHG	YLD TO MATURITY
2009 Feb 15	4.5	101:06	101:06	–2	1.401
2012 Feb 15	4.875	107:26	107:27	22	2.448
2013 Feb 15	3.875	104:18	104:19	24	2.756
2015 Feb 15	4	105:20	105:22	29	3.017
2015 Jan 15 i	1.625	98:26	98:27	15	1.820
2017 Feb 15	4.625	106:26	106:27	17	3.671
2020 Feb 15	8.5	139:14	139:15	29	4.122
2026 Feb 15	6	119:02	119:03	23	4.416
2026 Jan 15 i	2	94:07	94:08	9	2.408
2036 Feb 15	4.5	101:06	101:07	26	4.423
2038 Feb 15	4.5	101:31	102:01	28	4.378

Capital Market - Fixed Income Instruments

Government Issues

- **Agency Issues (Fed Gov)**
  - **Most are home mortgage related**
    - **Issuers: FNMA, FHLMC, GNMA, Federal Home Loan Banks**
  - **Risk of these securities?**
    - **Implied backing by the government**
    - **In September 2008, Federal government took over FNMA and FHLMC.**

Capital Market - Fixed Income Instruments

Government Issues

- **Municipal Bonds**
  - **Issuer?**
  - **Differ from Treasuries and Agencies?**
    - **Risk?**
      - **G.O. vs Revenue**
      - **Industrial development**
    - **Taxation?**

$$r_{TaxExempt} = r_{Taxable} \times (1 - Tax\ Rate)$$

r = interest rate

An investor purchases one municipal and one corporate bond that pay rates of return of 5.00% and 6.40% respectively. If the investor is in the 15% tax bracket, his after tax rates of return on the municipal and corporate bonds would be respectively

A. 5.00% and 6.40%

B. 5.00% and 5.44%

C. 4.25% and 6.40%

D. 5.75% and 5.44%

Capital Market - Fixed Income Instruments

Private Issues

- **Corporate Bonds**
  - **Investment grade vs speculative grade**

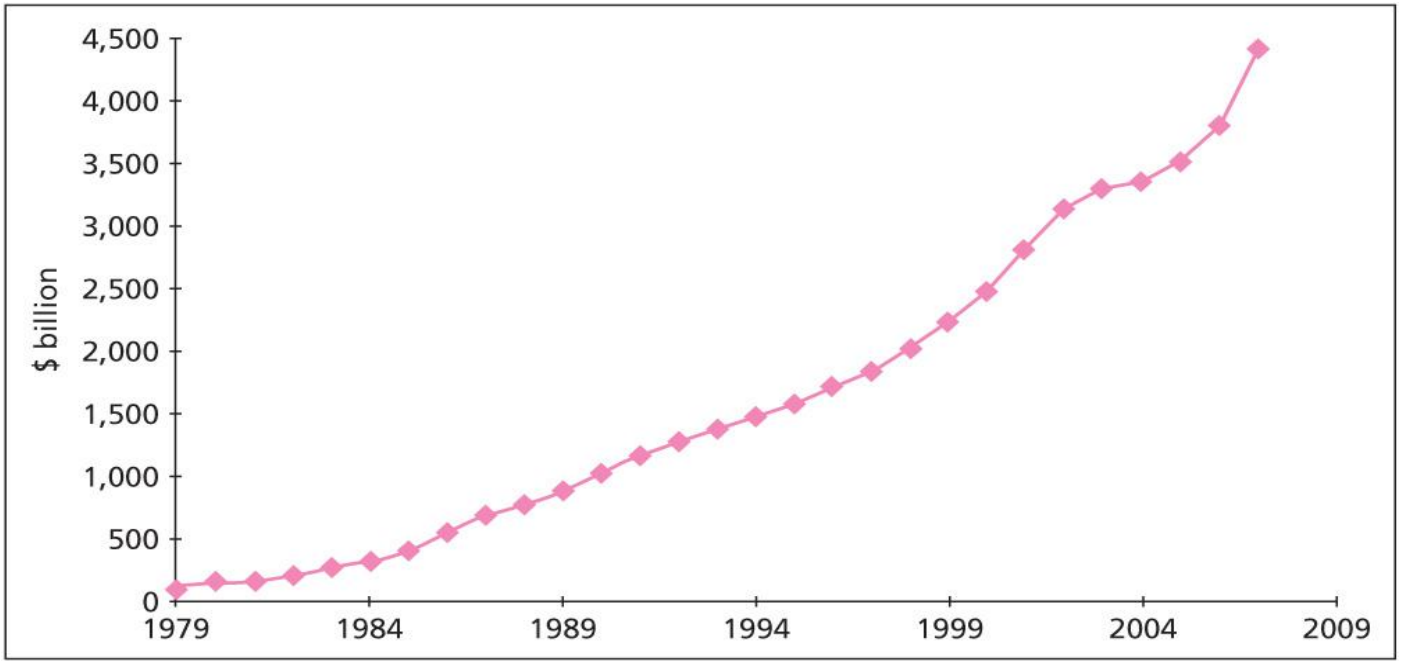
Capital Market - Fixed Income Instruments

- **Mortgage-Backed Securities**
  - **Pass-through**
    - **A security backed by a pool of mortgages. The pool backer 'passes through' monthly mortgage payments made by homeowners and covers payments from any homeowners that default.**
    - **Collateral:**
      - **Traditionally all mortgages were conforming mortgages but since 2006, Alt-A and subprime mortgages were included in pools**

Capital Market - Fixed Income Instruments

- **Mortgage-Backed Securities**
  - **Political encouragement to spur affordable housing led to increase in subprime lending**
  - **Private banks began to purchase and sell pools of subprime mortgages**
  - **Pool issuers assumed housing prices would continue to rise, but they began to fall as far back as 2006 with disastrous results for the markets.**

Figure 2.7 Mortgage Backed Securities Outstanding



2.3 Equity Securities

Capital Market - Equity

- **Common stock**
  - **Residual claim**
    - **Cash flows to common stock?**
    - **In the event of bankruptcy, what will stockholders receive?**
  - **Limited liability**
    - **What is the maximum loss on a stock purchase?**

Capital Market - Equity

- **Preferred stock**
  - **Fixed dividends: limited gains, non-voting**
  - **Priority over common**
  - **Tax treatment**
    - **Preferred & common dividends are not tax deductible to the issuing firm**
    - **Corporate tax exclusion on 70% dividends earned**

Capital Market - Equity

- **Depository Receipts**
  - **American Depository Receipts (ADRs) also called American Depository Shares (ADSs) are certificates traded in the U.S. that represent ownership in a foreign security.**

Capital Market - Equity

NAME	SYMBOL	CLOSE	CHG	VOLUME	52 WK HIGH	52 WK LOW	DIV	P/E	YIELD	YTD% CHG
Gencorp	GY	7.89	-0.37	375,381	13.18	6.87	--	21	--	-39.2
Genentech	DNA	91.39	-0.56	2,395,127	99.14	65.35	--	34	--	28.8
General Cable	BGC	38.24	-1.08	1,256,277	83.58	32.96	--	9	--	-47.1
General Dynamics	GD	74.92	-1.82	5,947,222	85.13	74.01	1.48	13	1.9	-15.8
General Electric	GE	25.25	-0.42	44,302,631	42.15	22.16	1.24	12	4.9	-30.9
General Mills Inc	GIS	69.61	0.26	2,325,562	72.01	51.00	1.72	19	2.5	22.1
General Motors	GM	9.76	-0.27	20,697,843	43.28	8.81	--	44	--	-68.8
Genesco	GCO	35.44	0.08	430,115	43.86	16.97	--	7	--	3.6
Genesee & Wyoming	GWR	38.87	-1.19	376,189	47.41	21.96	--	26	--	61.2
Genesis Lease ADS	GLS	10.80	-0.04	239,532	25.38	9.12	1.88	--	--	-46.7
Genuine Parts	GPC	41.82	0.15	564,295	50.97	36.94	1.56	14	3.7	-18.1
Genworth Financial	GNW	8.14	-2.44	4,820,839	32.33	3.51	0.48	7	4.9	-68.8
Georgia Gulf	GGC	2.25	-0.15	146,290	14.32	1.96	--	48	--	-74.9
Gerber Scientific	GRB	8.99	--	74,475	12.64	7.96	--	17	--	-16.8

Capital Market - Equity

- **Capital Gains and Dividend Yields**
  - **You buy a share of stock for $50, hold it for one year, collect a $1.00 dividend and sell the stock for $54. What were your dividend yield, capital gain yield and total return? (Ignore taxes)**
  - **Dividend yield: = Dividend / P_{buy}**
  - **Capital gain yield: = $(P_{sell} – P_{buy})/ P_{buy}$**
  - **Total return: = Dividend yield + Capital gain yield**

2.4 Stock and Bond Indexes

Uses

- **Track average returns**
- **Comparing performance of managers**
- **Base of derivatives**

Factors in constructing or using an index

- **Representative?**
- **Broad or narrow?**
- **How is it constructed?**

Construction of Indexes

- **How are stocks weighted?**
  - **Price weighted (DJIA)**
  - **Market-value weighted (S&P500, NASDAQ)**
  - **Equally weighted (Value Line Index)**

How much money do you put in each stock in the index?

Constructing market indices

a) What stocks to include

b) Weighting schemes

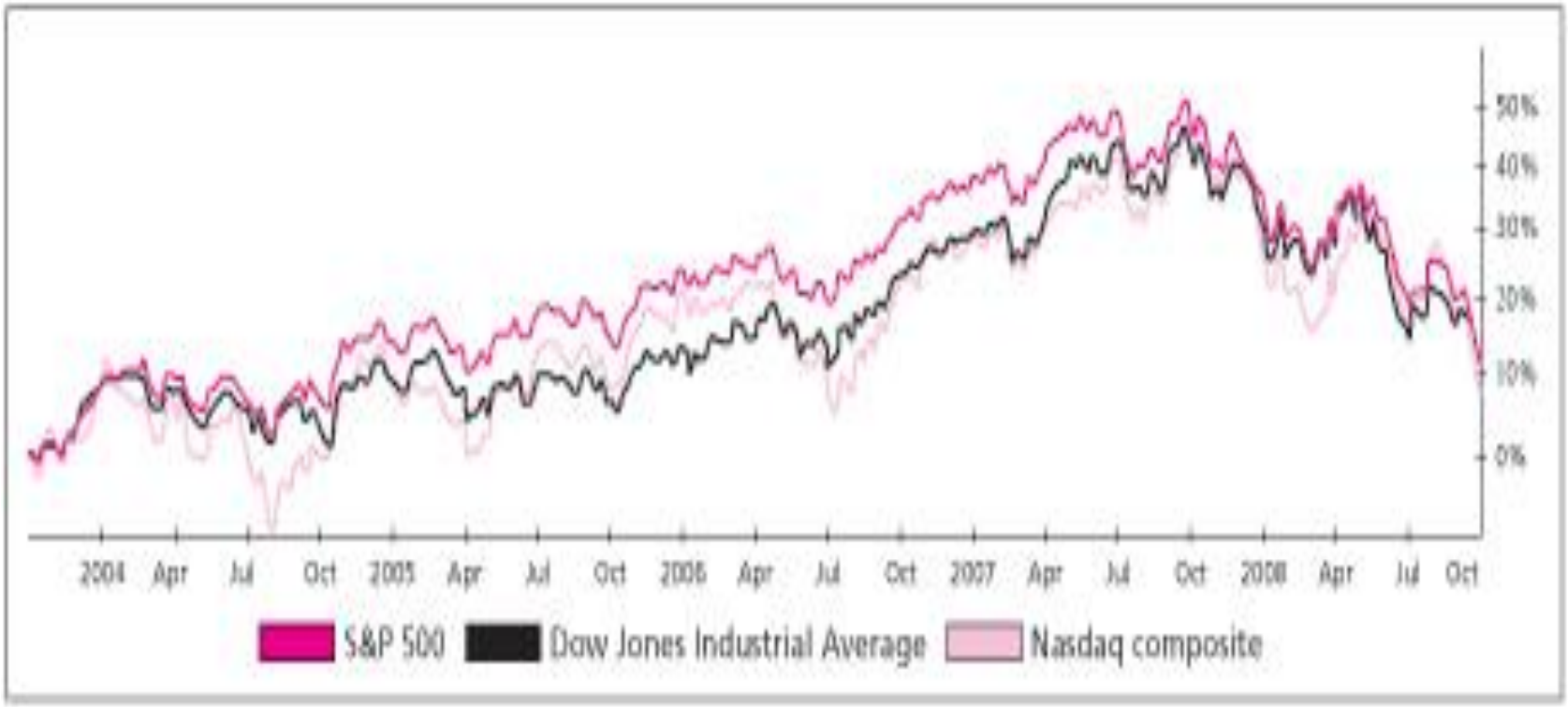
- Price weighted average assumes buy 1 share each stock and invest cash and stock dividends proportionately.
- Value weighted: considers not only price but also # shares o/s:
  - $ invested in each stock are proportional to market value of each stock
- Equal weighted: considers not only price but also # shares:
  - invest same amount of $ in each stock regardless of market value of stock

Examples of Indexes - Domestic

- Dow Jones Industrial Average (30 Stocks)

- Standard & Poor's 500 Composite
- NASDAQ Composite (> 3000 firms)
- NYSE Composite
- Wilshire 5000 (> 6000 stocks)

Figure 2.9 Comparative Performance of Several Stock Market Indices, 2001-2008



Why has performance differed for the indices?

What is the tax exempt equivalent yield on a 9% bond yield given a marginal tax rate of 28%?

A. 6.48%

B. 7.25%

C. 8.02%

D. 9.00%

A tax free municipal bond provides a yield of 3.2%. What is the equivalent taxable yield on the bond given a 35% tax bracket?

A. 3.20%

B. 3.68%

C. 4.92%

D. 5.00%

Three stocks have share prices of $12, $75, and $30 with total market values of $400 million, $350 million and $150 million respectively. If you were to construct a price-weighted index of the three stocks what would be the index value?

A. 300

B. 39

C. 43

D. 30

A corporation in a 34% tax bracket invests in the preferred stock of another company and earns a 6% pre-tax rate of return. An individual investor in a 15% tax bracket invests in the same preferred stock and earns the same pre-tax return. The after tax return to the corporation is _____ and the after tax return to the individual investor is _____.

A. 3.96%; 5.1%

B. 5.39%; 5.1%

C. 6.00%; 6.00%

D. 3.96%; 6.00%

The Chompers Index is a price weighted stock index based on the 3 largest fast food chains. The stock prices for the three stocks are $54, $23, and $44. What is the price weighted index value of the Chompers Index?

A. 23.43
B. 35.36
C. 40.33
D. 49.58

- The Hydro Index is a price weighted stock index based on the 5 largest boat manufacturers in the nation. The stock prices for the five stocks are $10, $20, $80, $50 and $40. The price of the last stock was just split 2 for 1 and the stock price was halved from $40 to $20. What is the new divisor for a price weighted index?

A. 5.00
B. 4.85
C. 4.50
D. 4.75

2.5 Derivative Markets

- **Listed Call Option:**
  - **Holder the right to buy 100 shares of the underlying stock at a predetermined price on or before some specified expiration date.**
- **Listed Put Option:**
  - **Holder the right to sell 100 shares of the underlying stock at a predetermined price on or before some specified expiration date.**

Futures Contracts

In a futures contract the purchaser of the contract (the long) agrees to purchase the specified quantity of the underlying commodity at contract expiration at the price (futures price) set in the contract.

The contract seller (the short) agrees to deliver the underlying commodity at contract expiration in exchange for receiving the agreed upon price.

Futures are a commitment to buy or sell in the future whereas at a preset price whereas options give the holder the right to buy or sell in the future.

Figure 2.11 Futures Contracts

MATURITY	LAST	CHG	OPEN	HIGH	LOW	VOLUME	OPEN INT
Dec '08	455'4	–28'4	485'4	488'0	454'6	100393	517447
Mar '09	474'6	–28'2	504'6	506'4	473'4	17005	200555
May '09	486'0	–29'0	517'6	517'6	486'0	2571	47010
Jul '09	498'0	–27'6	527'4	529'2	497'2	4894	96555
Sep '09	505'4	–26'4	534'0	535'0	504'2	779	19780
Dec '09	511'6	–25'2	538'6	539'6	509'2	8727	114099
Mar '10	526'0	–20'0	546'0	546'0	525'0	1365	6691
May '10	533'6	–17'2	533'0	546'2	533'0	43	277
Jul '10	542'4	–13'0	535'4	542'4	535'4	78	1941
Dec '10	503'0	–27'0	532'0	532'0	503'0	313	27991
Dec '11	511'0	–19'0	530'0	530'0	511'0	21	501

Figure 2.11 Futures Contracts

- **Contract size: 5000 bushels of corn**
- **Price quote for Dec 08 contract: 455'4 translates to a price of $4.55 + 4/8 cents per bushel or $4.555 per bushel.**
- **If you bought the Dec 08 contract what would you be agreeing to do?**
  - **Purchase 5000 bushels of corn in December for 5,000 x $4.555 = $22,775.**
- **What would be your obligation if you sold the Dec 08 contract?**
- **How does this contract differ from an option?**

Derivatives Securities

Options

- **Basic Positions**
  - **Call (Buy/Sell?)**
  - **Put (Buy/Sell?)**
- **Terms**
  - **Exercise Price**
  - **Expiration Date**

Futures

- **Basic Positions**
  - **Long (Buy/Sell?)**
  - **Short (Buy/Sell?)**
- **Terms**
  - **Delivery Date**
  - **Deliverable item**

Selected Problems

1. Find the after tax rate of return to a **corporation** that buys preferred stock at $40, holds it one year and sells it at $40 after collecting a $4 dividend. The firm's tax rate is 30%.

- **(Pretax rate or return = $4 / $40 = 10%)**
- The total before-tax income is $4. After the 70% exclusion, taxable income is:
- 0.30 × $4 = $1.20 taxable income
- Therefore Taxes owed are Tax rate × taxable income
- Taxes = 0.30 × $1.20 = $0.36
- After-tax income = $4 – $0.36 = $3.64
- After-tax rate of return = $3.64 / $40 = 9.10%

NEW YORK STOCK EXCHANGE COMPOSITE TRANSACTIONS

52 -WEEK HI	52 -WEEK LO	STOCK (SYM)	DIV	YLD %	PE	VOL 100s	CLOSE	NET CHG
97	64.32	GenDynam GD	1.44	1.5	18	5583	94.80	1.14

2. a) Using the quote find GD's closing price the day before the quote appeared

The closing price is $94.80, which is $1.14 higher than yesterday's price. Therefore, yesterday's closing price was: $94.80 – $1.14 = $93.66

b) How many shares could you buy for $5000?

You could buy: $5,000/$94.80 = 52.74 shares

c) Total annual dividend income from the 52 shares?

$1.44 * 52 = $74.88

d) What are EPS? (Approximate)

P / (P/E) = EPS = $94.80 / 18 = $5.27

3. An investor has a 30% tax rate and corporate bonds are paying 9%. What must munis pay to offer an equivalent after tax yield?

$$r_{\text{Tax Exempt}} = r_{\text{Taxable}} \times (1 - \text{TaxRate})$$

$$r_{\text{Tax Exempt}} = 9\% \times (1 - 0.30) = 6.3\%$$

Petroleum Futures
Crude Oil, Light Sweet (NYM)-1,000 bbls; $ per bbl.

	OPEN	HIGH	LOW	SETTLE	CHG	LIFETIME HIGH	LIFETIME LOW	OPEN INT
July	41.70	41.83	40.75	41.14	-0.58	41.83	20.86	243,522

4.

a) You buy one July 2004 contract at the settle price. In July the contract closes at $42 per barrel. What was your $ profit?

The July maturity futures price is $41.14 per barrel. If the contract closes at $42 per barrel in July, your profit on each contract (for delivery of 1,000 barrels of crude oil) will be: ($42 – $41.14) × 1000 = $860

b) How many July contracts are outstanding?

There are 243,522 contracts outstanding, calling for delivery of 243,522,000 barrels of crude oil.

6. What would you expect to happen to the spread between yields on commercial paper and T-bills if the economy were to enter a steep recession?

The spread will widen. Deterioration of the economy increases credit risk, that is, the likelihood of default. Investors will demand a greater premium on debt securities subject to default risk.