

**Achievement of Market-Friendly Initiatives and Results Program  
(AMIR 2.0 Program)**

**Funded By U.S. Agency for International Development**

**Social Security Investment Corporation  
Portfolio Management Workshop**

Final Report

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*This report was prepared by Ronald Copley and James Dry, in collaboration with Chemonics International Inc., prime contractor to the U.S. Agency for International Development for the AMIR Program in Jordan.*

**The Role of Commercial Paper in Corporate Finance**  
**By James R. Dry, Chemonics International Inc.**

1. What is Commercial Paper?

Commercial paper is typically defined as short term (less than one year) unsecured promissory notes issued by a major corporation. CP is basically an IOU issued by a well known company to an investor to pay back the principal amount borrowed plus accrued interest.

CP issued is typically issued under an arrangement whereby maturing notes can be redeemed or rolled over for another period of time. CP is usually issued by a facility arrangement whereby notes are issued up to a maximum amount. The facility arrangement may be renewed on an annual or other basis with the issuing agent.

CP notes are negotiable instruments although there is no organized secondary trading in the notes due to their short term maturity.

2. What is CP used for?

As a short term money market instrument, it is used for financing short term needs – paying quarterly tax assessments, funding inventory, etc. Longer term borrowing needs should be financed by longer term instruments such as bonds and debentures. As ST notes, CP can be issued for periods of up to 360 days (270 in the US), but the most popular maturities in East Africa are 30 and 91 days which correspond to the maturities of corresponding government Treasury bills.

3. Who can issue CP?

Since CP is an unsecured promissory note, any company issuing CP must represent a good credit risk. CP issuers are typically household names and have a substantial net worth. CP is not for small companies. Investors must be willing to purchase the unsecured notes based on the company's reputation and a review of the company's financial position. Without a very strong reputation, dealers in CP ("placement agents") would not be able to successfully sell the product. In the US, almost all major Fortune 500 companies–

companies like Coca-Cola, Procter & Gamble, Citibank, etc. – issue CP.

#### 4. Why issue CP?

Large companies issue CP because:

- 1) It is less expensive than bank overdraft
- 2) It is relatively quick and easy to issue
- 3) It provides a measure of financial independence by permitting corporations to tap another source of credit.

#### Up Front Cost Savings:

##### No Commitment Fee

The principal reason for issuing CP, however, is that it can represent substantial saving over more traditional bank borrowing. Apart from interest savings, there are typically significant “upfront” savings. For example, in setting up a bank overdraft (O/D), there is typically a 1% commitment fee. On a \$5,000,000 O/D, the commitment fee represents \$50,000 – even if no funds are drawn down.

##### No Legal/Stamp Duty Fees

In addition, there are typically lawyers fees associated with an O/D. In addition to the lawyers fees associated with preparing a debenture agreement underlying an O/D, there is in East Africa a .5% stamp duty on bank O/D's. The legal and stamp duty will typically run 1% of the O/D amount. This will cost another \$50,000 to the borrower.

With CP, both the legal and stamp duty are absent with the possible exception of a legal review of the agreement between the placement agent and the borrower. In addition, the cost of issuing CP will also require some printing costs for the prospectuses and certificates.

##### Continued Savings – Nominal interest rate savings

Interest savings are the big savings for issuers of CP. CP is sold to institutional clients at an interest rate that is slightly above the prevailing Treasury Bill rate but is also below the prevailing overdraft rates. In other words, the interest rate paid on CP must be above the Treasury Bill rate of the same maturity because Treasury Bills are

inherently safer than private sector debt. The government, after all, can always pay its debts by printing up more money! Consequently, the prevailing Treasury Bill interest rate is the floor below which it does not make economic sense for an investor to purchase CP.

While Treasury Bill rates set the floor for pricing, the prevailing overdraft rates are the ceiling. In other words, the issuer of the CP wants to sell the CP at an interest rate which is less— hopefully, substantially less – than the rate his bank would charge him for O/D funds.

For example, if 91-day Treasury Bills were at 5% today then that would represent the floor for 91-day CP funds. The ceiling for most companies might be 10% representing the “all in” cost of O/D funds. Therefore, CP can be issued anywhere between 5% and 10% for 91-day money which results in the investor getting a better yield on his investment than T-bills and the issuing company’s interest expense being less than bank O/D.

If the CP were issued at 7% and the placement agent charged 1% for placing the paper, the total cost to the issuer would be 8%. This would represent a 2% savings over a 10% O/D. On a \$5,000,000 CP facility this would represent \$100,000 in annual nominal interest cost savings.

### Additional Compound Interest Savings

In addition to nominal interest savings, there is also potentially additional interest expense savings in the form of less compounded interest. Banks usually charge interest monthly on overdraft balances which means that if one does not pay off the balance entirely, you pay interest on interest 12 times per year. This means that the real (“effective”) cost of funds of a 10% overdraft is really 10.47%. On the other hand, if you only paid interest every 91 days as with 91-day CP, there are only 4 compounding periods per year. A 7% interest rate with only four compounding periods results in an effective cost of 7.19% - a savings of 3.28% or a net savings of .28% or \$14,000 in less compounded interest on a fully issued \$5M CP facility funded with 91-day paper.

## 5. Regulatory Environment

The absence of a credit rating agency is a common problem in many countries trying to establish a securities industry. In the case of Kenya, the Central Bank was initially tasked with oversight of the new CP market. The Central Bank limited its regulatory oversight to requiring that only companies listed on the local stock exchange could issue CP as it was felt that their financials were available to the institutional investors. Nevertheless, after a year, other non-listed corporations felt this was discriminatory and pressured the Ministry of Finance to allow non-listed companies to issue CP.

In time it became evident that CP would be better regulated by the Capital Markets Authority which regulated the stock and bond markets. The CMA decided that in light of the absence of a rating agency, any company meeting all the following requirements could issue CP:

- ? Companies that had made a profit in 2 of the prior 3 years
- ? Companies with paid up capital of at least \$1 million
- ? Companies whose debt equity ratio was less than 4:1
- ? Companies whose cash flow from operations divided by total debt (including the proposed CP issue) was at least 40%.

Any company wishing to issue CP, but not meeting these requirements could do so only with a 100% guarantee from a bank or insurance company meeting the above requirements.

On the other hand, some companies clearly do meet these minimum requirements, such as General Motors in Kenya, but do not wish to disclose their financials in a prospectus. As such, they have chosen to have a bank guarantee the issue so that no financials need be disclosed in a general prospectus.

Note that in the US, it is customary that the placement agent require that the issuing company have a standby Line of Credit (O/D) or Letter of Credit backing up the facility.

In Kenya, the CMA charges an annual fee of .25% of the facility amount to review and approve or disapprove a CP proposal. The

CMA also laid out the following requirements for a prospectus to accompany all issues.

## 6. Due Diligence and Prospectus Preparation

A prospectus must have the following sections:

- ? Legal disclaimer concerning the issuer's directors' knowledge and approval of the CP issue
- ? Term sheet indicating:
  - 1) Whether the issue is only in local currency or in US\$ or both
  - 2) Terms and conditions of the issue including the names of the Issuer and address, Arranger and address, Placement Agent and address, and Registrar and address. (A Receiving Bank and address is also specified.)
  - 3) Section showing the issuer's last 3 years audited accounts
  - 4) A ratio analysis including the 4 requirements noted above
  - 5) An Accountant's Report confirming that the ratio analysis had been calculated on audited figures
  - 6) A section on the issuer's history including a Statement on Risks confronting the company and industry.

## 7. Placing of Issue

The fees charged by the Placement Agent will vary depending on the perceived effort required to place the paper. If the issue is guaranteed by a quality bank, the issue will be easy to place and small placement fee will be charged, perhaps in the order of .5% per annum. If the issue is not a well known company, or a small issue, the placement agent will charge a higher fee, perhaps 1 to 1.5%.

The IPO launch is like any other bond or equity launch. Often the issue is quickly sold out on the day of launch. The mechanics of the issue are that deals are struck by telephone and written confirmations are faxed for signature and faxed back within 15 minutes. A certificate representing the promissory notes is issued within a week. This certificate is surrendered upon maturity.

Typically, an issuer will require the placement agent to issue the paper in various maturities, perhaps 25% in 30 days, 25% in 91 days, and

50% in 180 days depending on the issuers cash flow needs. Note that with CP the issuer determines what he needs. The issuer may require that all the CP be issued for 158 days or any other number of days less than 360. Typically, however, the initial issue is usually staggered as most issuers do not want all the paper coming due on a single date.

A tombstone is required to be issued in two newspapers within 30 days of the launch of any CP issue.

#### 8. Registrar Services

The administration of the CP issue requires that a Registrar be maintained for all the registered investors. This register will included all the necessary information regarding each transaction, such as name of investor, date and amount of purchase/maturity, nominal interest rate agreed, tax on interest earned to be withheld if appropriate, and number of certificate.

The register also serves to advise the placement agent when anote is maturing. If the issuer wants to keep a note outstanding, the placement agent will contact the investor a week or so before the note matures to determine if the investor wants to redeem the note or roll over the note. If the investor wants to redeem, the placement agent will find another investor to buy the equivalent amount. The first investor will be issued a redemption check and the new investor will hand over his check on the same day.

#### 9. Drawbacks to CP

There are, of course, drawbacks to any particular financial instrument. Being tied to Treasury Bills rates in a fluctuating market can be one such drawback. For example, in September 1997, when the International Monetary Fund (IMF) suspended its programme in Kenya, the 91-day T-Bill shot up from 18% to 23% in one week. In order to be competitive, a CP issuer, if he wanted to issue CP at that time, would have had to pay 23% plus a premium which probably would have been higher than his O/D rate. Of course, over time, banks' lending rates will always exceed T-bills (otherwise, you could borrow from banks and buy T-bills and earn a spread off the bank!)

The other drawback is that a company's financial condition can deteriorate rapidly. While CP issues are authorized on an annual basis, the financial condition of public companies, for example, is often available on a quarterly or semi-annual basis. Investors may demand significantly higher yields on newly issued CP if there is a marked decline in financial performance.

## 10. Summing Up

CP has found itself a permanent place in corporate finance. Most major corporations today in the US and Europe have both CP programs and bank overdraft facilities. A CP program can also be nursery ground for the subsequent issue of long term bonds and other securities. CP programs build a loyal clientele of investors and familiarize the issuer with securities financing.

This should not be an unwelcome development for more traditional banking institutions. As banks and other financial institutions come to realize that major corporations have earned themselves a reputation that permits them to raise funds directly from investors, banks and investment houses can play a leading role in becoming true financial partners with these clients.

Financial institutions that embrace these innovative financing, such as CP, can generate new sources of fee income whether as Arranger, Placement Agent, Registrar, Receiving Bank, or Guarantor.

# ***COMMERCIAL PAPER***

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THE BEGINNINGS OF A  
FIXED INCOME  
MARKET?

James R. Dry

## ***WHAT IS CP?***

- ✍ ST unsecured promissory notes issued by “blue chip” companies.
- ✍ Notes are redeemed or rolled
- ✍ Annual renewal of facility(Kenya).

# ***WHAT IS CP USED FOR? WHO CAN ISSUE?***

✍ Used for ST financing matching cash flow needs of corporation

✍ Initially, only companies listed on stock exchange (Kenya)

✍ No restrictions, but only well known companies (US)

## ***WHY ISSUE?***

1. Less Expensive
2. Quick and Easy
3. Measure of Financial Independence

# ***LESS EXPENSIVE***

## UP FRONT SAVINGS

- ✍ No commitment fee (for example,  
 $1\% \times \text{DH } 5,000,000 = \text{DH } 50,000$ )
- ✍ No legal fees/stamp duty (for example,  
 $1\% \times \text{DH } 5,000,000 = \text{DH } 50,000$ )

## ***INTEREST RATE SAVINGS***

✍ CP priced slightly above Treasury bill of same tenor (floor)

✍ CP also priced below prevailing O/D (ceiling)

For example, O/D = 10%

CP = 7% + 1% Fee

91-day T-bill = 5%

Savings = 2% x DH 5,000,000 = 100,000

# ***INTEREST SAVINGS (Cont.)***

## Compound Interest Savings

There is also less compounding.

- ✍ Effective cost of 10% O/D is 10.47% (12x)
- ✍ Effective cost of 7% CP is 7.19% (4x)

# ***REGULATORY ENVIRONMENT***

In absence of Credit Rating Authorities, regulatory authorities must step in. In Kenya, CMA established following min. requirements for issuance:

- ✍ Profit in 2 of last 3 years
- ✍ Paid up capital of \$1M
- ✍ Debt equity ratio less than 4:1
- ✍ Cash flow from operations/total debt  $>40\%$

## ***REGULATORY (Cont.)***

Without meeting requirements, CP only issued with 100% guarantee from bank or insurance company.

✍ This also appropriate for companies which do not want to disclose financials like GM

✍ Regulatory fee 0.25% (1/2 2<sup>nd</sup> year)

# ***PROSPECTUS OR INFORMATION MEMORANDUM***

IM must have:

1. Legal Notice

2. Term Sheet

3. Local currency,  
US\$, or both

4. Parties to the  
issue:

- Arranger

- Placement Agent

- Registrar

- Receiving Bank

5 Financials

6 Ration Analysis

7 Accountants  
Report

8 History and Risks

## ***PLACEMENT***

- ✍ Fees – Vary by size of issue, but...  
approx 0.5% - .75% for guaranteed issue  
and 1% - 1.5% for unguaranteed.
- ✍ IPO – Road show, launch, tombstone
- ✍ Adm – Telephone deals, written fax  
confirmations (w/in 15 min) – certificate  
in 1 week
- ✍ Issuance – Varies, but 25% 30 days..

# ***REGISTRAR SERVICES***

Registrar maintains:

- Investor name
- Date and amt purchased/maturity
- Nominal yield agreed
- Tax on interest to be w/held if appropriate
- Number of promissory note (certificate

Used by agent to contact 1 week prior to maturity

## ***DRAWBACKS***

- ✍ Tied to T-Bills which can change rapidly (Ex. in Sept 97 in Kenya when IMF w/drew, T-bill rose to 25% from 17% in 1 week but O/Ds still at 23%)
- ✍ Rapid deterioration of company's financial condition (CP issuers report results semi-annually)

## ***SUMMING UP***

✍ **In US and Europe, most major companies have CP and O/Ds**

✍ **CP programs nursery for LT bonds and other securities (builds clientele, familiarity with securities eg. Comcraft)**

✍ **Forward looking banks see new fee business as: Arranger, Placement Agent, Registrar, Receiving Bank, Guarantor.**

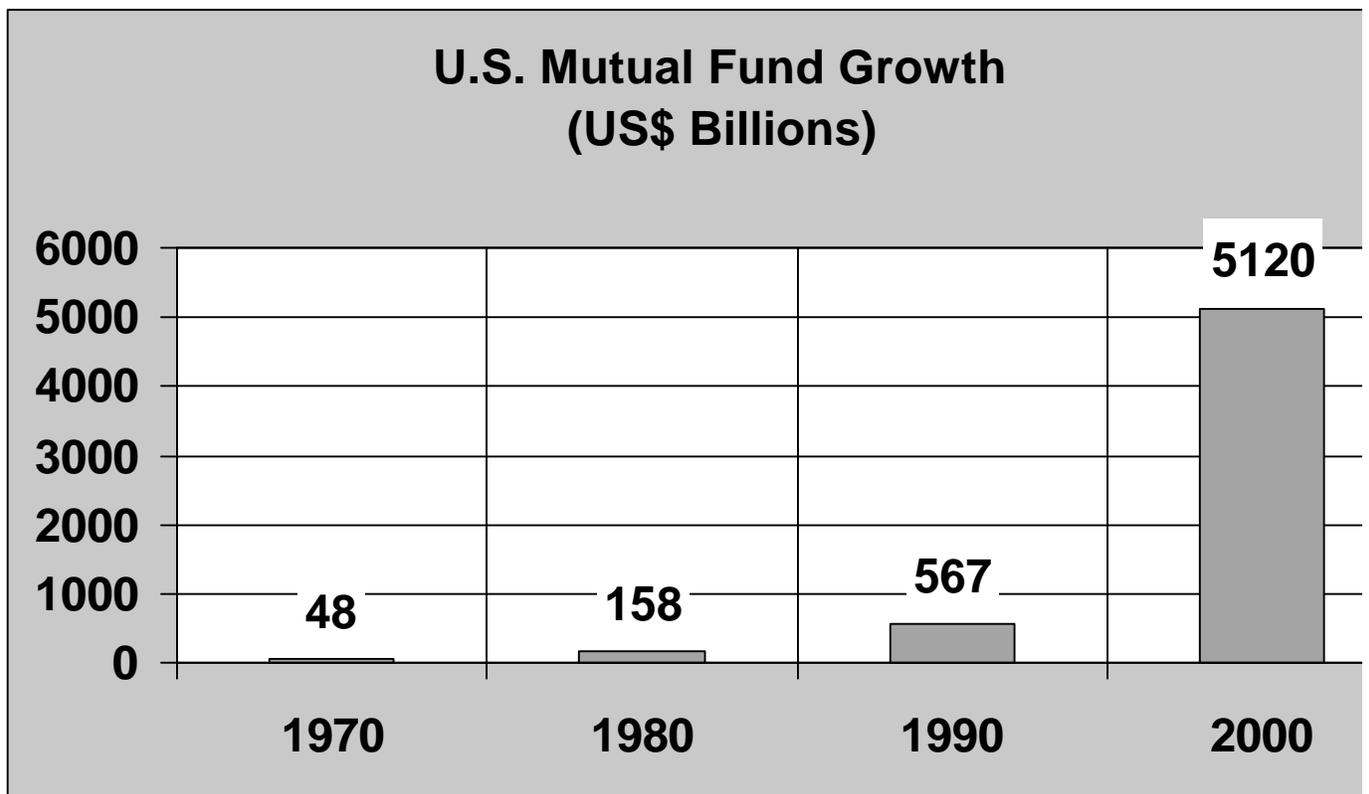
# *Mutual Funds*

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## *Smart Investing?*

James R. Dry

# *Growth of Mutual Funds*



ce: Investment Company Institute Fact Book (2001)  
(excludes money market funds)

# Growth of Mutual Funds in U.S

- 1970 \$48 Billion
- 1980 \$158 Billion
- 1990 \$568 Billion
- 2000 \$5.12 Trillion

(\$3 Trillion in actively managed funds with balance in bonds and hybrid funds)

Source: Investment Company Institute Fact Book (2000) Excludes money market funds

## *Why the growth?*

Why do over 50 million households in the US own mutual funds? Why are there 4,700 stock funds and 2,000 bond funds for sale to US investors?

### Traditional Answers

- 1) Reduced risk thru portfolio diversification
- 2) Professional Management
- 3) Reduced unit transaction costs

# *What is the Structure of Mutual Funds?*

## OPEN ENDED:

(Variable Capital & Not Listed)

- USA – Mutual Funds
- UK – Unit Investment Trusts
- France - SICAVs

## CLOSED ENDED:

(Fixed Capital & Listed)

- Traded
- ETF (Exchange Traded (Index) Fund)

## *On Shore vs. Off Shore?*

On Shore = U.S. SEC registered

Off Shore = Mirror funds registered in  
Luxemburg/Channel Islands/etc.

(for example, FT has 270 US funds on  
shore and 41 off shore funds)

- Usually most popular funds in US
- Other denominations
- Sometimes same managers

# Franklin Templeton Investment Funds

FR

Higher Risk/  
Higher Return

Templeton Latin America Fund  
Franklin Templeton Japan (Euro) Fund  
Franklin Templeton Japan (Yen) Fund  
Templeton Japan Fund

Templeton Korea Fund  
Templeton Thailand Fund  
Templeton China Fund  
Templeton Emerging Markets Fund  
Franklin US Equity Fund

Sector  
and  
Regional

Franklin European Growth Fund  
Franklin Mutual European Fund  
Franklin California Growth Fund  
Franklin US Smaller Companies Fund  
Templeton Asian Development Equity Fund  
Templeton Asian Growth Fund  
Templeton Eastern Europe Fund

Templeton Global Smaller Companies Fund  
Templeton European Fund  
Templeton EuroMarket Growth Fund  
Franklin Technology Fund  
Franklin Biotechnology Discovery Fund  
Franklin Aggressive Growth Fund

Global Equity

Franklin Global Growth Fund  
Franklin Mutual Beacon Fund  
Templeton Growth (Euro)

Templeton Global Growth Fund  
Templeton Global Growth (Euro) Fund  
Templeton Developed Markets Equity

Growth & Income

Franklin High Yield Fund  
High Yield (Euro) Fund  
EuroMarket Bond Fund  
Templeton Emerging Markets  
Bond Fund  
Templeton Emerging Markets Bond  
(Euro) Fund

Templeton Global Balanced Fund  
Franklin Income Fund

Bond & Fixed Income

Templeton Global Bond I  
Templeton Global Bond  
Templeton Global Inc  
Franklin US Governr

Reserve

Templeton USD Liquid  
Reserve Fund

Templeton Euro L  
Reserve F

Lower Risk/  
Lower Return

## *Types of Funds?*

### Actively Managed Funds

- Growth
- Momentum
- Value
- Geographic/Sector
- Index (Vanguard)

### Passively Managed Funds

Index/Listed

## Exchange Traded Index Funds

<u>Sponsor</u>	<u>Shares</u>	<u>Name</u>	<u>Index</u>	<u>Symbol</u>
State Street Global Advisors	S&P Depository Receipts	SPDRs	S&P 500	SPY
Vanguard Group	Vanguard Participation Equity Receipts	VIPERS	Total Stock Market Index	VTI
Bank of NY	QQQ	Cubes or Qs	Nasdaq 100	QQQ
State Street	Diamond Trust Series	Diamonds	Dow Jones Indust. Avg.	DIA
Barclays Global Investors	IShares	IShares	Russell 3000 S&P 500	IWV IVV
Merrill Lynch	Holding Co. Dep. Receipt	Holdings	Market 2000 (50 largest stocks in world)	MKH

## *More ETF Comparisons*

TRADITIONAL	ETFs
<ul style="list-style-type: none"> <li>• Shares issued and redeemed by amount bought and sold</li> </ul>	<ul style="list-style-type: none"> <li>• No shares issued – sponsor holds actual shares</li> </ul>
<ul style="list-style-type: none"> <li>• Cash to sponsors and shares to investors</li> </ul>	<ul style="list-style-type: none"> <li>• Trades simply transfer ownership</li> </ul>
<ul style="list-style-type: none"> <li>• Share prices valued at NPV one daily</li> </ul>	<ul style="list-style-type: none"> <li>• Share prices valued at NPV continuously</li> </ul>

# *Fees and Commissions*

## Disclosed Fees

Front End Load (sales charge)

This is a sales commission charged by over half of all actively managed funds.

} A

Management Fee (advice)

Administration Fee (service)

Distribution (12(b)1 marketing)

} 1.33%  
Average

# ***Fees and Commissions (cont.)***

## Undisclosed Fees

### Trading Costs

- In 2000, US mutual funds sold \$3.3 Trillion and bought \$3.5 Trillion at 4-5 cents per share and a bid/ask spread of 1-2% for the market maker

### Idle Cash

Liquidity ratio avg 6-10% for redemptions

### Taxes

Taxes are generated from capital gains sales

Source: Baer & Gans



## *A Shares & B shares?*

Retail:

A Shares: Front end 5% Trail .75%

B Shares: Front end 0% Trail 1.25%

but, if Redeem in Yr 1 → Front end 5%

if Redeem in Yr 2 → Front end 4%

Distributor: Typically receives:

80% of Load and 80% of Tr

## *Performance?*

- At end 2001, there were 1226 actively managed stock funds w/ a 5-year record and avg annual performance trailed S&P 500 by 1.9% per year (that is, 8.8% for funds and 10.7% for index)
- There were 623 actively managed stock funds with a 10 year history and annual performance trailed S&P 500 by 1.7%, that is, 11.2% for funds and 12.9% for index.

# *Investment Philosophies?*

## Value Investing

Fundamental analysis – buy (low) and hold – Warren Buffet (Phil Graham) and John Templeton

## Index Investing

No trading – Indexes hard to beat LT – fees and expenses “ankle weights”

## ***Warren Buffet. How does he do it***

- Avg 23.6% p.a. for 30 years
- 10 year history of 15% growth p.a.
- Avg 10 year P/E ratio
- (Wait to) Buy and hold – never sell!
- Philosophy – Stock prices always too high or too low – but eventually Retained Earnings reflected in price of stock
- Berkshire Hathaway is insurance co.

## ***More Performance Findings?***

In recent study of one large discount brokerage, the share position statements and trading activity of all 78,000 clients over a 6 year period found:

1. Individual investors significantly underperformed the market. Avg earnings of 78K clients trailed index by 1.5% per year.



## ***Performance (cont.)***

2. Investors trade a lot. Avg client turnover more than 75% per year.
3. Returns lowest for those who trade the most. Active traders trailed by 5%/yr, mostly due to transaction costs.
4. In follow-on study of men and women trading, the findings were:



## ***Performance (cont.)***

5. Both men and women underperformed market, but men by almost 1% more p.a.
6. Men traded nearly 50% more than women and single men 67% more than women

Researchers attributed this gender difference to men's overconfidence in their own stock picking abilities.

Source: Barber, Brad and Terrance Odean, "Trading is Hazardous to Your Wealth": The Common Investment Performance of Individual Investors" Journal of Finance 56:17

## *Rationale for Bonds?*

- Bonds are an essential source of LT capital w/o which, the standard of living in the US and elsewhere would be much lower. The finance everything from home mortgages to consumer goods to roads to sports stadiums.
  - For example, for business corporations they are an alternative to borrowing from banks and issuing stock
  - For the US Fed Reserve they are essential in implementing monetary policy (22 prim. Dealer)

## *Size of the Bond Market?*

- The US Bond market is \$18.5 Trillion which \$3.5 Trillion more than the US equity market (market cap of \$15 Trillion).
- The US Bond market is bigger source of capital than the banking system.
- In 2001 - \$3.2 Trillion in Bonds issued
- In 2001 - \$2.32 Billion in Investment Grade Bonds issued every business day!

**Source: Strategic Bond  
Investor by A. Crescenzi**

## *Loans vs. Bonds?*

General <u>Attributes</u>	<u>Loan</u>	<u>Bond</u>
Tenor:	1-5 yrs	1-30 yrs
Tradable:	No	Yes
Size:	Millions	Billions
Source:	Institution	Investors

## ***The Bond Indenture***

A contract between issuer & bondholders which spells out key characteristics of bond, f example:

- interest rate
- maturity date
- call and refunding provisions
- call protection period
- number of bonds sold
- collateral and/or sinking fund provisions

## ***Bond Indenture (cont.)***

- Indenture made out to a Corporate Trustee who monitors compliance with covenants (for example, corporate debt not to exceed 4x equity, no new debt issued, cash flow to exceed 1.5x debt service) and takes action if provisions are not met.
- Indenture summarized in Prospectus

## *Role of Arranger?*

The Arranger of a bond issue will:

- 1) Determine the financial needs of the client and structure and appropriate bond issue
- 2) Conduct the due diligence on the cc
- 3) Prepare the cash flow analysis
- 4) Draft the Prospectus and assist with approval from regulatory authorities

## *Arranger (cont.)*

5) W/ client, negotiate and determine:

- Fiscal Agent
- Registrar
- Placement agent(s)
- Lawyers
- Accountants
- Advertising, etc.

(Fee determined by 1) size of issue 2) creditworthiness 3) estimated effort. Typically 0.5% - 2% of issue.)



## *Role of Fiscal Agent?*

Fiscal Agent usually a bank of large financial institution (and often combined with Registrar which is responsible for:

- Receiving Subscription Amounts
- Calculating and paying interest and principal on bond on payment dates (that is, handling the bond amortization)
- Ensuring that all debt servicing properly handled

## *Role of Registrar/Accountants/etc.*

- Registrar responsible for maintaining the Register of Bondholders (bearer bonds not popular)
- Accountants will have to confirm financial statements in Prospectus and as directed by regulatory authorities
- Lawyers - Indenture and Legal Statement in Prospectus
- Depending on size of issue, and whether public or private issue, stock exchange, even managers, advertisers, printers, etc required.

## *Role of Placement Agent(s)?*

Placement Agent responsible for placing issu with investors.

Placement agreement may specify:

- Underwriting agreement
- Best Efforts
- All or nothing or subscription minimum

Placement may be public issue (listed) or private issue (placement agent may make market in bond)

## *The Prospectus*

- 1) Legal Notices
- 2) Term Sheet
- 3) Directors and Management
- 4) Company History
- 5) Risk (Forward Looking Statements)
- 6) Purpose of issue and Repayment
- 7) Indenture summary
- 8) Accountants Report / Lawyers Letter /  
Subscription Application

## ***How Bonds Traded?***

Bond market still not as understood as stock market, possibly because:

- No centralized marketplace. Trading is OTC and between broker-dealers.
- Dealers tend to specialize and prices vary among dealers (unlike stocks which are price to the penny)
- So many different bonds, difficult to find, buy, sell, price.

# ***Bond Pricing?***

## Yield to Maturity (YTM)

Discount rate which equates bond price with present value of all future interest and principal

(Eg. \$770.36 bond with 5% coupon and maturing in 10 years)

Calculator: NPV=-770.36, PMT=50, FV=1000, n= # of payments x number of years, ie, 10, solve for "i"

## Yield to Call/Coupon/Worst

Discount rate which equates price and Present value of cash flows to call (must make assumptions)

[Clean pricing vs Dirty pricing on confirmations]

## ***Internet Bond Trading ?***

The internet is beginning to change the way companies issue new bonds.

### **RECENT ISSUES**

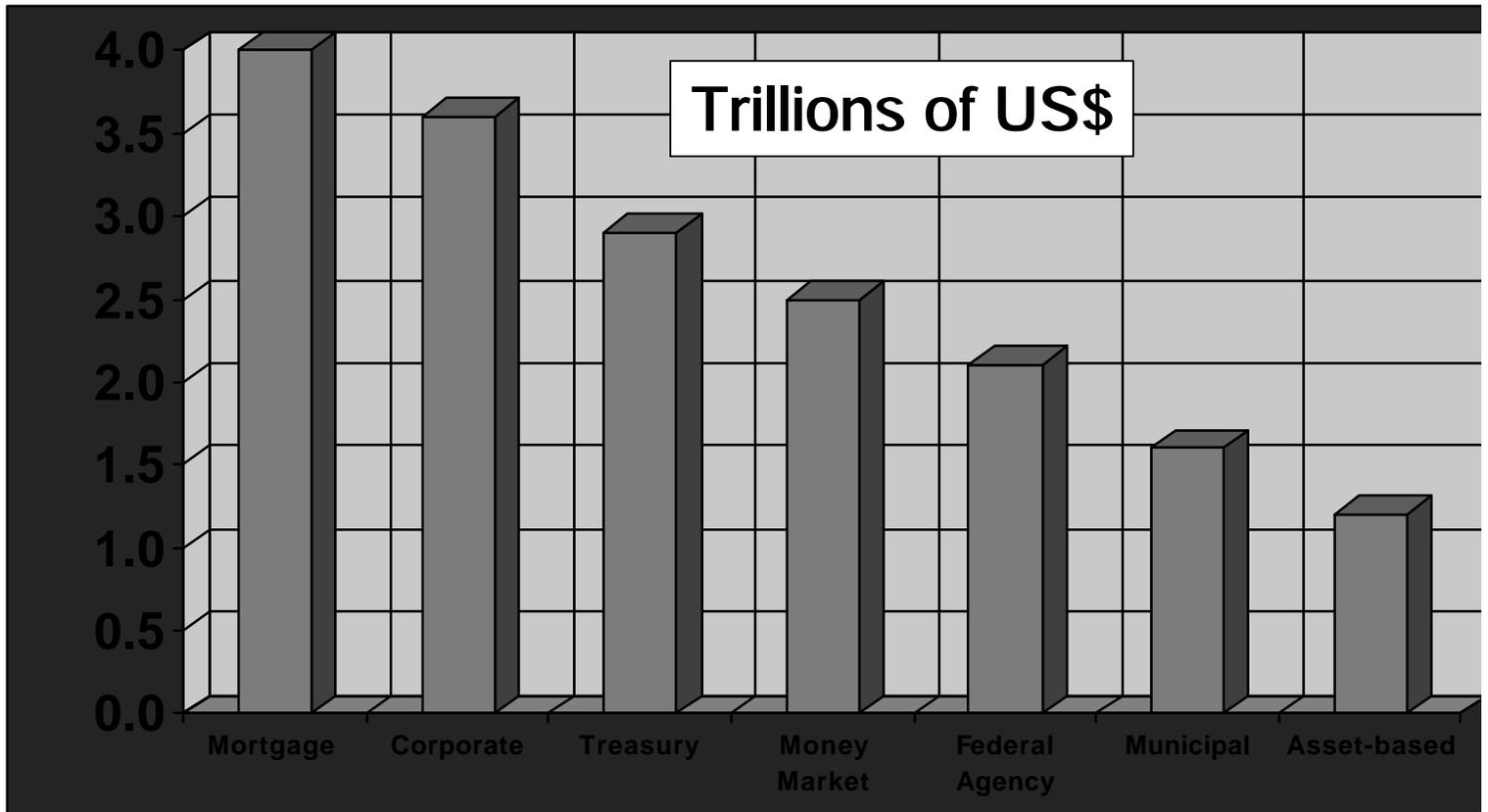
- a)Dow Chemical – 1<sup>st</sup> non-financial to sell bonds directly to investors selling \$300M 5-yr notes in Aug, 2000
- b)Ford Motor Co. – several large issues inc. \$1B in 3-yr notes in Jan, 2000
- c)Fannie Mae – sold \$5B in 3-yr notes (Feb,C



## **Advantages of on-line bond issuance and trading**

- 1) Increased price transparency (both on initial offer and secondary trading)
- 2) Reduced underwriting/arrangement costs
- 3) Wider distribution (more stable price)
- 4) Reduced sales and mkt'g costs (but professional sales team still essential)

# *Total US Bond Debt Outstanding*





# ***Mortgage Related Bonds***

## Largest issuers

Federal National Mortgage Association (Fannie Mae)

Government National Mortgage Association (Ginnie Mae)

Federal Home Loan Mortgage Association (Freddie Mac)

## Issuing Mortgage Backed Securities

(investors own pro-rata share in pool of securitized mortgage  
securitized – these pass throughs have prepayment risk &  
default risk)

## Collateralized Mortgage Obligations (CMOs)

Scheduled and non-scheduled payments paid on pre-determined priority.

# ***Corporate Bonds***

- Straight Corporate  
(Debentures vs Asset Backed)
- Convertible Bond
- Zero Coupon Bond
- Bondholders paid before stockholders  
event of bankruptcy/liquidation.

## ***U.S. Treasury Bonds***

- Full faith and credit of USG
- Most active and liquid
- **Bills** (6, 3, 1 month) auctioned – competitive and non-competitive bids – tail (diff. between avg yield and stopout yield) – TIPS (Treasury Inflation Protected Securities) linked to CPI (eg. If annual inflation 3%, for 1-yr bill at year end bond pays \$1030 in principal and interest at say 5% would be \$51.50 (ie.  $5\% \times 1030$ ))

## ***Treasuries (cont.)***

Notes – 1-12 years, but 10 yr called bo  
Bonds – 12+ years

- 40% of all Treasuries bought by non-L
- Used as benchmarks for pricing other bonds
- Fed's 22 primary dealers do \$200 Billic in Treasuries daily and trading with Fed desk plays role in Fed's monetary policy

## ***Municipal Bonds***

- Issued by state and local authorities for schools, hospitals, utilities, highways
- General Obligation (must have tax authority) and Revenue Bonds
- Interest exempt from federal taxes and for in-state purchasers exempt from state and local taxes (eg. 5% Taxable equiv. yield =  $5\% / (1 - .39\%) = 8.2\%$ )

## *What is Credit Enhancement?*

It is any arrangement which improves the creditworthiness of a debt obligation.

These arrangements typically take the form of a partial or whole guarantee to repay in the event of default the interest and/or principal of a debt obligation.

Credit enhancement often substitutes the financial strength of one institution for another.

## *Examples of Credit Enhancement*

- Fannie Mae's guarantee of its mortgage backed bonds
- Insurance companies guarantee of Municipal Bonds
- Kenyan bank guarantees of commercial paper

Why?? 1) Lower default risk 2) Lower interest cost 3) Improve credit rating 4) Move the money!

## *What is a DCA guarantee?*

- It is a USG guarantee of up to 50% of the principal of a debt obligation.
- It is a mission managed financial tool to mobilize local capital to fund sustainable development projects.
- It is a risk-sharing arrangement with (non-sovereign) partners.
- Encourages financial institutions to lend money that otherwise would not. It's use has a DEMONSTRATION effect.

## *What's underlying rationale for guarantees?*

Improve financial intermediation, that is mobilize local capital (donor funds not sufficient) to move into new areas

This poor intermediation shows up in:

- 1) collateral req'ts (sometimes 3/4x loan amt)
- 2) too much investment in ST liquid assets

(Money as store of wealth and has to be used to create new wealth (buildings built, minerals mined, employees hired, not end in itself!))

# Getting Specific: 4 DCA Tools

**Loan Guarantee** (Up to 50% guarantee – Lender and borrower identified – lump sum or multiple disbursements –e.g. \$25M bar loan to City of Johannesburg for w/w

**Portable Loan Guarantee**(Borrower identified – “shop” for lender – e.g. \$2M loan to Al Amana Microlender (mission cost \$20K for \$1M)

**Loan Portfolio Guarantee** (Unidentified borrowers)

**Bond Guarantee**

# **REAL ESTATE INVESTMENT**

## Securitization of Real Estate In the US

James R. Dry



# Legal Forms for Real Estate Investment

- 1) Real Estate Investment Trust (REIT)
  - a) Equity REIT**
  - b) Mortgage REIT (makes and holds loans secured by real estate)
- 2) Limited partnerships – public/private (Tax Reform Act '86 closed capital gain benefit)
- 3) C-Corp – (Traded - tax on net inc.)



## Legal Forms (cont.)

- 4) Real Estate Mutual Funds (60 of which 3 over \$1B)
  - open, closed, index (Vanguard)
  
- 5) Private companies

## **Real Estate Inv. Trust Act of 1960**

Enacted to allow individuals to participate in benefits of owning/financing commercial real estate

- 1) No Double Taxation – REIT can deduct from taxable income all dividends, but must pay out 90% of net income
- 2) At least 75% assets invested in R.E

## **REIT Act of 1960**

- 3) Must derive 75% of gross income from rents, mortgages, cash or gov't securities
- 4) At least 100 shareholders and less than 50% concentration in 5 or less shareholders

### **TAX REFORM ACT OF '86**

Permitted to bring in-house: acq. and sale of property, mgt, leasing, and develop.

# REITs as of 2001

Total market capitalization (# shares x price) in equity REIT was \$137B in 154 publicly traded REITs in:

- Apartment Buildings
- Shopping Centers
- Regional Malls
- Offices/Industrial
- Health Care
- Self-Storage
- Lodging/Resorts
- Manufactured Housin
- Specialty ( golf/theate
- Self Standing

# Valuation Measures of REITs

- 1) Earnings – P/E ratio not relevant, so this often revised to P/FFO (funds from operations) ratio as follows:

Revenues minus:

-  Operating Expenses
-  Depreciation and Amortization
-  Interest Expense
-  G&A = Net Income

## Performance Measures (cont.)

Net Income minus:

~~✍~~ Profit from RE sales

plus:

~~✍~~ RE depreciation = FFO

2) Asset Value – NAV, but difficult to determine (Book value at historic cost)

## **WHY REITS?**

- 1) Arbitrage – Capture spread of RE asset prices on public and private markets thru IPO and new issues (when REIT NAVs below private market, stock repurchase (and go private. Note: the 1993/4 REIT boom coincided with high REIT NAV premiums)



## WHY REITS? (cont.)

2) Tax advantage – no double taxation  
(Private companies could take on more debt for interest expense, but risky.)

3) Access to Capital

a) not a mercy of “stop and go” private lenders (avoid boom/bust lending cycle)

b) equity is permanent capital

c) w/ equity, can issue more debt

## WHY REITS?

- 4) Easier to manage business (e.g. stock bonuses, options)
- 5) Liquidity and Estate Planning (e.g. cash out on retirement, death taxes)

Disadvantages – Public Scrutiny – analysts, shareholders, CMA

## SSIC Portfolio Management Training Program

## Table of Contents

I.	Introduction to Credit Analysis.....	3
II.	Introduction to Equity Valuation.....	9
III.	Introduction to Fixed Income Bonds.....	9
IV.	Introduction to Hedge Funds .....	9
V.	Introduction to Venture Capital .....	9

## **I. Introduction to Credit Analysis**

- A. *The purpose of this session is to evaluate a borrower's ability to repay a loan from three sources:*
  - i. Cash flow—first priority
  - ii. Collateral—clearly, a second priority
  - iii. Personal Guarantee—a last resort
- B. *We will begin our evaluation by looking at qualitative factors a lender would consider that focuses on the borrower's willingness to repay. After that, we will examine quantitative factors that focus on the borrower's ability to repay.*
- C. *An underlying concept of all lending practices is the matching principle. This principle says that short-term loans should be used to finance short-term needs and long-term loans should be used to finance long-term needs. More technically, the principle says that the duration of the loan should match the duration of the asset it is financing.*
- D. *The analyst should be alert to the risk of making a loan by assessing the quality of management, soundness of the business, sensitivity to economic conditions, and the borrower's relationship with other creditors.*

### *Fundamental Credit Issues*

- A. *The purpose of credit analysis is to*
  - i. Identify the lender's probability of loss without being overly conservative. The analyst must avoid the axiom that the only time borrowers get financing is when they don't need it.
  - ii. Restructure a weak loan application when the borrower is strong but does not fully understand the true borrowing needs

*B. Errors in judgment by credit analyst occur when*

iii. Extending credit to unworthy customers

iv. Denying credit to worth customers

*C. Character of borrower—honesty, integrity, and work ethic of borrower. Look for prior loan problems or defaults and relations with suppliers and customers.*

*D. Quality of data—choices of accounting methods that require judgments or changes in accounting principles, and non-operating income, gains, and losses.*

*E. Use of loan proceeds—often, a borrower is short of cash but cannot identify why.*

*F. Loan amount*

v. In many cases, the borrower does not have a clear understanding of how much external financing is needed relative to internally available funds.

vi. With term loans, the amount can be determined via pro forma analysis—projections of cash flows

vii. Lender should not only estimate borrower's need for today, but also future needs. Lending only a portion of needed funds can result in funding an incomplete project that generates no cash flows and causes trouble for any repayment.

viii. The required loan amount is a function of the initial cash deficiency and the pattern of future cash flows

*G. Source and timing of repayment--Lenders typically provide two types of loans*

ix. Short-term, seasonal working capital loans repaid from the liquidation of receivables or reductions in inventory

- 1) The analyst must determine whether the loan is to finance short-term seasonal working capital needs or longer-term permanent working needs. A lender may make the loan thinking it is seasonal whereas in reality it is longer term. This can lead to problems with repayment.
  - 2) A way to avoid this mistake is for the analyst to have a clear understanding of the underlying collateral of the loan.
- x. Term loans, capital expenditures needed to maintain the existing fixed asset base repaid out of cash flows from operations that include earnings and noncash charges in excess of net working capital needs
- 1) Term loans should be made for permanent increases in working capital and asset acquisition with an economic life beyond one year. A common mistake is to focus more on collateral than on cash flow.
  - 2) New debt issues and new equity issues may be used to repay term loans but the lender should not count on these alternatives as capital market conditions may not permit issuance of new securities.
  - 3) The source of repayment a term loan will determine the risk of the loan. The general rule is not to count on the acquired asset or underlying collateral as the primary source of repayment.

Speculative asset purchases and debt substitutions should be avoided. The analyst must be clear on the purpose of the loan in order to understand the source of repayment.

*H. Collateral—lenders can lower the risk of loss by requiring backup support beyond normal cash flow. Such collateral must exhibit three features*

xi. Its value should exceed the outstanding principal of the loan

xii. The lender should be able to easily take possession of collateral and have a ready market for sale

xiii. A lender must be able to clearly mark collateral as its own

xiv. Comments on collateral: In general, a loan should not be approved on the basis of collateral alone, but when collateral is part of the loan package,

1) Lenders should periodically examine the quality of the collateral to determine whether it truly exists or has deteriorated over time

2) Lender should reevaluate the borrower's character by the nature of the business and collateral

3) Liquidating collateral is clearly a second best source of repayment for three reasons

*a. Significant transaction costs associated with foreclosure*

*b. Bankruptcy laws allow borrowers to retain possession of the collateral long after default*

*c. When lender takes possession, it deprives borrower ability to salvage company*

*d. When physical collateral is not readily available, the lender often looks for personal guarantees or by imposing loan covenants that restrict the borrower's ability to make poor decisions that impact future cash flows.*

*Overview of the Loan-Management Process--Before analyzing financial data, the analyst should perform the following evaluation:*

*A. Conduct an overview of the loan management process—before analyzing financial data, the analyst should follow a three-step discipline:*

- i. Step one—gather background information on the firm's operations including
  - 4) Specific characteristics of the business, intensity of industry competition, and the borrower's competitive position in the industry
  - 5) Management character and quality
  - 6) Relevant historical developments and recent trends
- ii. Step two—write a brief business and industry outlook report including
  - 7) Historical sales growth
  - 8) Relationship between industry sales and the business cycle.
- iii. Step three—recognize the nature of the borrower's loan request and the quality of the financial data provided

*B. Analyze financial data using common size and financial ratio techniques—I will illustrate important concepts using Copley Industries example (see attached)*

- i. Balance sheet—see attachment
- ii. Income statement—see attachment
- iii. Statement of changes reconciled to cash
- iv. Most analysts differentiate between at least four categories of ratios—see attachment

- 9) Liquidity
- 10) Activity
- 11) Leverage
- 12) Profitability

*C. Analysis of Cash flow (see attached)—bank regulators require banks to support credit decisions with cash flow information for each borrower. Cash flow estimates are subsequently compared to principal and interest payments and discretionary cash expenditures to assess a firm's borrowing capacity and financial strength. The key element is how much cash flow a firm generates from its normal business activity (cash flow from operations). Because the accrual method of accounting does not report the impact of cash inflows and outflows directly in either the balance sheet or the income statement of an entity, U.S. corporations are required to prepare a Statement of Cash Flows as one of their basic financial statements. This cash flow information provides users of the financial statements with a basis of assessing prospective cash flows in three categories: operating cash flows, investing cash flows, and financing cash flows.*

- 1) The statement of cash flows provides information about a firm's ability to generate cash flows from operations and the cash consequences of investing and financing decisions. It explains the change in cash and cash equivalents during the year.
- 2) Cash flows from operations (CFO) measure the amount of cash generated or used by an entity as a result of its production and sale of goods and services.
- 3) Cash flows from investing activities (CFI) report cash outflows used for investments (property, plant and equipment, investments in debt and equity instruments of

other entities) and cash inflows from the sale or disposal of those items.

- 4) Cash flows from financing activities (CFF) include cash inflows from financing transactions (issuance of bonds or stock) and cash outflows to service those items (repayments of debt, payment of dividends on stock, purchase of treasury stock).
- 5) Under SFAS 95, interest and dividend revenue (cash inflows) and interest expense (cash outflow) are considered operating activities, but dividends paid (cash outflow) are considered financing activities. All income taxes are considered operating activities.
- 6) SFAS 95 permits firms to report cash flows using either the direct method or the indirect method.

*a. Under the indirect method, CFO is determined by adjusting net income (accrual basis) for noncash revenues and expenses, nonoperating items included in net income, and noncash changes in operating assets and liabilities.*

*b. The direct method provides more detailed information on the sources of cash inflows and outflows from operating activities. (CFI and CFF are determined the same way under either the direct or indirect method but the difference in the two methods is in the calculation and presentation of CFO only.)*

*c. Although the direct method provides more useful information to an analyst, most firms*

*use the indirect method to compute CFO.*

7) An analysis of changes in the balance of assets and liabilities can be summarized as follows:

*a. Increases (decreases) in assets represent net cash outflows (inflows).*

*b. Increases (decreases) in liabilities represent net cash inflows (outflows).*

ii. Operations section and two important ratios

1) Cash flow from operations divided by the sum of dividends paid and past period's current maturities of longterm debt (CMLTD)

2) Cash flow from operations divided by the same two terms plus short-term debt outstanding at the beginning of the year

iii. Investments section

iv. Financing section

v. Cash section

*D. Projection and analysis of borrower's financial condition—Pro forma assumptions*

i. Calculation of sustainable growth for comparing to borrower's growth assumption: ROE times retention rate

1) too much actual growth versus sustainable growth

2) too little actual growth versus sustainable growth

ii. Decomposition of ROE

1) efficient use of assets

2) control of costs

- 3) dividend policy
  - 4) earnings retention policy
  - 5) impact on capital structure
- iii. Calculation of pro forma “percent of sales” to determine External Funds Needed (EFN)—see attached

*E. Predicting Bankruptcy*

- i. Altman’s Z-score, which was originally designed for manufacturing firms:  $Z = 1.2 \times (\text{Working Capital}/\text{Total Assets}) + 1.4 \times (\text{Retained Earnings}/\text{Total Assets}) + 3.3 \times (\text{EBIT}/\text{Total Assets}) + 0.6 \times (\text{Market Value of Equity}/\text{Book Value of Debt}) + 1.0 \times (\text{Sales}/\text{Total Assets})$
- ii. A Z-score greater than 2.99 clearly falls into the “non bankrupt area” and a Z-score less than 1.81 are all in the “bankrupt area”. Z-scores below 2.99 and above 1.81 are “gray area” scores.
- iii. Other bankruptcy models include variations of Altman’s Z score and the ZETA Model. Please use these models with caution. If you wish to use one of these models, I suggest testing it using actual bankruptcy data first.
- iv. The SSIC has a proprietary Risk Rating methodology as shown on the next two pages.

**Comparative Balance Sheet for Copley Industries, 1997-1998**

	1997		Percentage Change	1998		Peer Group Ratios
	in \$1,000	% of Total		in \$1,000	% of Total	
<b>Assets</b>						
Cash and marketable securities	85	8.1%	5.9%	90	8.2%	5.5%
Accounts receivable	141	13.4%	18.4%	167	15.2%	18.2%
Inventory	306	29.1%	-3.6%	295	26.8%	29.3%
Prepaid expenses	22	2.1%	-18.2%	18	1.6%	
Current assets	<u>554</u>	52.8%	2.9%	<u>570</u>	51.8%	53.0%
Gross fixed assets	575	54.8%	12.2%	645	58.6%	
less: accumulated depreciation	<u>115</u>	11.0%	39.1%	<u>160</u>	14.5%	
Net fixed assets	<u>460</u>	43.8%	5.4%	<u>485</u>	44.1%	38.2%
Long term investments	<u>36</u>	3.4%	25.0%	<u>45</u>	4.1%	
Total Assets	<u>1050</u>	100.0%	4.8%	<u>1100</u>	100.0%	100.0%
<b>Liabilities &amp; Equity</b>						
Notes payable - bank	50	4.8%	40.0%	70	6.4%	6.0%
Accounts payable	99	9.4%	7.1%	106	9.6%	11.2%
Accrued expenses	15	1.4%	113.3%	32	2.9%	
Income tax payable	6	0.6%	100.0%	12	1.1%	1.7%
Current maturity - LTD	<u>35</u>	3.3%	14.3%	<u>40</u>	3.6%	3.6%
Current liabilities	<u>205</u>	19.5%	26.8%	<u>260</u>	23.6%	27.5%
Long term debt (LTD)	<u>280</u>	26.7%	-14.3%	<u>240</u>	21.8%	22.8%
Total liabilities	<u>485</u>	46.2%	3.1%	<u>500</u>	45.5%	57.5%
Common stock - par	325	31.0%	0.0%	325	29.5%	
Retained earnings	240	22.9%	14.6%	275	25.0%	
Stockholder's equity	<u>565</u>	53.8%	6.2%	<u>600</u>	54.5%	42.5%
Total liabilities & equity	<u>1050</u>	100.0%	4.8%	<u>1100</u>	100.0%	100.0%

Note: Figures in thousands of dollars; LTD refers to long term debt

**Comparative Income Statement for Copley Industries, 1997-1998**

	1997		Percentage	1998		Peer Group
	in \$1,000	% of Total	Change	in \$1,000	% of Total	Ratios
<b>NET SALES</b>	2400	100.0%	16.67%	2800	100.0%	100.0%
Cost of goods sold	2050	85.4%	16.10%	2380	85.0%	82.2%
Gross profit	350	14.6%	20.00%	420	15.0%	17.8%
Selling expenses	195	8.1%	7.69%	210	7.5%	
Depreciation & amortization	42	1.8%	21.43%	51	1.8%	
Other operating expenses	0	0.0%	na	40	1.4%	
Total operating expenses	237	9.9%	27.00%	301	10.8%	12.5%
Operating profit	113	4.7%	5.31%	119	4.3%	5.3%
Interest expense	38	1.6%	-10.53%	34	1.2%	
All other expenses	7	0.3%	71.43%	12	0.4%	
All other income	9	0.4%	22.22%	11	0.4%	
Total all other expenses/(income)	36	1.5%	-2.78%	35	1.3%	1.4%
Profit before taxes	77	3.2%	9.09%	84	3.0%	3.9%
Income taxes	25	1.0%	16.00%	29	1.0%	
<b>NET INCOME</b>	52	2.2%	5.77%	55	2.0%	
Dividends	15	0.6%	33.33%	20	0.7%	
change in Retained earnings	37	1.5%	-5.41%	35	1.3%	

Note: Lease payments are included in other operating expenses and were \$2,200 in 1998.

## Calculation of Financial Ratios

### Liquidity Ratios

Current Ratio = Current Assets/Current Liabilities

Quick Ratio = (Cash + Accounts Receivable)/Current Liabilities

Accounts Receivable Aging Schedule: a comparison of the dollar amount and percentage of total receivables outstanding across the number of days they have been outstanding (less than 30, 31 - 60, etc.)

### Activity Ratios

Days Cash = Cash/Average daily sales

Days Inventory Outstanding = Inventory/Average daily COGS

Inventory Turnover = 365/Days inventory

Accounts receivable collection period (Days A/R) = Accounts receivables/Average daily sales

Accounts receivable turnover = 365/Days A/R

Days cash-to-cash asset cycle = Days cash + days accounts receivables outstanding + days inventory outstanding

Days accounts payable outstanding = Accounts payable/Average daily payables  
= Accounts payable/[(COGS + Inventory)/365]

Sales to net fixed assets = Sales/Net fixed assets

### Leverage Ratios

Debt to tangible net worth = Total liabilities/Net worth

Times interest earned = EBIT/Interest expense

EBIT = earnings before taxes + interest expense

Fixed charge coverage = (EBIT + lease payments)/(interest expense + lease payments)

Net fixed assets to tangible net worth = Net fixed assets/Tangible net worth

Dividend payout = Dividends paid/Net profit

### Profitability Ratios

Return on Equity (ROE) = Net income/Total equity

Profit before taxes to net worth = Profit before taxes/Tangible net worth

Return on average net worth = Net income/Tangible net worth

Return on Assets (ROA) = Net income/Total Assets

Profit before taxes to total assets = Profit before taxes/Total assets

Asset utilization (or asset turnover) = Sales/Total assets

Profit margin (PM) = Net income/Sales

Sales growth = Change in sales/Last period's sales

Income taxes to profit before taxes = Reported income taxes/Profit before taxes

<b>CASH BASED INCOME STATEMENT</b>	1998 \$ 1,000	<b>Cash Flow Impact</b>	
<b>Net Sales</b>	2,800	Source	Revenue
Change in accounts receivable	<u>(26)</u>	Use	Asset increase
Cash receipts from sales	<u>2,774</u>		
Cost of goods sold	<u>(2,380)</u>	Use	Expense
Change in inventory	11	Source	Asset increase
Change in accounts payable	7	Source	Liability increase
Cash purchases	<u>(2,362)</u>		
Cash margin	<u>412</u>		
Total operating expenses	<u>(301)</u>	Use	Expense
Depreciation & amortization	51	Source	Noncash expense
Change in prepaid expenses	4	Source	Asset decrease
Change in accrued expenses	17	Source	Liability increase
Cash operating expenses	<u>(229)</u>		
Cash operating profit	183		
All other expenses & income (net)	<u>(1)</u>	Use	Expense
Cash before interest & taxes	<u>182</u>		
Interest expense	<u>(34)</u>	Use	Expense
Income taxes reported	<u>(29)</u>	Use	Expense
Change in income tax payable	6	Source	Liability increase
Change in other current assets and liabilities	<u>0</u>		
Cash flow from operations (CFO)	<u>125</u>		
Capital exp. And leasehold improvements	<u>(76)</u>	Use	Asset increase
Change in long term investments	<u>(9)</u>	Use	Asset increase
Change in other noncurrent assets	<u>0</u>		
<b>Cash used for investments</b>	<u><b>(85)</b></u>		
Payment for last period's CMLTD	<u>(35)</u>	Use	Payment for financing
Dividends paid (DIV)	<u>(20)</u>	Use	Payment for financing
<b>Payments for financing</b>	<u><b>(55)</b></u>		
Cash before external financing	<u>(15)</u>		
Change in short term bank debt	20	Source	Liability increase
Change in LT debt + end of period CMLTD	0		
Change in stock & surplus	0		
Change in other noncurrent liabilities	0		
<b>External financing</b>	<b>20</b>		
<b>Change in cash &amp; mktbl. Securities</b>	<b>5</b>		

**Borrowing Base For Copley Industries (1998)**  
**(estimate of available collateral on a company's current assets)**

			<u>Comments</u>
Accounts Receivables	\$ 167	→	From Balance Sheet (1998)
Less: accounts over 60 days	\$ (17)	→	Assumed figure
Subtotal	<u>\$ 150</u>	→	A/R less accounts over 60 days
Total eligible @ 70%	<u>\$ 105</u>	→	Total eligible for A/R
Inventory	\$ 295	→	From Balance Sheet (1998)
Less: accounts payable	\$ 106	→	From Balance Sheet (1998)
Subtotal	<u>\$ 401</u>	→	Inventory - A/P
Total eligible @ 50%	<u>\$ 201</u>	→	Total eligible for A/P
Total debt (less LTD secured by real estate)	<u>\$ (70)</u>	→	NP to bank (see Bal Sheet, 1998)
Excess (Deficit)	<u><u>\$ 236</u></u>	→	Amount available for borrowing

**Notes:**

1. Asset-based lending: continuously changing collateral values;
2. In this case Accounts Receivables and Inventory;
3. Banks will not consider A/R that has elapsed over a certain period of time. This is arbitrary and in this case is 60 days. (30, 60 & 90 are commonly used).
4. 70% is based on bank's experience, knowledge of client, industry etc.
5. Inventory can be based on Finished Goods or WIP depending on type of goods. Again this is arbitrary.
6. A/P taken out of Inventory due to trade creditors having higher claim than bank.
7. 50 % is another arbitrary figure that bank decides on.
8. Total debt is made up of amount of collateral debt outstanding.
9. Excess is amount firm is can borrow or that the bank is willing to lend them.
10. If (Deficit), bank will require firm to pay up this amount before granting credit.

Pro Forma Income Statement Using Percent of Sales

Projected Growth in Sales from 1998 to 1999 =

10%

	1998		1999	
	in \$1,000	% of Total		Projected
<b>NET SALES</b>	\$ 2,800.0	100.0%	\$	3,080
Cost of goods sold	\$ 2,380.0	85.0%	\$	2,618
Gross profit	\$ 420.0	15.0%	\$	462
Selling expenses	\$ 210.0	7.5%	\$	231
Depr & amort	\$ 51.0	1.8%	\$	56
Other opn exp	\$ 40.0	1.4%	\$	44
Total opn exp	\$ 301.0	10.8%	\$	331
<i>Operating profit</i>	\$ 119.0	4.3%	\$	131
Interest expense	\$ 34.0	1.2%	\$	37
All other expenses	\$ 12.0	0.4%	\$	13
All other income	\$ 11.0	0.4%	\$	12
Total all other	\$ 35.0	1.3%	\$	39
<i>Profit before tax</i>	\$ 84.0	3.0%	\$	92
Income taxes	\$ 29.0	1.0%	\$	32
<b>NET INCOME</b>	\$ 55.0	2.0%	\$	61
Dividends	\$ 20.0	0.7%	\$	20
change in RE	\$ 35.0	1.3%	\$	41

Notes:

1. Lease payments included in other operating expenses = \$2,200 in 1998.
2. Dividends constant

Pro Forma Balance Sheet Using Percent of Sales

Projected Growth in Sales from 1998 to 1999 = 10%  
 Projected Sales 1999 = \$ 3,080

	1998		1999		
	in \$1,000	% of Sales	Projected		Comments
<b>Assets</b>					
Cash and marketable securities	\$ 90	3.2%	\$ 99		
Accounts receivable	\$ 167	6.0%	\$ 184		
Inventory	\$ 295	10.5%	\$ 325		
Prepaid expenses	\$ 18	0.6%	\$ 20		
Current assets	<u>\$ 570</u>	20.4%	<u>\$ 627</u>		
Gross fixed assets	\$ 645	23.0%	\$ 710		
less: accumulated depreciation	\$ 160	5.7%	\$ 176		
Net fixed assets	<u>\$ 485</u>	17.3%	<u>\$ 534</u>		
Long term investments	\$ 45	1.6%	\$ 50		
Total Assets	<u><u>\$ 1,100</u></u>	39.3%	<u><u>\$ 1,210</u></u>		
<b>Liabilities &amp; Equity</b>					
Notes payable - bank	\$ 70	na	na		(EFN)
Accounts payable	\$ 106	3.8%	\$ 117		
Accrued expenses	\$ 32	1.1%	\$ 35		
Income tax payable	\$ 12	0.4%	\$ 13		
Current maturity - LTD	\$ 40	na	\$ 45		(inc by \$5)
Current liabilities	<u>\$ 260</u>	na	<u>\$ 210</u>		
Long term debt (LTD)	\$ 240	na	\$ 240		(no change)
Total liabilities	<u>\$ 500</u>	na	<u>\$ 450</u>		
Common stock - par	\$ 325	na	\$ 325		(no change)
Retained earnings	\$ 275	na	\$ 316		
Stockholder's equity	<u>\$ 600</u>	na	<u>\$ 641</u>		
Total liabilities & equity	<u><u>\$ 1,100</u></u>	na	<u><u>\$ 1,091</u></u>		

(EFN) External Funds Needed = \$ 120

Category Weight	Risk Ratings	1	2	3	4	5
	<b>Financial Factors</b>					
<b>1</b>	<b>Funded Debt to EBITDA</b>	<1.0 time	1-2 times	2-3 times	>3 times	>3 times
<b>1.25</b>	<b>Debt Service Coverage</b>	Top 10% of industry peers & >2.0 times	Top quartile of industry peers & 1.5 to 2.0 times	No lower than top 50% of industry peers & 1.25 to 1.5 times	Coverage. > 1.0 times last 12 months	Coverage 1.0 times 12 month
<b>1.5</b>	<b>Consistency of Cash Flow Coverage</b>	Top 10% of industry peers & >2 times over >4 years	Top quartile of industry peers & 1.5 times over >2 years	No lower than top 50% of industry peers & 1.25 to 1.5 times over 1 year- previously volatile	Coverage. > 1.0 times last 12 months but previously volatile	Coverage for last 12 months and previously volatile
<b>1.75</b>	<b>Debt to Total Capital</b>	Top 10% of industry peers	Top quartile of industry peers	No lower than top 50% of industry peers	Bottom Quartile of industry peers	Bottom Quartile of industry peers
<b>2.0</b>	<b>Current Ratio</b>	Top 10% of industry peers & >2 to 1	Top quartile of industry peers & from 1.5 to 2.0	No lower than top 50% of industry peers & from 1.0 to 1.5	Below industry peers mean and below 1.0	Below industry peers third quartile and below
<b>2.5</b>	<b>Quick Ratio</b>	Top 10% of industry peers & >1 to 1	Top quartile of industry peers & .75 to 1.0	No lower than top 50% of industry peers & .5 to .75	Below industry peers mean and below .5	Below industry peers third quartile and below

	<b>Non-Financial Factors</b>					
<b>1</b>	<b>Bank Market Acceptance of Paper</b>	Readily	Acceptance within framework of market constraints	Very Challenging acceptance which must be there first for a new borrower	Not possible to achieve market acceptance without govt. guarantor	Not accep to market
<b>1.25</b>	<b>Management</b>	Managem nt Proven and delivery of proj>5 years	Management delivery of proj3-5 years	Management Has delivered on recent LTM results Vs projections. Past discrepancies in proj vs. results have rational explanations	Management has fallen short of projections over LTM	Managen has consisten not met projectior

<b>Category Weight</b>	<b>Risk Ratings</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>1.5</b>	<b>Loan and Credit Performance</b>	As Agreed plus within terms on trade	As Agreed plus within terms on trade	As Agreed plus within terms on trade	As agreed but outside of terms on trade	Potentially past due 30 days and 0 terms on tr
<b>1.75</b>	<b>Management Depth</b>	Five year proven with depth and no dependence on one management team member	Depth and diversity with some potential dependence on individual members	Some lack of depth in management team	Some Management turnover evident with inexperience of management	Potential character deficiency managemen team &/or turnover without pro managemen replaceme
<b>2.0</b>	<b>Operational Diversity and Position within industry</b>	Operational leadership within the leadership as defined in Porter Model Framework	Plant, product, customer, & supplier diversity.	Firm may be “stuck in the middle” from a Porter Model perspective	Concentrations evident which have impacted performance	Concentra evident w have imp: performa
<b>2.5</b>	<b>Industry Volatility</b>	Stable mature and non-cyclical industry	Stable industry with some cyclical	Cyclical industry	Start up industry with no proven cash flows or very high cyclical	Start up industry w proven cas flows or v high cyclic

## II. Introduction to Equity Valuation

(Note: The Dividend Discount Model is an excellent starting point for understanding fundamental factors driving the value of an equity security. It also provides a good opportunity to use ratio analysis)

### *Dividend Discount Model*

a. *The theoretical basis of equity analysis is the Dividend Discount Model (DDM). Consequently, you should thoroughly understand how this model works, its strengths and its weaknesses. The model is:*

b.  $P = D1 / (k - g)$  *Equation (1)*

c. *where P = intrinsic price, D1 = dividend next period, k = required rate of return and g = growth rate of dividends.*

### *Summary of Important Points:*

A. *Equation (1) represents the present value of an infinite stream of dividends growing at a constant rate (g) and discounted at the required rate of return (k). Equation (1) is a single-stage growth model because the growth rate is assumed not to change from now through eternity. That is*

$$P = D0 (1+g) / (1 + k) + D1 (1+g) / (1 + k)^2 + D2 (1+g) / (1 + k)^3 \dots \text{Eq(2)}$$

where  $D0 = D1 / (1+g)$

B. *With no growth in dividends and if the firm pays out all earnings as dividends, Equation (2) equals*

$$P = E1 / k \quad \text{Equation (3)}$$

*where E1 is next period earnings per share*

*In this case,  $k$  equals  $E/P$  or the reciprocal of the P/E ratio*

*C.  $P$  is not necessarily the current market price:  $P$  is your estimate of the intrinsic value of the stock: that you, as the analyst, think the stock should sell for on the open market. Every analyst could, and most likely will, have a unique estimate of  $P$  depending on their estimates of  $D1$ ,  $k$  and  $g$ . The intrinsic value equals the current market price if the market is efficient.*

*D.  $D1$  comes from projected earnings for the next period that, in turn, comes from projected sales that, in turn, are generated by assets that, in turn, are financed with liabilities and owners equity. Ratio analysis helps in evaluating these interactions.*

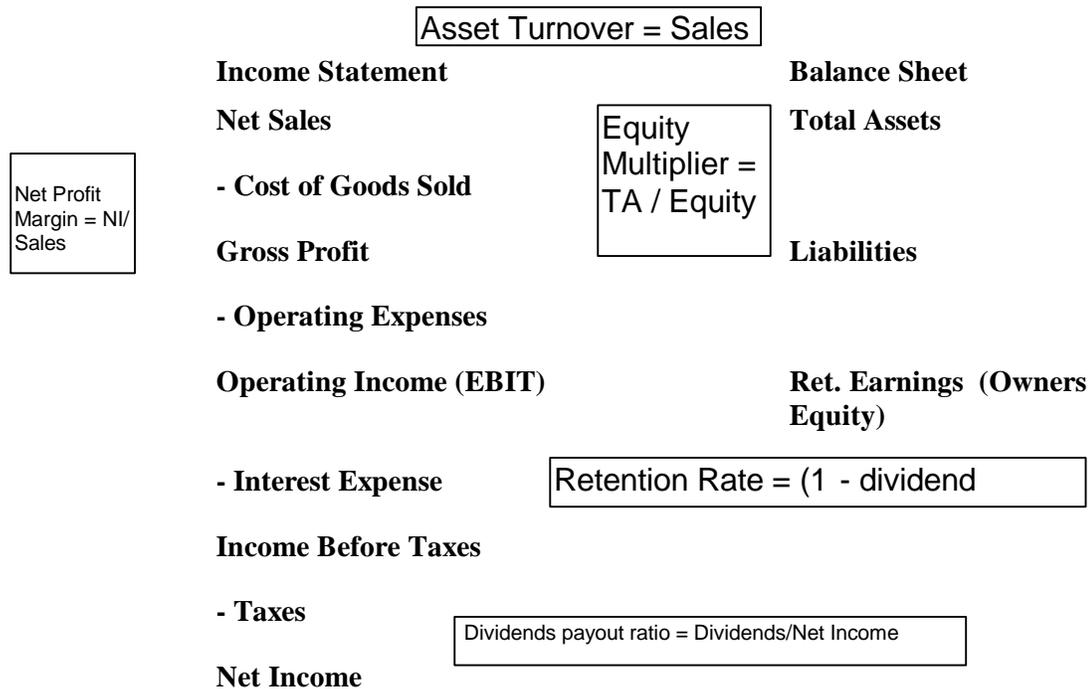
*E.  $g$  is an estimate of sustainable growth in dividends in the projected period; it comes from the sustainable growth model:  $g = ROE \times$  rate of retention. According to this model, the growth rate of dividends also equals the growth rate of sales, the growth rate of assets, the growth rate of retained earnings, and the growth rate of earnings if all the ratios (asset turnover, net profit margin, the rate of retention, the payout ratio, and the debt/equity ratio) remain constant in the projected period. This is why  $g$  is referred to as "sustainable." If any of these ratios change,  $g$  will likewise change.*

*F.  $k$  usually comes from the Capital Asset Pricing Model (CAPM). Because this is an equity model, you must use the required rate of return to the equity holders, not the weighted average cost of capital that reflects the required rate of return to all sources of capital including equity, debt and preferred stock.*

*G. Required rate of return vs. expected rate of return: Be sure to recognize the difference between the required rate of return, which comes from some theoretical model such as the CAPM, and the expected rate of return that you project. The expected rate of return could come from several different models including the P/E multiple model (i.e., multiple projected*

*P/E x projected earnings per share), a P/Sales multiple model, a P/Cash Flow multiple model or any other model.*

A. *Dividends, D1. Let's now take a closer look at where each of the 3 variables on the right hand side of equation (1) come from. The key is retained earnings, which acts as a cumulative scoreboard for the success of the firm since day 1. To keep things as simple as possible, let's assume that all of the owners equity is accounted for by retained earnings. To see how the firm generates income to pay dividends, we need to understand the interaction of the firm's 2 financial statements: the balance sheet and the income statement.*



In order to trace through the interaction of these 2 financial statements, begin with assets at time (t=0).

- i. t = 0 (current time period)
  - 1) Assets = \$1 million

Net Sales = \$1 million

- 3) Net Profit Margin (NPM) = 10%
- 4) Payout Ratio (PO) = 50%
- 5) Equity Multiplier = 2, or Debt/Equity Ratio (D/E) = 1
- 6) Asset Turnover (ATO) = 1

t = 0

<b>Income Statement</b>		<b>Balance Sheet</b>	
Net Sales	\$1,000,000	Total Assets	\$1,000,000
		Liabilities	\$500,000
Net Income	\$100,000	Owners Equity	\$500,000
		Retain. Earnings	

- ii. If the following are true:
  - 1) Constant asset turnover (ATO)
  - 2) Constant profit margins
  - 3) Constant capital structure where D/E ratio of 1:1.
  - 4) Constant dividend payout ratio
- iii. t = 1 can you calculate the growth in dividends.
  - 1) Net Sales = \$1.1 million (the firm now has \$1.1 million assets since we have assumed a constant ATO)
  - 2) Net Profit Margin (NPM) = 10%, which leads to Net Income of \$110,000
  - 3) Payout Ratio (PO) = 50%, which allows payout of dividends of \$55k and an increase in retained earnings of another \$55k totaling \$550,000

- 4) Equity Multiplier = 2, or Debt/Equity Ratio (D/E) = 1, which allows debt to increase to \$550,000 and total asset to \$1.1 million

t=1

<b>Income Statement</b>		<b>Balance Sheet</b>	
<b>Net Sales</b>	<b>\$1,100,000</b>	<b>Total Assets</b>	<b>\$1,100,000</b>
		<b>Liabilities</b>	<b>\$550,000</b>
<b>Net Income</b>	<b>\$110,000</b>	<b>Owners Equity (R Earnings)</b>	<b>\$550,000</b>

t = 2, you will have net sales of \$1.21 million, net income of \$121k, retained earnings of \$605k, debt of \$605k, and total assets of \$1.21 million.

#### IV. Sustainable Growth

	<i>t = 0</i>	<i>t = 1</i>	<i>Growth Rate</i>
<i>Sales</i>	<i>\$1 million</i>	<i>\$1.1 million</i>	<i>10%</i>
<i>Net Income</i>	<i>\$100k</i>	<i>\$110k</i>	<i>10%</i>
<i>Total Assets</i>	<i>\$1 million</i>	<i>\$1.1 million</i>	<i>10%</i>
<i>Liabilities</i>	<i>\$500k</i>	<i>\$550k</i>	<i>10%</i>
<i>Owners Equity (R.E.)</i>	<i>\$500k</i>	<i>\$550k</i>	<i>10%</i>
<i>Dividends</i>	<i>\$50k</i>	<i>\$55k</i>	<i>10%</i>

iv. More easily,

1)  $g = \text{ROE} \times \text{rate of retention}$  Equation (4)

- 2) where  $ROE = \text{net income} / \text{equity}$
  - 3) Question: How can the firm change growth in the future? A quick look at equation (4) shows that the firm can change  $g$  by either changing ROE or by changing the rate of retention.
- v. Interrelationships.
- 1) If no interrelationships, an increase in any one of the 3 variables on the right hand side of equation (1) would:

<i>Firm Policy</i>	<i>Impact on P(ceteris paribus)</i>
<i>Increase Dividends</i>	<i>Increase P</i>
<i>Increase growth</i>	<i>Increase P</i>
<i>Increase <math>k^*</math></i>	<i>Decrease P</i>

- 1) \* Restructuring (more debt) usually means greater risk that is reflected in a higher beta that, in turn, increases  $k$ .
- 2) Unfortunately, the assumption of no interrelationships, where each of the 3 variables acts independently of the other variables, is not realistic.

Arguments for greater dividends are:

- ? Clientele effect: The firm's dividend policy attracts a certain type of investors.
- ? Certainty of dividends versus capital gains: cash dividends are more definite than capital gains and, thus, less risky.
- ? Tax effects: Tax exempt investors prefer higher dividends opposed to lower dividends.

Arguments against higher dividends are:

- ? No effect on value: The firm's decision to invest in assets is independent of the manner in which it finances those assets.
- ? Less cash available for investments: Dividends reduce the amount of cash the firm has to finance profitable investments.
- ? Taxes: Capital appreciation represents a deferral of taxes.
- ? Violation of an indenture: Many bond indentures limit the amount of dividends a firm may pay.

Holding all other factors constant, an increase in dividend payout would:

- ? decrease the firm's growth rate. From equation (4), a greater dividend payout ratio means a lower retention rate.
- ? decrease retained earnings that would, in turn, lead to lower growth due to less internally generated funds.
- ? M&M theory says that the firm's dividend policy is irrelevant.

Example

A firm has \$1 million of net income that it could either pay out as dividends or retain. Simultaneously, the firm wants to invest \$1 million in a new asset. How should the firm finance the purchase in order to maximize the value of the firm?

- ? Pay out the \$1 million as dividends and borrow \$1 million.
- ? Retain the entire \$1 million then it would be able to purchase the assets with equity.
- ? The reason M&M's theory is important is that it focuses on bankruptcy costs.

Summary of theories of capital structure:

M&M (no taxes) --no optimal capital structure--

- ? Proposition I--value of firm is independent of capital structure, and the firm's weighted average cost of capital is constant.

? Proposition II--the cost of equity rises as the firm increases its use of debt

M&M (with taxes)--the firm's optimal capital structure is 100% debt

? Proposition I--debt financing is highly advantageous due to the taxshield of interest, and the firm's weighted average cost of capital consistently decreases as the firm relies more heavily on debt

? Proposition II--the cost of equity as the firm relies more heavily on debt (same as Proposition II without taxes).

Bankruptcy Theory--the firm's optimal capital structure is between 0% debt and 100% debt. The optimal capital structure is where the cost of bankruptcy, which increases with the greater use of debt, equals the benefits of using lower cost debt.

Two Equivalent Methods of Valuing a Firm's Equity—using the discounted cash flow model ( $\text{Value} = \text{Cash Flow} / \text{Discount rate} - \text{Growth}$ ), you can determine a firm's equity value in either of two ways:

A. direct method: calculate the present value of cash flows accruing to the stockholders.

B. indirect method: calculate the present value of cash flows accruing to both stockholders and creditors, then subtract the value of debt.

? Once you find the equity value of the firm, divide this value by the number of shares outstanding to determine the value per share.

? Whichever method you use, be sure your cash flow calculation matches your discount rate. Both methods provide the same answer.

	Discount Rate
cash flows to stockholders	required rate of return to stockholders, $K_e$
cash flows to creditors and stockholders	weighted average cost of capital, WACC

C. Definitions:( different authors may use slightly different definitions)

? Free cash flow (FCF) is the cash flow available for distribution after the firm invests in new plant and equipment.

? Free cash flow available to stockholders = net income + depreciation - investment

? Free cash flow available to both stockholders and creditors = EBIT (1-t)

Note that when growth equals zero, depreciation equals investment and that:

*Free cash flow available to stockholders = net income*

Each method calculates taxes differently. The direct method deducts interest for tax purposes whereas the indirect method does not

Example

Calculate the value per share of the firm's stock given the following projections for next year (all projections in 000s):

Revenue (R)	\$1300
less: Operating Expenses	-600
less: Noncash charges (Depreciation, D)	<u>-200</u>
Earnings before interest and taxes (EBIT)	500
less: Interest (I = 10%)	<u>-50</u>
Earnings before taxes (EBT)	450
less: Taxes (t = 50%)	<u>-225</u>
Net income (NI)	\$225

Assume:

1. Debt = \$500,000
2. Cost of debt before taxes =  $K_d = 10\%$
3. Cost of debt after taxes =  $K_b = 10\% (1 - .5)$
4.  $K_e = 30\%$
5. Debt / Total Asset ratio = 40%
6. Equity / Total Asset ratio = 60%
7. Shares outstanding = 100,000
8. Growth (g) = 0

The no-growth assumption—t firm pays out all earnings as dividends, and that depreciation equals investment.

$$\begin{aligned}
 WACC &= K_d (\text{Debt} / \text{Total Assets}) + K_e (\text{Equity} / \text{Total Assets}) \\
 &= .10 (1 - .5) (.4) + .30 (.6) \\
 &= 20\%
 \end{aligned}$$

*Direct method of calculating value of equity (E):*

$$\begin{aligned} \text{Equity} &= \text{Free cash flow available to stockholders} / K_e \\ &= \$225,000 / .3 \\ &= \$750,000 \text{ (or } \$7.50 \text{ per share)} \end{aligned}$$

*Indirect method of calculating Equity:*

$$\text{Equity} = \text{Total value of firm} - \text{debt}$$

where:

Total value of firm = Free cash flow available to both  
stockholders

and creditors / WACC

$$= (500,000) (1 - .5) / .2$$

$$= 250,000 / .2$$

$$= \$1,250,000 \text{ (according to this method,$$

taxes

=

\$250,000)

thus

$$\text{Equity} = \text{Total value of firm} - \text{debt}$$

$$= \$1,250,000 - \$500,000$$

$$= \$750,000 \text{ (or } \$7.50 \text{ per share)}$$

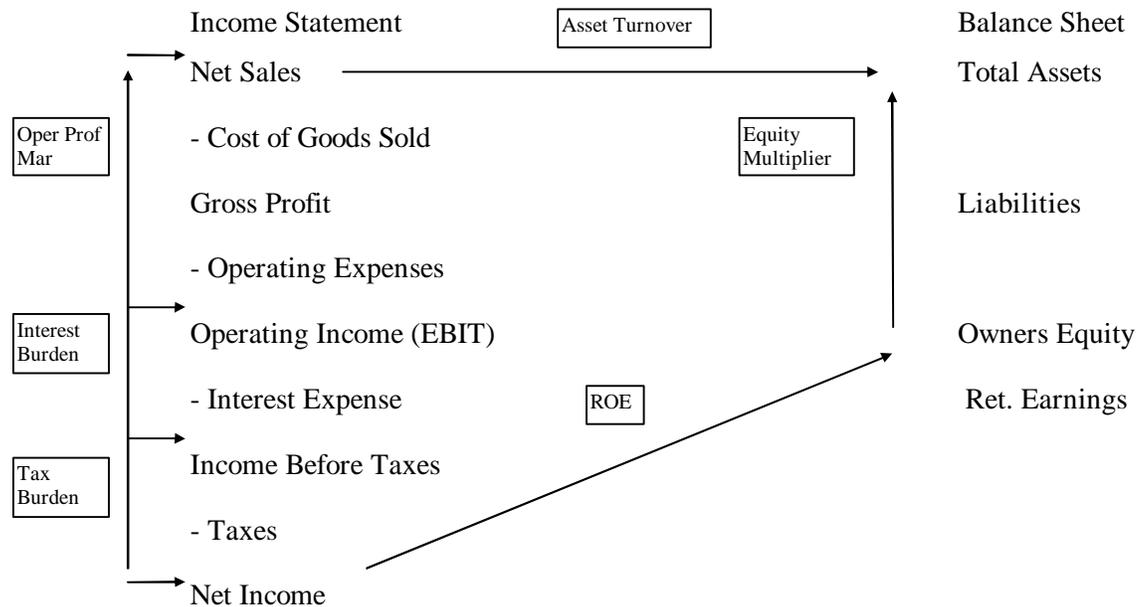
Retention Rate impact on  $g$ —From Equation (4), increasing the retention rate leads to higher growth, but we do not know for sure how this change will impact  $P$ . The life-cycle model of growth shown below more clearly shows the interaction between a firm's retention rate and its dividend policy.

## Life Cycle Model

Firm Financial Policies	Stage I: Rapid Expansion	Stage II: Mature Growth	Stage III: Stabilization/Decline
Dividends	Low	Moderate	High
Retention Rate	High	Moderate	Low
Leverage	High	Moderate	Low
Net Profit Margin	High	Moderate	Low
Competition	Low	Moderate	High

### Components of ROE.

- A)  $ROE = \text{net income} / \text{equity}$
- B) Decomposition ROE into several components--usually either 3 or 5 components as follows:



This layout allows you to see the components more clearly.

$$A) ROE = (Net\ Income / Income\ Before\ Taxes) \times (Income\ Before\ Taxes / Operating\ Income) \times (Operating\ Income / Net\ Sales) \times (Net\ Sales / Total\ Assets) \times (Total\ Assets / Equity)$$

where:

- ? Net Income / Income Before Taxes = Tax Burden
- ? Income Before Taxes / Operating Income = Interest Burden
- ? Operating Income / Net Sales = Operating Profit Margin (OPM)
- ? Net Sales / Total Assets = Asset Turnover (ATO)
- ? Total Assets / Equity = Equity Multiplier

The benefit of decomposing ROE is that it allows you to analyze the impact each component has on ROE and, thus, on growth.

### C. *The Required Rate of Return, k.*

The required rate of return to the stockholders,  $k$ , comes from the Fisher Equation, which says:

$$k = \text{risk-free rate} + \text{risk premium}$$

According to the Capital Asset Pricing Model,

$$k = \text{risk-free rate} + \text{Beta} \times (\text{Expected Return on the Market Portfolio} - \text{risk free rate})$$

Risk-free Rate. Usually, the 90-day Treasury-bill rate, but should equal the rate on a zero-coupon bond whose maturity coincides with the investor's time horizon. The riskfree rate actually has two components: the real rate of return and an inflation premium.

According to the CAPM,

Beta greater than 1.0	Aggressive Stock
Beta equal to 1.0	Average Risk Stock
Beta less than 1.0	Defensive Stock

At this point, we need to distinguish between the required rate of return ( $k$ ) and expected rates of return ( $k'$ ) as follows:

Analysis	Conclusion	Alpha ( $k' - k$ )	Action
$k' > k$	stock is undervalued	positive	Buy
$k' = k$	stock is fairly valued	zero	Hold
$k' < k$	stock is overvalued	negative	Sell

1. To calculate  $k'$ , we need input from some other model such as a P/E model, which is likely the most widely used by analysts as shown in the following.
2. Selected data from Valueline report dated January 6, 1995 by Vik Malhotra
  - a. US Healthcare, Inc (USHC)
  - b. Recent price = \$40
  - c. P/E Ratio = 15.2 (Trailing 17.2, Median = 22.0)
  - d. Relative P/E = 1.11
  - e. Dividend Yld = 2.2%
  - f. Timeliness = 2
  - g. Safety = 3
  - h. Beta = 1.55

- i. Float approximately 15% with spikes higher in times of price volatility
- j. Institutional ownership = 118'154,000 shares
- k. Shares outstanding = 159,920,000 (100% of capital)
- l. Capital structure: all equity
- m. Projected Growth rates over next 5 years:
  - ? Revenues = 17.0%
  - ? Cash Flows = 12.5%
  - ? Earnings = 13.5%
  - ? Dividends = 27.0%
  - ? Book Value 27.5%
- n. Projected Quarterly dividends: \$.88 (1995)
- o. Projected Earnings per share \$2.85 (1995)
- p. Projected (1997-1999) % Earned New Worth = 28%
- q. Projected (1997-1999) % Retained to Eommon Equity = 20%
- r. Projected (1997-1999) % All Dividends to Net Profit = 29%
- s. Projected (1997-1999) P/E = 18

1. From the Value Line data, we see that the analyst (Vik Malhotra) projects USHC to achieve a P/E of 18 during the 1997-1999 time frame. If you were to view this projection relative to the past 15 years, a P/E of 18 appears reasonable. If you did not accept this projection, you could change it to reflect what you believe to be most likely.
2. If we further believe that Malhotra's expectation that USHC will earn \$2.85 per share in 1995, you would multiply 18 times \$2.85 to get a projected price of

\$51.30 per share by the end of 1995. Again, you could adjust the earnings estimate according to your expectations if you do not agree with Malhotra. Using the projected price of \$51.30, you would expect to receive a total return on this stock of % calculated as follows:

$$\begin{aligned}k' &= [( \text{projected price} - \text{current price} ) / \text{current price}] + \\ &\quad ( \text{expected dividend} / \text{current price} ) \\ &= ( \$51.30 - 40 ) / 40 + \$ .88 / 40 \\ &= 28.25\% + 2.2\% \\ &= 30.45\%\end{aligned}$$

The current price of USHC is located at the top of the Value Line sheet, and the 1995 projected dividend of \$.88 is located 4 lines down from “Revenues per share.”

Next, we need to calculate the required rate of return (k) as follows:

$$k = R_f + \text{beta} [E(m) - R_f]$$

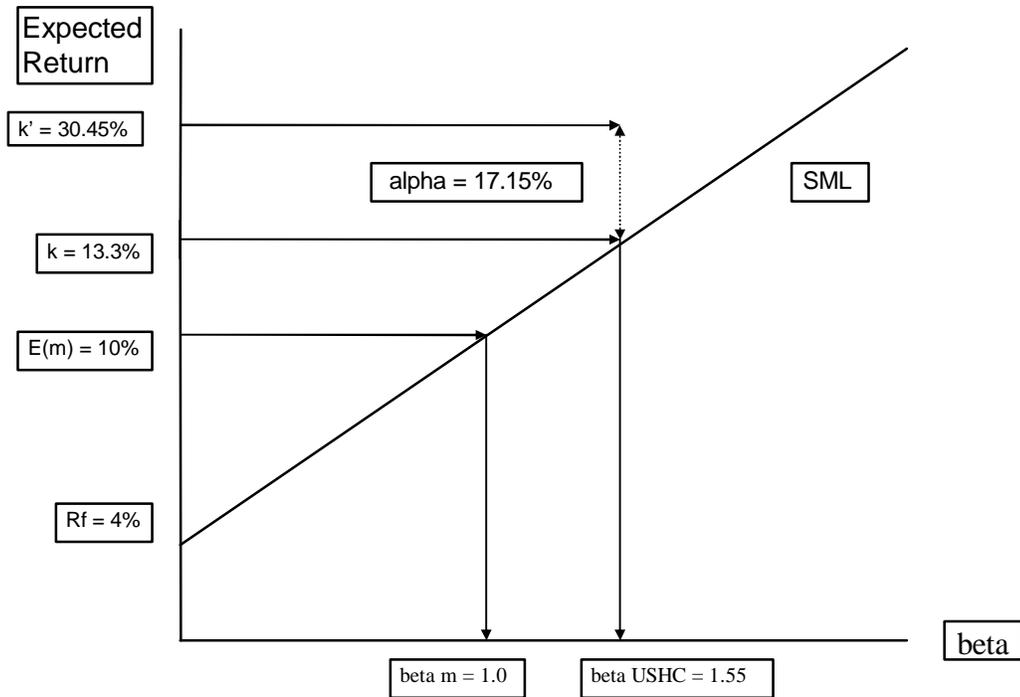
*Assuming an annual risk-free rate of .04, an E(m) return of 10% (we will see later one method of estimating E(m) by using historical data) and Value Line’s estimate of USHC’s beta of 1.55, we would estimate k as follows:*

$$\begin{aligned}k &= .04 + 1.55 ( .10 - .04 ) \\ &= 13.3\% \text{ (annual)}\end{aligned}$$

*Given these two inputs, we can calculate alpha (= k' - k) as follows:*

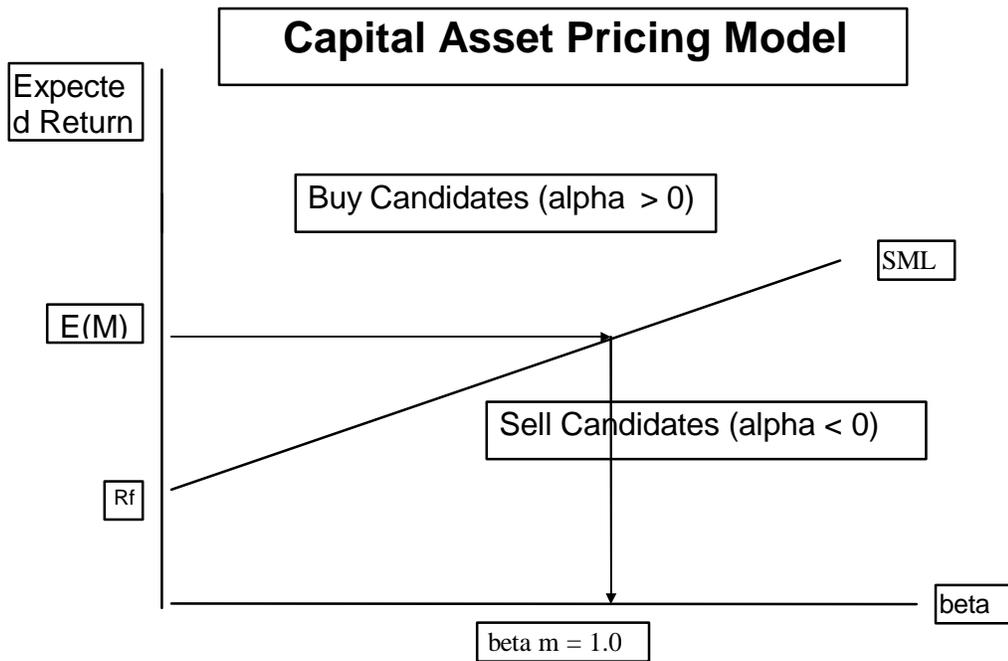
$$\begin{aligned}\text{alpha} &= 30.45\% - 13.3\% \\ &= 17.15\%\end{aligned}$$

*Because alpha is positive, the conclusion is that USHC is a buy candidate--a very strong buy signal, at least according to this model. The graph below illustrates this analysis.*



According to the CAPM:

- ? All stocks with expected returns ( $k'$ ) that plot above the line ( $\alpha > 0$ ) signal buy candidates
- ? All stocks with expected returns ( $k'$ ) that plot below the line ( $\alpha < 0$ ) signal sell candidates
- ? If capital markets are efficient, the required rate of return ( $k$ ) will equal the expected rate of return ( $k'$ ) and alpha will equal zero.
- ? If capital markets are inefficient,  $k$  will not equal  $k'$  meaning investors can find positive alphas.



*D. Problems with the DDM.*

Estimating  $k$  and  $g$ . Still, it may be useful in estimating the intrinsic value of the market since an index contains many stocks so the estimation errors tend to offset each other and the model is much more reliable.

### III. Introduction to Fixed Income Bonds

#### *General concepts of fixed income securities*

- ? Given the required yield on a bond, the price is simply the present value of the cash flows:

$$? \text{ Price} = \sum_{t=1}^n C_t \frac{1}{(1+i)^t}$$

- ? EXAMPLE:
- ? What is the value of a 20 year, 10%, semiannual pay bond, if the yield to similar bonds is 10.6%?
- ? Using the calculator, we can find the present value of the cash flows at a rate of 10.88%. There is a slight problem in that this is a semiannual pay bond, while the required rate is given as an annual rate.
- ? We solve this by converting to a semiannual rate of return. Each coupon payment represents interest for half a year, so that we divide the annual rate by 2 ( $10.6 / 2 = 5.3$ ), and multiply the number of periods by 2 ( $2 \times 20 = 40$ ).
- ? On a Texas Instruments BA-35 calculator, you would enter:  $40 = N$ ,  $5.3 = \%i$ ,  $50 = PMT$ ,  $1000 = FV$ ,  $CPT = PV$ . This gives the value of the bond as \$950.57.

*Bond Yield Measures. Given the price, what is the rate of return or yield on the bond? Going from price to yield is more complicated than going from required yield to price, since several measures are commonly used.*

NOMINAL YIELD: This is simply the coupon rate on the bond.

Nominal yield is the actual yield received on the bond only if the bond is priced at par. Otherwise, it is useful only in that it is part of the specification of cash flow to be received.

CURRENT YIELD: This is simply the annual cash flow divided by the price of the bond. Current yield is only useful as a description of the immediate cash return on the bond, since it ignores any capital gains or losses.

(PROMISED) YIELD TO MATURITY: The yield to maturity (ytm) of the bond would be found by finding the discount rate which sets the present value of the cash flows equal to the price of the bond. This is usually referred to simply as "yield to maturity" (YTM). This may be described as the "promised" yield to maturity because it is based on two assumptions:

- ? The bond will be held to maturity.
- ? All cash flows from the bond can be reinvested at the promised yield to maturity.
- ? All of the cash flows will be exactly as promised, without default, delay, or exercise of any embedded options such as a call.
- ? Most financial calculators are set up to calculate the YTM on a bond using the present value method.
- ? The present value method simply uses the formula for the present value of the cash flows and the observed price to infer the yield, rather than using the formula

and the required yield to infer the price. I.e., solve for  $i$  in the formula:

$$\text{Observed Price} = \sum_{t=1}^n C_t \frac{1}{(1+i)^t}$$

#### EXAMPLE

What is the yield of a 20 year, 10%, semi-annual pay bond, callable in 15 yrs. at 105, which is priced at 950.57?

- ? The nominal yield is 10%.
- ? The current yield is  $100 / 950.57 = 0.1052 = 10.52\%$ .  
Note again that current yield ignores capital gain or loss, as well as time value.
- ? This semiannual yield is then converted to an annual yield. This is usually annualized by ignoring compounding and using "bond equivalent basis" or "bond equivalent yield," simply multiplying by the number of periods in a year:
- ? Approximate annual yield, bond equivalent basis:  $2 \times 5.26 = 10.52\%$

The correct yield to maturity is easily found using a calculator. On a Texas Instruments BA-35 calculator, you would enter: 40 = N, 950.57 = PV, 50 = PMT, 1000 = FV, CPT = %i. The result is  $ytm = 5.30\%$ . You may note that the calculator takes several seconds to compute the ytm - this is because it is again using an iterative approximation algorithm, not a closed solution. The resulting semiannual yield is then annualized on a bond equivalent basis to 10.6%

YIELD TO CALL: The yield to call can be computed by applying the same methods used to compute YTM, but

modifying them so that the term to maturity is the term to the call, and the maturity amount is the principal plus the call premium.

#### EXAMPLE

The bond in the previous example is callable in 15 years at 105 (i.e., 105% of face value or \$1050.00).

- ? The semiannual yield to call is calculated on a calculator by entering: 30 = N, 950.57 = PV, 50 = PMT, 1050 = FV, CPT = %i.
- ? This gives a semiannual yield to call of %i = 5.407, doubling gives an annual bond equivalent yield of 10.814%.

NOTE: Although this is a higher yield than the yield to maturity, it does not imply that you would like the bond to be called. The yield to maturity was over the next twenty years, while the yield to first call is only over the next ten years.

- ? There is the problem of what to do with the funds at the time of the call. The bonds would not be called unless yields were low.
- ? Further, the firm will not call the bonds unless the call is favorable to the firm, which implies that the call is not favorable to the investor!

REALIZED YIELD: The yield actually obtained by the purchaser of a bond is called the realized yield or horizon yield. It may differ from the promised yield if the assumptions underlying promised yield to maturity are violated.

Assuming that only the holding period assumption is violated and interest rates do not change, the yield is found by using the

horizon as the maturity date and the bond price at the horizon date as the maturity value.

The value of the bond at the horizon date is found as the present value of the remaining flows at that time.

If the realized yield is computed using an expected bond price at the horizon date, the result is called the expected realized yield.

#### EXAMPLE

Assume that the bond in the previous example will only be held for ten years, and that the required rate of return remains at 10.52%.

- ? At that time the bond has ten years until maturity, and is priced at:  $20 = N$ ,  $5.26 = \%i$ ,  $50 = PMT$ ,  $1000 = FV$ ,  $PV = CPT$ . This gives a price of \$968.30.
- ? The semiannual horizon yield is then computed as:  $N = 20$ ,  $PMT = 50$ ,  $PV = 950.57$ ,  $FV = 968.30$ ,  $\%i = CPT$ . This gives a semiannual yield of 5.29%, doubling gives a bond-equivalent annual yield of 10.6%

NOTE Although the procedure is exactly like that of computing yield to call except that the price of the bond is used instead of the call price.

- ? The yield to maturity is an internal rate of return. The internal rate of return implicitly assumes that all interim cash flows can be reinvested at the internal rate of return. If this implicit assumption is incorrect, the realized yield (sometimes horizon yield) will be

different than the computed yield to maturity. This is easily demonstrated:

? If the underlying assumption of reinvestment at the ytm is correct, at maturity the investor will have the compounded value of the coupon payments (FVA) plus the maturity value:

FVA of coupon payments* :	6500.99
Maturity value:	<u>1000.00</u>
Total	7500.99

Total (realized) return (semiannual) =  $(7500.99 / 950.57)^{1/40} = 1.053 = 5.30\%$

N = 40, %i = 5.30, PMT = 50, PV = 0, FV = CPT. The addition to the interest payments is sometime referred to as "interest on interest."

If, on the other hand, interest rates drop immediately after purchase, and the actual reinvestment rate is only 5%, at maturity the investor will have:

FVA of coupon payments:	6039.99
Maturity value:	<u>1000.00</u>
Total:	7039.99

Total (realized) return (semiannual) =  $(7039.99 / 950.57)^{1/40} = 1.0513 = 5.13\%$

N = 40, %i = 5.00, PMT = 50, PV = 0, FV = CPT.

Thus, if the rate at which cash flows are reinvested is not the ytm, the realized return will be different than the ytm. The possibility that this will occur is called "reinvestment rate risk."

NOTE: The realized rate of return or horizon yield will always lie between the yield to maturity and the reinvestment rate.

#### HPR vs. HPY

There are two widely used measures of return over a period.

$$\text{HPR} = \text{Holding Period Return} = \frac{\text{Ending Value}}{\text{Beginning Value}}$$

$$\text{HPY} = \text{Holding Period Yield} = \frac{\text{Ending Value} - \text{Beginning Value}}{\text{Beginning Value}}$$

NOTE:  $\text{HPY} = \text{HPR} - 1$ :

$$\text{HPY} = \frac{\text{Ending Value} - \text{Beginning Value}}{\text{Beginning Value}} = \frac{\text{Ending Value}}{\text{Beginning Value}} - \frac{\text{Beginning Value}}{\text{Beginning Value}} = \text{HPR} - 1$$

NOTE For multiple period returns, HPR is compounded (not HPY!). I.e.,

$$\text{Multiple Period Return} = \left[ \prod_{t=1}^T (1 + \text{HPY}) \right]^{\frac{1}{N}} - 1.0$$

#### EXAMPLE:

Suppose that an investor earns 10% in year one, 11% in year two, and 5% in year three. The return over the three-year period is:

$$\text{Three-year return} = [(1 + 0.10)(1 + 0.11)(1 + 0.05)]^{1/3} - 1 = 0.282 \Rightarrow 28\%$$

### Bond Price Volatility

Bond price "volatility" refers to the percent changes in the price of a bond as yield changes - i.e., volatility with respect to yield changes. *The rules should be understood.*

Coupon	Maturity	YTM	Price		? Price	% ?
6%	20 yrs	8%	804	-----A	- 196	- 19.60
6	3	8	949	-----C	- 51	- 5.10
6	20	6	1000			
6	3	6	1000			
6	20	4	1271	-----B	+ 271	27.10
6	3	4	1056	-----D	+ 56	+ 5.60
6	30	20%	320.95			
6	30	18	337.98	-----E	+ 17.03	+ 5.31
6	20	20	318.26			
6	20	18	357.67	-----F	+ 39.41	+ 12.38
15	20	8	1687	-----G	- 345	- 16.98
15	20	6	2032			
15	20	4	2495	-----H	+ 463	+ 22.79

- ? Bond prices move inversely to yield. Compare price changes A to B, C to D.
- ? Longer bonds will have larger price changes. Compare price changes A and B to C and D.
- ? As maturity increases, volatility (per cent price changes) tends to increase at a decreasing rate. Compare per cent changes A and B to C and D.
- ? NOTE: this rule is not always true - under some conditions, volatility may actually decrease with maturity. Compare per cent changes E and F.

- ? For a given absolute change in the ytm, the price increase due to a decrease in yield is larger than the price decrease due to an increase in yield- i.e., price and volatility is not symmetrical. Compare price and per cent changes A and C to B and D.
- ? For a given absolute change in ytm, bonds of higher coupon have less volatility. Compare per cent changes G to A and B, and H to C and D.

NOTE: the implications for trading strategies:

- ? If yields are expected to increase, price change will be downward and investors should seek the lowest volatility- i.e., short maturities and high coupon.
- ? If yields are expected to decrease, price change will be upward, and investors should seek the highest volatility - i.e., long maturities and low coupons.
- ? The various above effects will cause differences in yields, or yield spreads, between bonds:
- ? There will be a spread among different segments of the bond markets - i.e., governments vs. agencies vs. corporates.
- ? There will be a spread among different sectors within market segments - i.e., AAA corporates vs. BBB corporates, etc.
- ? There will be a spread among different coupons within a segment or sector - i.e., high coupon bonds are less volatile and will have (ceteris paribus) lower yield.
- ? From the term structure (yield curve), there will be a spread among different maturities.

- ? It is important to understand that these relationships and the resulting yield spreads will vary over time.

### Duration

This is an extremely important concept, with important applications. The basic definition of duration is: “Duration is the percent change in price when yield changes by 100 basis points.” Basically, duration is calculated by:

- ? computing the price for a small increase in yield, and for an equal decrease in yield,
- ? computing the percent change in price
- ? adjusting the percentage to reflect a +/- 50 basis point change in yield.
- ? Computing the price of a bond after a yield change requires a valuation model. This leads to several versions of duration, depending on the model used:

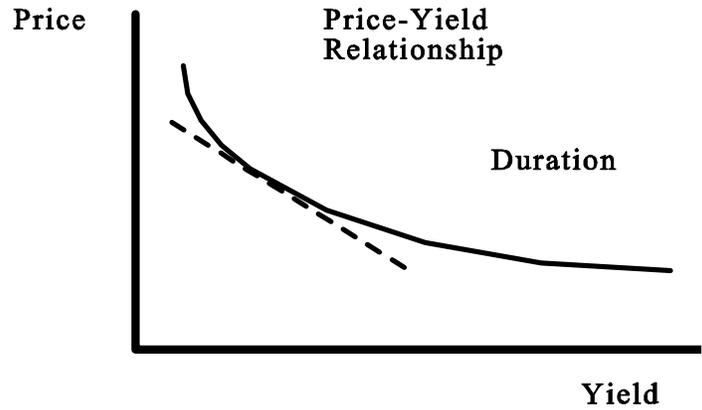
Why is duration important?

- ? It is a handy risk measure— the higher the duration, the higher the sensitivity to changes in yield.
- ? It is a handy way to compute the % change in the price of a bond, given a change in yield:
- ?  $\% \text{ change in price} = \text{duration} \times \text{change in yield in basis points}.$

Other Interpretations:

- ? The definition of duration is readily understood, but there are other ways of visualizing duration:

- ? Duration is sometimes viewed as the slope of the price-yield relationship at the given yield.

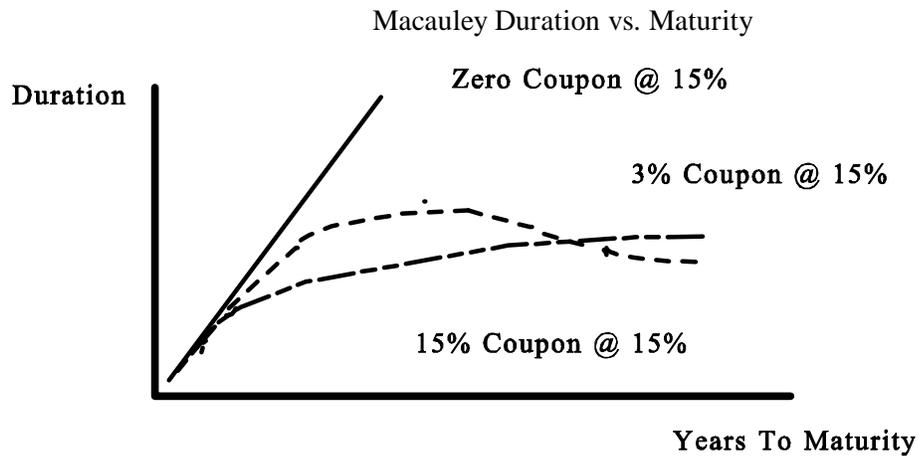


- ? This interpretation is not exactly correct, since duration is based on a % change in price, rather than an absolute change in price, but it is close.
- ? Another interpretation of duration is that it is the point in time at which interest rate risk cancels out reinvestment rate risk, so that you have the same amount of \$, and hence the same return, no matter what happens to interest rates.

Duration facts:

- ? The duration of a zero is equal to its maturity/ $(1 + y/2)$ .
- ? The duration of a coupon bond is always less than its maturity.
- ? Duration tends to increase with maturity, but at a declining rate.
- ? Duration (and hence the volatility) of coupon bonds generally increases at a decreasing rate. However, the

curve for the 3% coupon, selling to yield 15%, shows that in some cases intermediate-term bonds will have longer duration (and so higher volatility) than long term bonds!

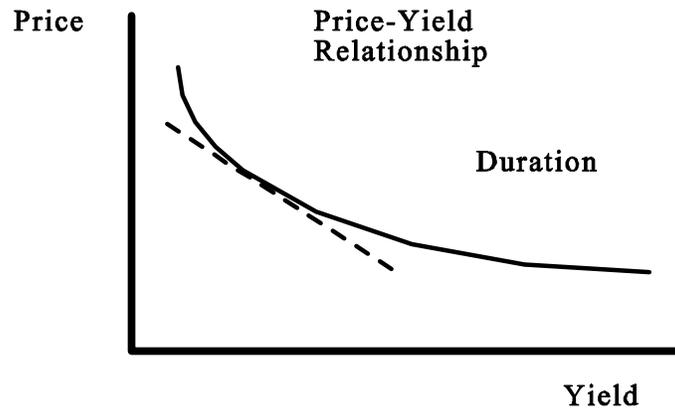


- ? There is an inverse relationship between duration and yield. This can readily be seen by considering the slope of the price-yield relationship as yield increases.
- ? Events which accelerate the receipt of cash flows will reduce duration, sometimes dramatically.
- ? If yields are expected to decrease, the correct strategy is to increase volatility by increasing duration. If yields are expected to increase, the correct strategy is to reduce volatility by reducing duration.

#### Convexity

- ? The price - yield relationship is not linear. Convexity takes account of this nonlinearity.

- ? The nature of convexity is revealed by examining the price - yield relationship:



The relationship is not linear, but curvilinear. While the exact shape of the curve will vary, The general shape remains valid for all bonds and for portfolios (in fact, for any stream of payments):

- ? The relationship is steeper at low yields than at high yields.
- ? The rate of change of the relationship (amount of curvature) decreases as yields increase.
- ? The measure used to describe the curvature of the relationship is convexity. It is the rate of change of the slope of the curve.
- ? Duration is the slope of the curve at the given yield. It is only valid at that specific yield, however, since the curvature means that it changes as yield changes. This is not important for small changes in yield, since the error introduced is small.

- ? For larger changes in yield, however, the error can become significant, as shown in the diagram.

Convexity is used to correct for the error by adding the Price

$$\text{Per Cent Price Change Due to Convexity} = 1/2 \times \text{Convexity} \times (\Delta \text{ yield})^2$$

Change Due to convexity:

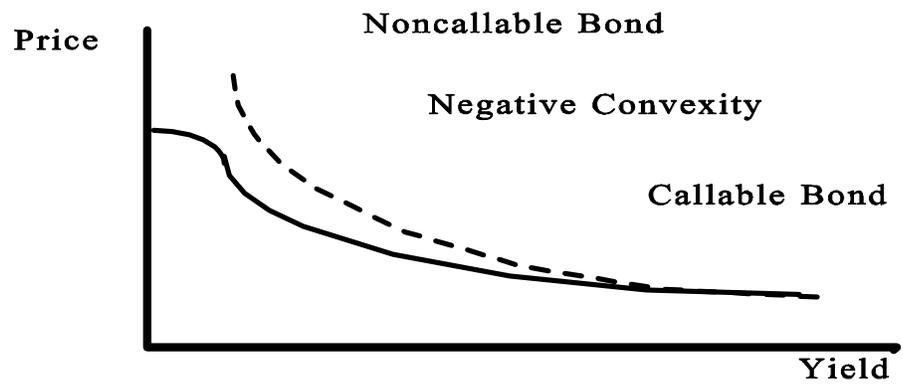
- ? so that the corrected per cent change in the price of the bond is:

$$\Delta \text{ Corrected \% Price} = (\Delta \text{ Price Due to Duration}) + (\Delta \text{ Price Due to Convexity})$$

NOTE: The correction term " $\Delta \text{ Price Due to Convexity}$ " is always positive. I.e., the larger the convexity, the larger the price increase due to a decrease in interest rates and the smaller the price decrease due to an increase in interest rates. This means that higher convexity is preferred. Three convexity relationships:

- ? Holding yield and maturity constant, convexity is inversely related to coupon.
- ? Holding yield and coupon constant, convexity is positively related to maturity.
- ? Holding coupon and maturity constant, convexity is inversely related to yield.

Convexity for callable bonds. For a callable bond, the call price becomes an upper bound on the price of the bond, so that the price-yield relationship is distorted as shown:



NOTE: At some point the curvature will change direction, so that the bond in this range of yields will actually exhibit negative convexity.

## IV. Introduction to Hedge Funds

### *General Characteristics*

- 1) Hedge funds are usually private limited partnerships investment pools designed for sophisticated high-net worth individuals who, under U.S. Securities and Exchange Commission regulations, must have either a minimum net worth of \$1 million or annual income of at least \$200,000 for an individual and \$300,000 for a married couple.
- 2) The primary aim of most hedge funds is to reduce volatility and risk while attempting to preserve capital and deliver positive returns under all market conditions. This is a very active investment strategy and active usually means greater risk than passive indexing.
- 3) Compared with mutual funds, hedge funds use a broader range of investments, including distressed securities, foreign currencies, options, futures and short positions. Unlike mutual funds, hedge funds can use leverage.
- 4) There is one other major difference between mutual funds and hedge funds: fees. Mutual fund fees range from zero to 5 percent, excluding fees for operating expenses. Hedge fund fees range from 1 to 2 percent -- with most managers also taking a 20 percent cut of new profits. Many different fee arrangements are possible.

### *Hedge funds come in different sizes and shapes:*

- 1) A macro hedge fund invests in stock and bond markets and other investment opportunities, such as currencies, in hopes of profiting on significant shifts in such things as global interest rates and countries' economic policies. A macro hedge fund is more volatile but potentially faster growing than a distressed-securities hedge fund that buys the equity or debt of companies about to enter or exit financial distress.

- 2) An equity hedge fund may be global or country specific, hedging against downturns in equity markets by shorting overvalued stocks or stock indexes.
- 3) A relative value hedge fund takes advantage of price or spread inefficiencies.

*Hedge funds vary enormously in terms of investment returns, volatility and risk. Many, but not all, hedge fund strategies tend to hedge against downturns in the markets being traded. Many hedge funds have the ability to deliver non-market correlated returns that make them good diversifiers for a multiple asset class portfolio. Pension funds, endowments, insurance companies, private banks and high net worth individuals and families invest in hedge funds to minimize overall portfolio volatility and enhance returns.*

*Most hedge fund managers are highly specialized and trade only within their area of expertise and competitive advantage.*

*Hedge funds benefit by heavily weighting hedge fund managers' remuneration towards performance incentives, thus attracting the best brains in the investment business. In addition, hedge fund managers usually have their own money invested in their fund.*

#### *Industry facts*

- 1) Estimated to be a \$400-\$500 billion industry and growing at about 20% per year with approximately 7000 active hedge funds.
- 2) Many hedge fund strategies, particularly arbitrage strategies, are limited as to how much capital they can successfully employ before returns diminish. As a result, many successful hedge fund managers limit the amount of capital they will accept.
- 3) Investing in hedge funds tends to be favored by more sophisticated investors, including many Swiss and other private banks, that have lived through, and understand the consequences of, major stock market corrections.

- 4) The hedge fund industry is estimated at \$400 billion to \$500 billion but has been plagued by controversy during the 1990s after a few high-profile cases of poor management. Hedge funds involve varying levels of risk and returns that, at times, outperformed major market indexes.

*Strategies are available to hedge funds*

- 1) selling short - selling shares without owning them, hoping to buy them back at a future date at a lower price in the expectation that their price will drop.
- 2) using arbitrage - seeking to exploit pricing inefficiencies between related securities - for example, can be long convertible bonds and short the underlying issuer's equity.
- 3) trading options or derivatives - contracts whose values are based on the performance of any underlying financial asset, index or other investment.
- 4) investing in anticipation of a specific event - merger transaction, hostile takeover, spin-off, exiting of bankruptcy proceedings, etc.
- 5) investing in deeply discounted securities - of companies about to enter or exit financial distress or bankruptcy, often below liquidation value.
- 6) Many of the strategies used by hedge funds benefit from being non-correlated to the direction of equity markets

*Popular Misconception—*a common misconception is that all hedge funds are volatile. Many hedge fund managers invest very conservatively.

*Hedge Fund Styles*

- 1) Aggressive Growth: Invests in equities expected to experience acceleration in growth of earnings per share. Generally high P/E ratios, low or no dividends; often smaller and micro cap stocks which are expected to experience rapid growth. Expected Volatility: High

- 2) Distressed Securities: Buys equity, debt, or trade claims at deep discounts of companies in or facing bankruptcy or reorganization. Profits from market inefficiency or lack of understanding of the true value of the deeply discounted securities. Another reason is that many institutional investors cannot own below investment grade securities.. Expected Volatility: Low - Moderate
- 3) Emerging Markets: Invests in equity or debt of emerging (less mature) markets that tend to have higher inflation and volatile growth. Short selling is not permitted in many emerging markets, and, therefore, effective hedging is often not available. Expected Volatility: Very High
- 4) Funds of Hedge Funds: Mix and match hedge funds and other pooled investment vehicles. This blending of different strategies and asset classes aims to provide a more stable long-term investment return than any of the individual funds Expected Volatility: Low- Moderate - High
- 5) Income: Invests with primary focus on yield or current income rather than solely on capital gains. May utilize leverage to buy bonds and sometimes fixed income derivatives in order to profit from principal appreciation and interest income. Expected Volatility: Low
- 6) Macro: Aims to profit from changes in global economies, typically brought about by shifts in government policy that impact interest rates, in turn affecting currency, stock, and bond markets. Participates in all major markets -- equities, bonds, currencies and commodities-- though not always at the same time. Uses leverage and derivatives to accentuate the impact of market moves. Expected Volatility: Very High
- 7) Market Neutral - Arbitrage: Attempts to hedge most market risk by taking offsetting positions, often in different securities of the same issuer. For example, can be long convertible bonds and short the underlying issuers equity. May also use futures to hedge interest rate risk. These relative value strategies include fixed income arbitrage,

mortgage backed securities, capital structure arbitrage, and closed-end fund arbitrage. Expected Volatility: Low

- 8) Market Neutral - Securities Hedging: Invests equally in long and short equity portfolios generally in the same sectors of the market. Market risk is greatly reduced, but effective stock analysis and stock picking is essential to obtaining meaningful results. Leverage may be used to enhance returns. Usually low or no correlation to the market. Sometimes uses market index futures to hedge out systematic (market) risk. Expected Volatility: Low
- 9) Market Timing: Allocates assets among different asset classes depending on the manager's view of the economic or market outlook. Portfolio emphasis may swing widely between asset classes. Unpredictability of market movements and the difficulty of timing entry and exit from markets add to the volatility of this strategy. Expected Volatility: High
- 10) Opportunistic: Investment theme changes from strategy to strategy as opportunities arise. Attempts to profit from events such as IPOs, sudden price changes often caused by an interim earnings disappointment, hostile bids, and other eventdriven opportunities. May utilize several of these investing styles at a given time and is not restricted to any particular investment approach or asset class. Expected Volatility: Variable
- 11) Multi Strategy: Investment approach is diversified by employing various strategies simultaneously to realize short and long-term gains. Other strategies may include systems trading such as trend following and various diversified technical strategies. This style of investing allows the manager to overweight or underweight different strategies to best capitalize on current investment opportunities. Expected Volatility: Variable

- 12) Short Selling: Sells securities short in anticipation of being able to rebuy them at a future date at a lower price due to the manager's assessment of the overvaluation of the securities, or the market, or in anticipation of earnings disappointments often due to accounting irregularities, new competition, change of management, etc. Often used as a hedge to offset long-only portfolios and by those who feel the market is approaching a bearish cycle. High risk. Expected Volatility: Very High
- 13) Special Situations: Invests in event-driven situations such as mergers, hostile takeovers, reorganizations, or leveraged buyouts. May involve simultaneous purchase of stock in companies being acquired, and the sale of stock in its acquirer, hoping to profit from the spread between the current market price and the ultimate purchase price of the company. May also utilize derivatives to leverage returns and to hedge out interest rate and/or market risk. Results generally not dependent on direction of market. Expected Volatility: Moderate
- 14) Value: Invests in securities perceived to be selling at deep discounts to their intrinsic or potential worth. Such securities may be out of favor or underfollowed by analysts. Long-term holding, patience, and strong discipline are often required until the ultimate value is recognized by the market. Expected Volatility: Low – Moderate

## **V. Introduction to Venture Capital**

### *A. Basic Characteristics*

- 1) Venture capital is money provided by professionals who invest alongside management in young, rapidly growing companies.
- 2) Professionally managed venture capital firms generally are private partnerships or closely-held corporations funded by institutional investors and wealthy individuals.
- 3) Venture capitalists generally:
  - a. Finance new and rapidly growing companies;
  - b. Purchase equity securities;
  - c. Assist in the development of new products or services;
  - d. Add value to the company through active participation;
  - e. Take higher risks with the expectation of higher rewards;
  - f. Have a long-term orientation
- 4) Venture capitalists only invest in a small percentage of the businesses they review and actively work with the company's management lending their own expertise.
- 5) Venture capitalists mitigate risk by developing a portfolio of young companies in a single venture fund. Many times they coinvest with other professional VC firms.

### *B. Private Equity Investing*

- 1) An institutional investor may allocate 2% to 3% of their institutional portfolio for VC investment.
- 2) Venture capital firms are pools of capital, typically organized as a limited partnership, that invests in companies for five to seven years.

- 3) In the early days of venture capital investment, in the 1950s and 1960s, individual investors were the archetypal venture investor known as "angel investors"

*C. Investment Focus*

- 1) Venture capitalists may be generalist or specialist depending on their investment strategy
- 2) Not all venture capitalists invest in "start-ups." They also invest in companies at various stages of the business life cycle.
- 3) The venture capitalist may also invest in a company throughout the company's life cycle and therefore some funds focus on later stage investing.
- 4) Some venture funds specialize in the acquisition, turnaround or recapitalization of public and private companies that represent favorable investment opportunities.
- 5) There are venture funds that will be broadly diversified and will invest in companies in various industry sectors.
- 6) While technology makes up most of the venture investing in the U.S., VCs also invest in companies such as construction, industrial products, and business services.
- 7) Venture firms come in various sizes from small seed specialist firms of only a few million dollars to global firms with over a billion dollars in invested capital.
- 8) Some venture firms are successful by creating synergies between the various companies they have invested.

*D. Length of Investment*

- 1) Venture capitalists help companies grow but they eventually seek to exit the investment in three to seven years. These investments lack liquidity.

*E. Types of Firms*

- 1) But most mainstream firms invest their capital through funds organized as limited partnerships in which the venture capital firm serves as the general partner.
- 2) Other organizations may include government affiliated investment programs that help start up companies either through state, local or federal programs.
- 3) In recent years the tax code has allowed the formation of either Limited Liability Partnerships, ("LLPs"), or Limited Liability Companies ("LLCs").
- 4) The venture capital firm will organize its partnership as a pooled fund made up of the general partner and the investors or limited partners usually having a life of ten years.
- 5) Like a mutual fund company, a venture capital firm may have more than one fund in existence.

*F. Corporate Venturing*

- 1) One form of investing that was popular in the 1980s and is again very popular is corporate venturing or "direct investing" in portfolio companies.
- 2) Corporate venturing is usually performed with corporate strategic objectives in mind while other VC vehicles typically have investment return as their primary goal.
- 3) Corporate venture programs also usually invest their parent's capital while other venture investment vehicles invest outside investors' capital.

*G. Commitments and Fund Raising*

- 1) VC firms seed investment funds by distributing prospectuses to potential investors that may take several weeks to several months to raise the requisite capital.

- 2) Because of the risk, length of investment and illiquidity and because the minimum commitment requirements are so high, VC funds are generally not for individuals.

H. Capital Calls. Once commitments are made, VC firms start "calling" its limited partners for "takedowns" or "paid-in capital."

I. Illiquidity. Limited partners make these investments in VC funds knowing that it may take several years before the first investments starts to return proceeds.

J. Other Types of Funds. Recently, new "secondary" partnerships that purchæ investments of an existing venture firm are gaining popularity.

*K. Advisors and Fund of Funds*

- 1) Evaluating which funds to invest in is akin to choosing a good stock manager or mutual fund, except the decision to invest is a longterm commitment.
- 2) Some limited partner investors may manage and invest in many funds by delegating investment decisions to a "gatekeeper".

*L. Disbursements*

- 1) The investment by venture funds into investee portfolio companies is called "disbursements". A company will receive capital in oneor more rounds of financing.
- 2) The VC firm provides capital and management expertise and usually takes a seat on the board of the company.

*M. Exits*

- 1) While an IPO may be the most heralded type of exit, most successful exits occur through a merger or acquisition.

*N. IPO*

- 1) In an IPO offering, the venture firm is an insider and, thus, receives stock in the company with the restriction of not being able to sell for several

years. Restrictions are usually lifted after about two years when stock is distributed to partners.

*O. Mergers and Acquisitions*

- 1) Mergers and acquisitions represent the most common type of successful exit for venture investments with stock being distributed to the Limited Partners.

*P. Valuations*

- 1) Like a mutual fund, each venture fund has a net asset value. Unlike a mutual fund, this value is not a market value; it is determined through a valuation of the underlying portfolio.
- 2) Each company in the VC's portfolio is valued at an agreed-upon value between the venture firms when invested in by the venture fund or funds.

*Q. Management Fees*

- 1) As an investment manager, the general partner negotiates a management fee, which is most often negotiated upon formation of the fund.

*R. Carried Interest*

- 1) "Carried interest" is the term used to denote the profit split of proceeds to the general partner for carrying the management responsibility plus all the liability.

Source: National Venture Capital Association web site.