FN312 Investment Lecture 3 Mutual funds and other investment companies

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Reading:
Chapter 4

Outline

- **Types of Investment Companies**
- **Mutual funds:** (open)
  - Functions
  - Investment styles and policies
  - Investment costs
  - Performance
  - Sources of information

Types of Investment Companies

Investment Companies

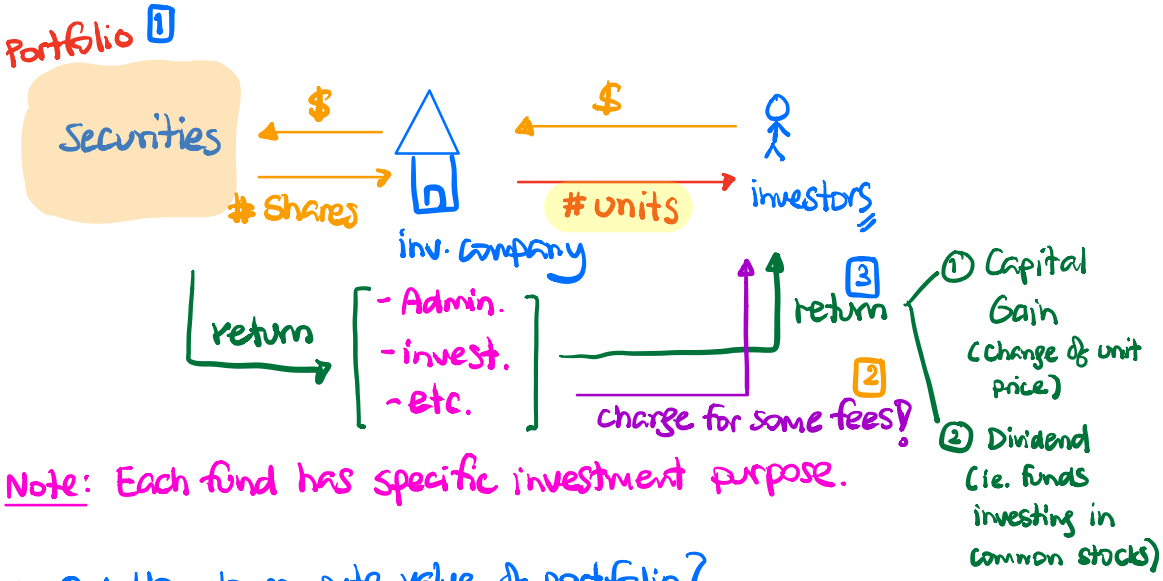
Q: Why do we want other people invest for us?
- No time to closely monitor
- Want diversification benefit → Lower Risk ↓ ⇒ Chance of loss ↓

- Pool funds of individual investors and invest in a wide range of securities or other assets ⇒ Return ↑

Q: How to have it?
- Investment Strategy
- Well-diversified portfolio (i.e. #Stocks ↑ → Risk ↓)

Since individual investors may not have huge capital to invest, they cannot have well-diversified port.

- Services provided:
  - Record keeping and administration
  - Diversification and divisibility
  - Professional management → person in charge of managing/ more market information etc.
  - Lower transaction costs → huge trading lots → (wholesale) = transaction cost ↓



Note: Each fund has specific investment purpose.

⇒ Q_1: How to compute value of portfolio?
Net Asset Value (NAV)

Q_2: What are charges/fees related to mutual fund investment?

Q: How to compute "total return" from investment?

Net Asset Value

- Net Asset Value (NAV):

Total value
value per invested unit = Total Value / #units

= the value of each share in the investment company

- Calculation: (9 / 11)

$$\frac{\text{Market Value of Assets} - \text{Liabilities}}{\text{Shares Outstanding}}$$

$$= \frac{\text{Market value of Equity}}{\#\text{shares}}$$

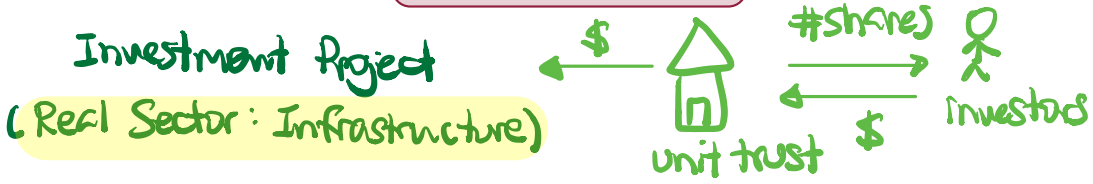
Investment Companies

Pro (at least) we get return at market

Con too conservative

Note: Interesting only when market index is increasing

- Investment Companies
  - Unit Investment Trusts
    - Fixed portfolio of uniform assets
    - Unmanaged
  - Managed Investment Companies
    - Declined from $105 billion (1990) to $94 billion (2016)
  - Other Investment Organizations



Investment Companies

"Mutual Fund"

- Investment Companies
  - Unit Investment Trusts
  - Managed Investment Companies
    - Open-End
    - Closed-End
  - Other Investment Organizations

Capital Market

* Price of share could be
- Premium:
  - good performance
  - pass expense/fee to share price
- Discount
  - poor performance - less benefits (No dividend)

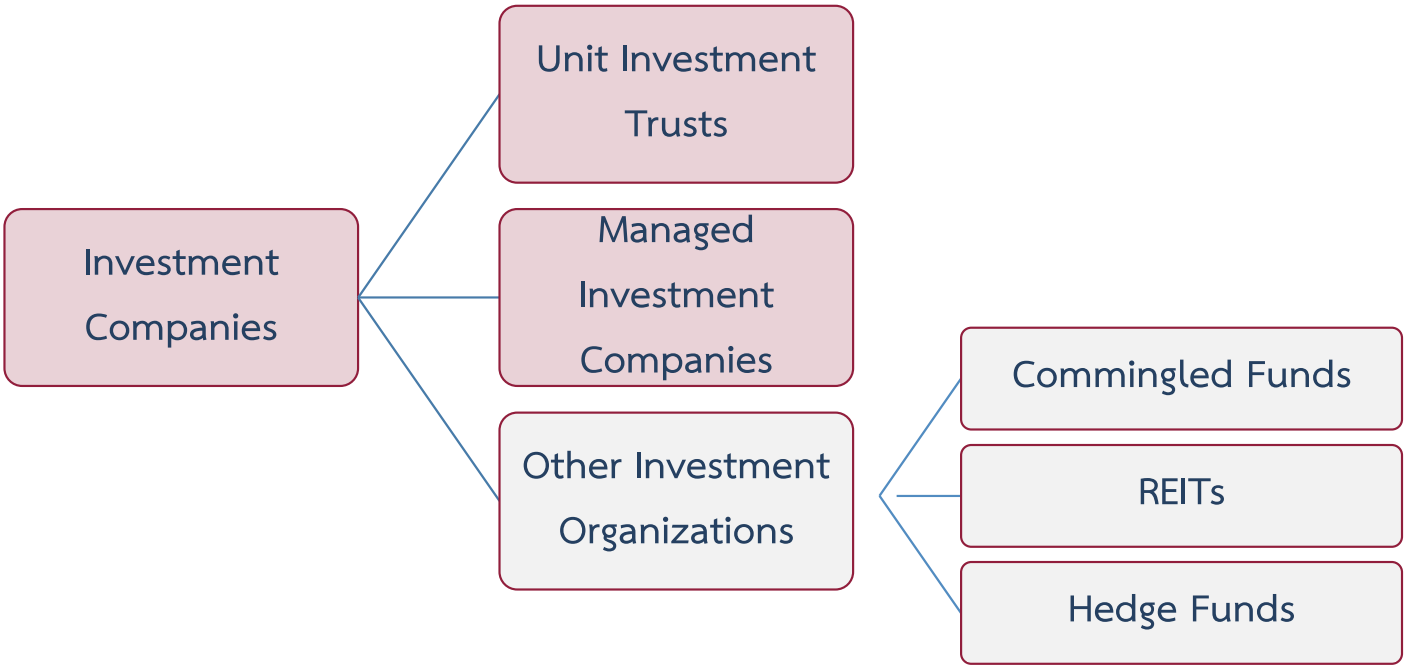
#shares - varied!

- Issues shares when investors buy; redeems shares when investors cash out
- Priced at Net Asset Value (NAV)

#shares - fixed!

- Shares outstanding constant; investors cash out by selling to new investors
- Priced at premium or discount to NAV ... why?

Investment Companies: Other Investment Organizations



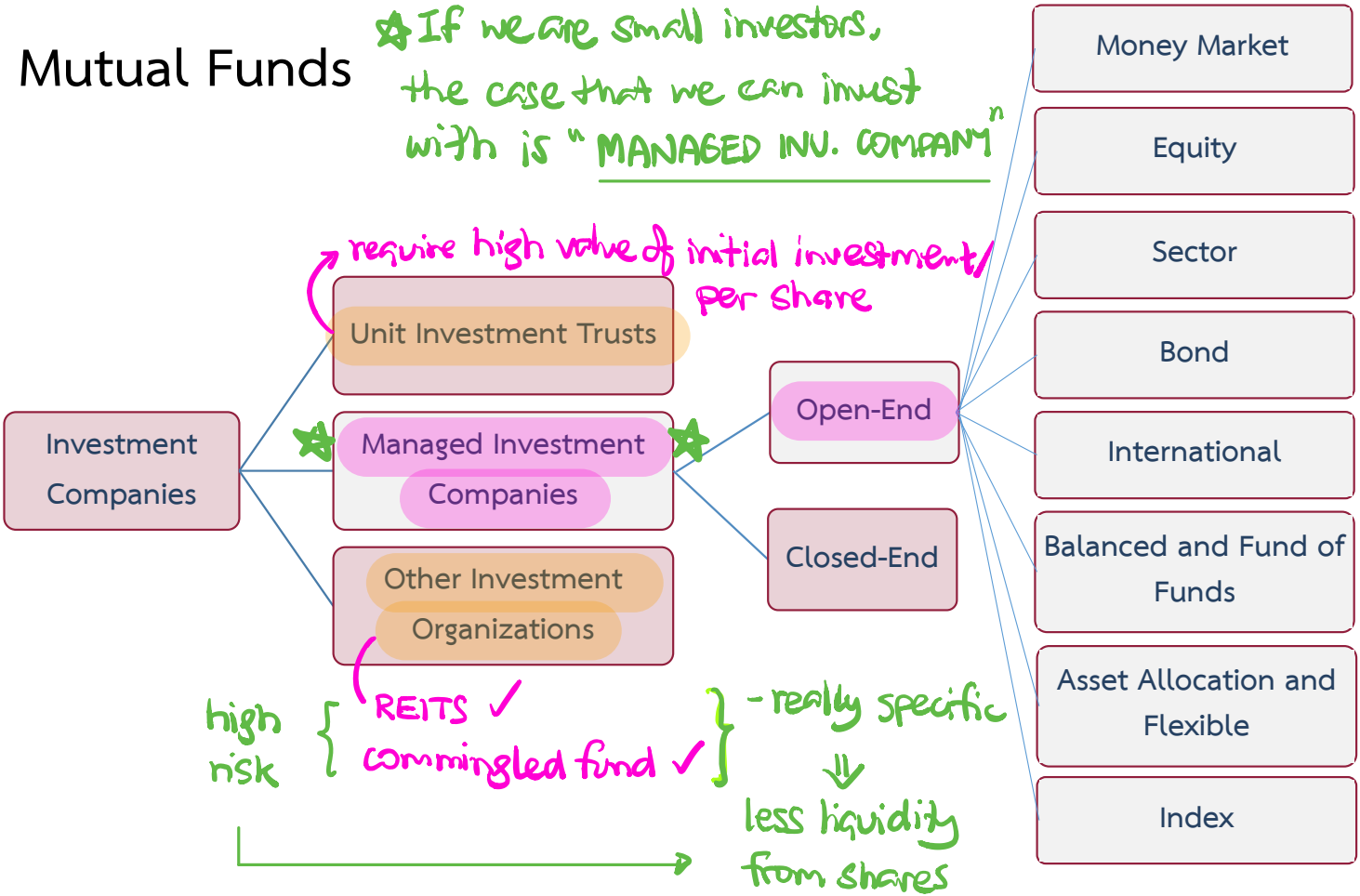
Investment Companies

- ***Commingled funds:*** partnerships of investors that pool funds.
- ***REITS:*** A Real Estate Investment Trust (REIT) is similar to a closed-end fund. REITs invest in real estate or loans secured by real estate. Most of them are highly leveraged, with a typical debt ratio of 70%.
- ***Hedge Funds:*** Commonly structured as private partnerships (and thus subject to only minimal SEC regulation), hedge funds allow private investors to pool assets to be invested by a fund manager.

Warren Buffett (L) and Berkshire-Hathaway partner Charlie Munger

Eric Francis | Getty Images

Mutual Funds



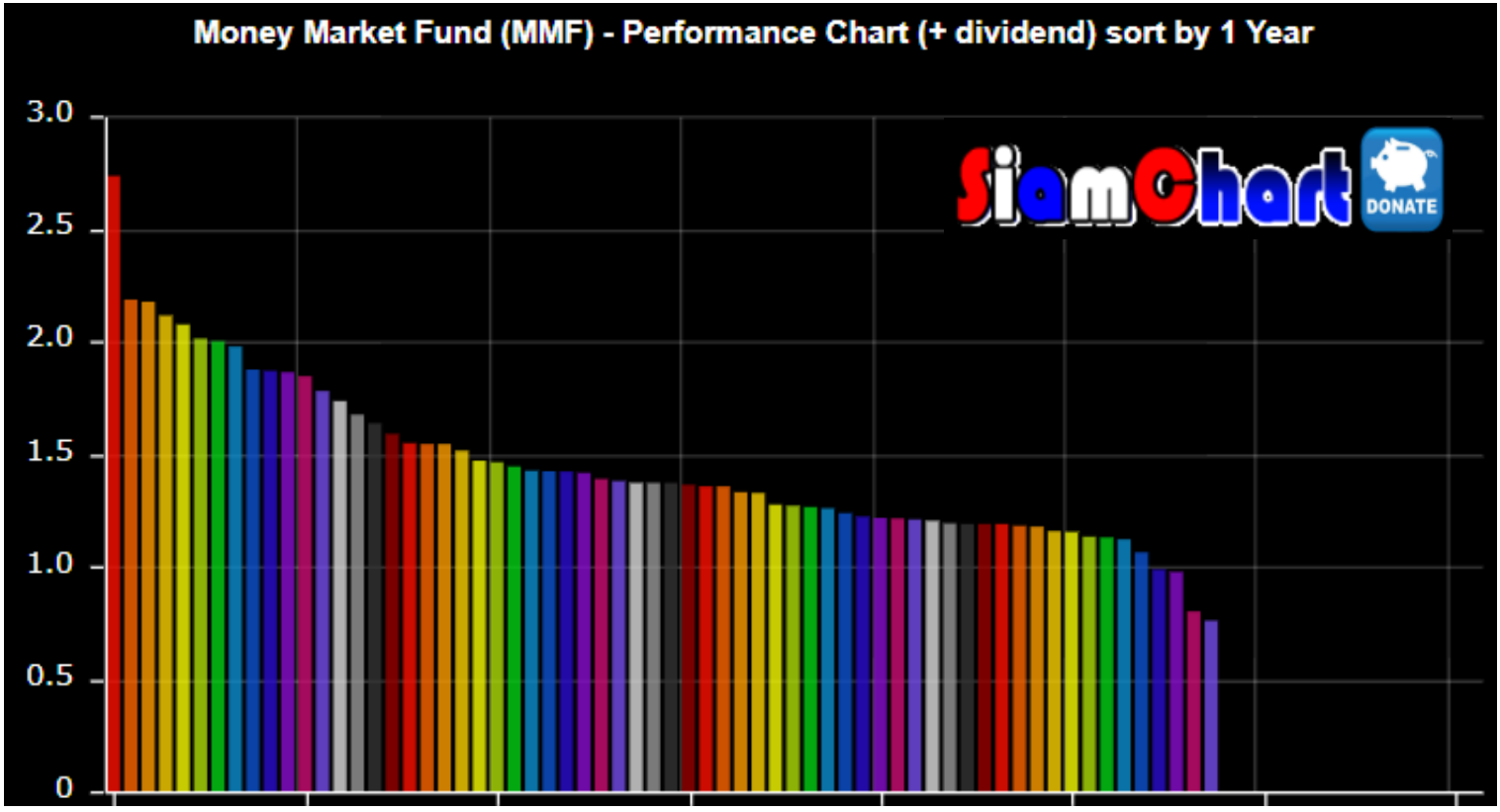
Different Types of

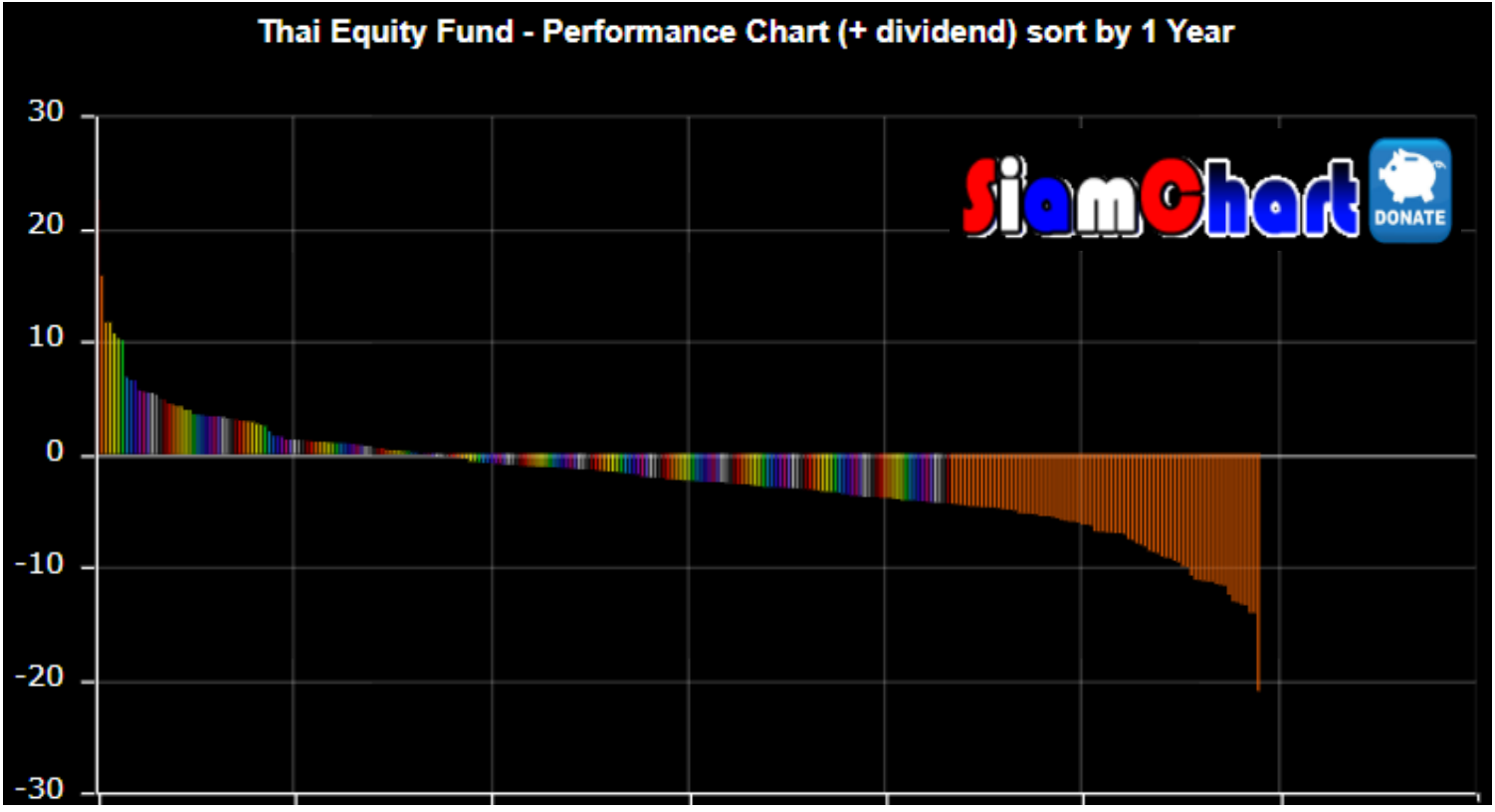
Mutual Funds: Investment Policies

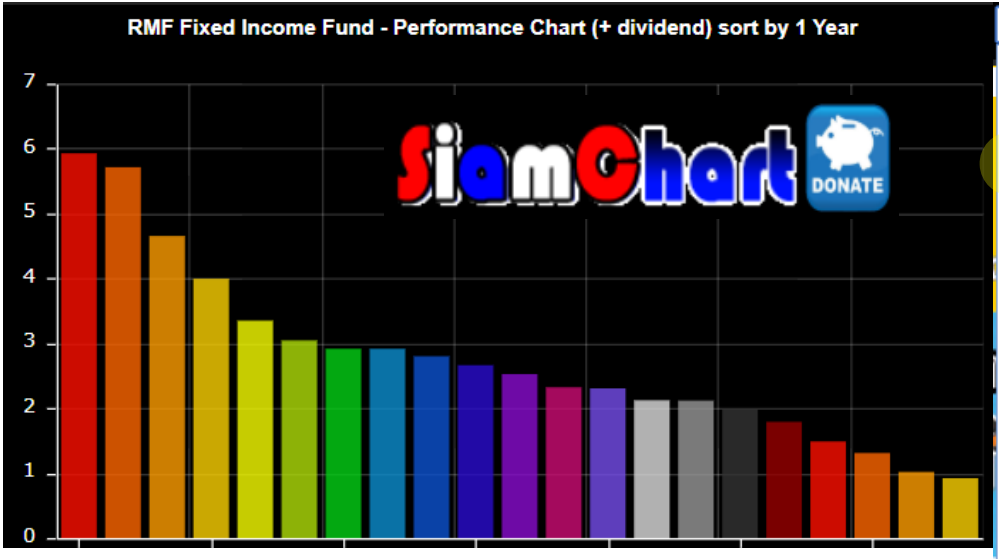
☆ Managed investment company ☆
"OPEN-END"

- *Money Market:* These funds invest in money market securities such as commercial paper, repurchase agreements, or certificates of deposit
- *Equity:* Equity funds invest primarily in stock
  - Big market cap stock
  - Small market cap stock
  - etc.
- *Sector:* Equity funds that concentrate on a particular industry.
  - Energy
  - Telecom.
  - Infrastructure
  - etc.
- *Bond:* Concentrate in the fixed-income sector.

	Obj. of investment	Types
Q: Younger	high return / Max. Profit (bear high risk)	Equity, Sector
Older	- saving for retirement - min. return (low risk)	Bond, Money Mar.


Money Market Fund (MMF) - Performance Chart (+ dividend) sort by 1 Year
3.0
2.5
2.0
1.5
1.0
0.5
0
SiamChart
DONATE


Thai Equity Fund - Performance Chart (+ dividend) sort by 1 Year
30
20
10
0
-10
-20
-30
SiamChart
DONATE



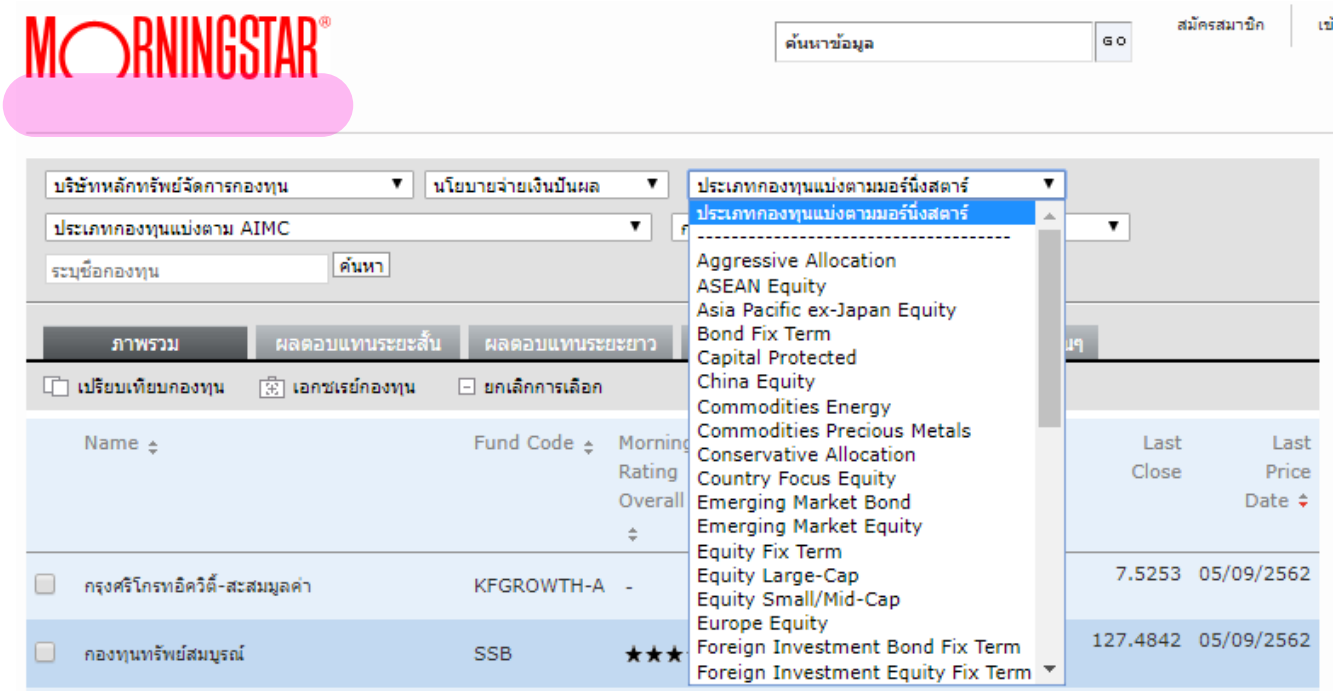
RMF Fixed Income Fund

- MMF & FIX Fund
- Fixed Income Fund (FIX)
- Thai Fixed Income Fund
- Foreign Investment Fund (FIF)
- FIF Fixed Income Fund
- FIF Equity Fund
- FIF Gold Fund
- FIF Oil Fund
- Equity Fund (EQ)
- Thai Equity Fund
- Thai Equity Fund with DIV
- EQ & FIX Mix Fund
- Property Fund (PROP)
- Long term Equity Fund (LTF)
- LTF 70/30
- LTF Equity Fund
- LTF with DIV
- Retirement Mutual Fund (RMF)
- RMF Money Market Fund
- RMF Fixed Income Fund

Mutual Funds: Investment Policies

- ***International Funds:***
  - *Global funds* invest in securities worldwide, including the United States
  - *International funds* invest in securities of firms located outside the United States
  - *Regional funds* concentrate on a particular part of the world
  - *Emerging market funds* invest in companies of developing nations
- ***Balanced Funds:***
  - *Life-cycle funds* are balanced funds in which the asset mix can range from aggressive (primarily marketed to younger investors) to conservative (directed at older investors)
  - *Targeted-maturity funds* gradually become more conservative as the investor ages
- ***Funds of funds:*** Mutual funds that primarily invest in shares of other mutual funds.
- ***Asset Allocation:*** May dramatically vary the proportions allocated to each market in accord with the portfolio manager's forecast of the relative performance of each sector
- ***Index:*** Tries to match the performance of a broad market index

Mutual Funds by Investment Classification



Mutual Funds: How Funds Are Sold

- How Funds Are Sold
  - Direct-marketed funds : sell to market directly / specific groups of investors
  - Sales-force distributed
    - Revenue sharing on sales force distributed : Dealer
    - Potential conflicts of interest
      - Inv. Company
      - Dealer
      - ☑ premium
      - ☐ discount
  - Financial supermarkets

⇓

Distort actual market price

→ BAD for investors (in secondary market)

Costs of Investing in Mutual Funds

- Fee Structure: (7/8)

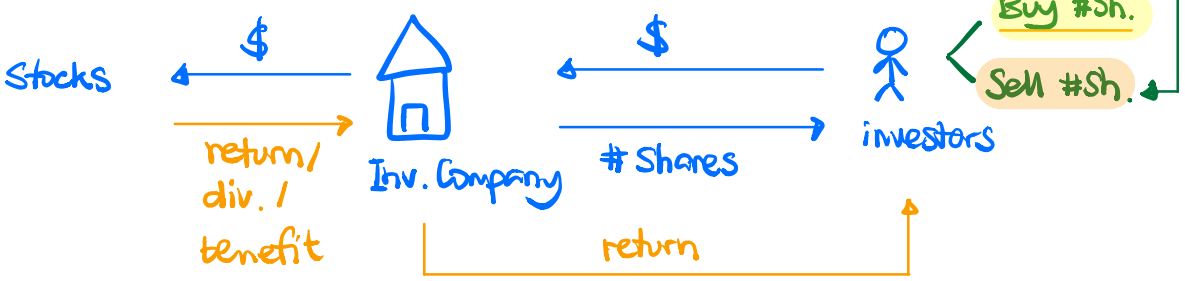
☆ What are costs/fees related?

1. **Operating expenses**
   = cost of money to run mutual fund
2. **Front-end load** / Cost of the initial purchase
3. **Back-end load** / Surrender charge / Redemption fee
4. **12 b-1 charge** / Service fee / Distribution fee
   = for marketing of the funds

- **Fees must be disclosed in the prospectus**
  - Share classes with different fee combinations

2. Front-end load / Cost of the initial purchase
= higher price

3. Back-end load / Surrender charge / Redemption fee
= sell at lower price



1. Operating expenses
= cost of money to run mutual fund

↳ NAV↓ = $\frac{\text{MV} - \text{Liability}\uparrow}{\#\text{Shares}}$

★ 4. 12 b-1 charge / Service fee / Distribution fee
= for marketing of the funds

} unit trust
Close-end
Open-end

Note: Because of related costs, we have one more term:

"Offering Price" vs "NAV"

"Offering Price" → Net Price/ Actual Price → ★ Price to buy/sell ★

"NAV" → Actual value of fund

Fees for Various Classes

Example 4.2 Fees for Various Classes

The table below lists fees for different classes of the Dreyfus High Yield Fund in 2016. Notice the trade-off between the front-end loads versus 12b-1 charges in the choice between Class A and Class C shares. Class I shares are sold only to institutional investors and carry lower fees.

⊕/⊖ ... share price

	Class A	Class C	Class I
Front-end load	0–4.5%[a]	0	0
Back-end load	0	0–1%[b]	0%[b]
12b-1 fees[c]	0.25%	1.0%	0%
Expense ratio	0.7%	0.7%	0.7%

[a]Depending on size of investment.
[b]Depending on years until holdings are sold.
[c]Including service fee.

deducted from performance of fund : Return

ex: If return of fund this year = 10%,

Net return for investor = 10% − exp. Ratio − (12b-1 fee) = 10% − 0.7% − 0.25% = 9.05%

Fees and Mutual Fund Returns

Capital Gain

Dividend

$$R = \frac{NAV_1 - NAV_0 + Income + Capital\ Gain}{NAV_0}$$

Other income

- Example:
  - Initial NAV = $20
  - Income distributions of $.15
  - Capital gain distributions of $.05
  - Ending NAV = $20.10

$$R = \frac{20.10 - 20 + 0.15 + 0.05}{20}$$

$$= \frac{0.30}{20}$$

$$= 1.5\%$$

Impacts of Costs on Investment Performance

Table 4.2

Impact of costs on investment performance

	Cumulative Proceeds (All Dividends Reinvested)		
	Fund A	**Fund B**	**Fund C**
Initial investment*	$10,000	$10,000	$ 9,200
5 years	17,234	16,474	15,502
10 years	29,699	27,141	26,123
15 years	51,183	44,713	44,018
20 years	88,206	73,662	74,173

*After front-end load, if any.

Notes:

1. Fund A is no-load with .5% expense ratio.
2. Fund B is no-load with 1.5% expense ratio.
3. Fund C has an 8% load on purchases and a 1% expense ratio.
4. Gross return on all funds is 12% per year before expenses.

Question?

7. An open-end fund has a net asset value of $10.70 per share. It is sold with a front-end load of 6%. What is the offering price?

8. If the offering price of an open-end fund is $12.30 per share and the fund is sold with a front-end load of 5%, what is its net asset value?

(7) NAV = $10.70 $\xrightarrow{6\%}$ Offering Price ?
front-end load

Recall
$NAV = \frac{MV - L}{\#\ Shares}$

$\Rightarrow$ From: NAV = Offering Price (1 − load)
MV − L

$\therefore$ Offering Price $= \frac{NAV}{1 - load} = \frac{\$10.70}{1 - 6\%} = \$11.38$

(8) Offering Price = $12.30 $\xrightarrow{\text{Front-end load } 5\%}$ NAV ?

$\Rightarrow$ From: NAV = MV − L = Offering Price − Cost
$= \$12.30 - 5\%\,(12.30)$

$\therefore$ NAV = $11.685

9. The composition of the Fingroup Fund portfolio is as follows:

Stock	Shares		Price	
A	(200,000	×	$35)	= 7,000,000
B	(300,000	×	40)	= 12,000,000
C	(400,000	×	20)	= 8,000,000
D	(600,000	×	25)	= 15,000,000

} 42 mil.

No Debt

The fund has not borrowed any funds, but its accrued management fee with the portfolio manager currently totals $30,000. There are 4 million shares outstanding. What is the net asset value of the fund?

↓ Liability

⇒ NAV (each share) = $\frac{MV - L}{\#shares} = \frac{\$42{,}000{,}000 - 30{,}000}{4{,}000{,}000} = \$\,10.49$

11. The Closed Fund is a closed-end investment company with a portfolio currently worth $200 million. It has liabilities of $3 million and 5 million shares outstanding.
   a. What is the NAV of the fund?
   b. If the fund sells for $36 per share, what is its premium or discount as a percent of net asset value?

⇒ NAV (each share) = $\frac{MV - L}{\#shares} = \frac{200 - 3}{5} = \$39.40$

⇒ price $36 per share → sold at DISCOUNT!

Discount (%) = $\frac{\$39.40 - 36}{39.40} = 8.63\ \%$

18. You purchased 1,000 shares of the New Fund at a price of $20 per share at the beginning of the year. You paid a front-end load of 4%. The securities in which the fund invests increase in value by 12% during the year. The fund's expense ratio is 1.2%. What is your rate of return on the fund if you sell your shares at the end of the year?

Return of fund

$\therefore$ Net Return of fund = Gross Return − Exp. Ratio − (12b-1 fee)

= 12% − 1.2% − 0

= 10.80%

Q: How much will you pay for investment?

Recall: NAV = MV − L (front %) · [Offer P.] · (#share)

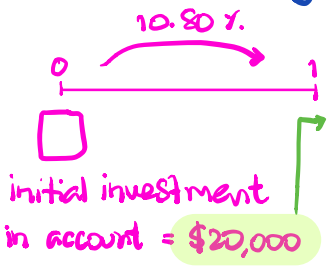
NAV: share price; MV: (#share) · [Offer P.]; 1 = share (per share)

$20 = P − 4%(P)

$\therefore$ P per each = $\frac{\$20}{1-4\%}$ $\Rightarrow$ P = $20.83

$\Rightarrow$ Total Capital = 1,000 ($20.83) = $20,833.33

Q: If we invest 1-year exact, what will be the value of $ investment?



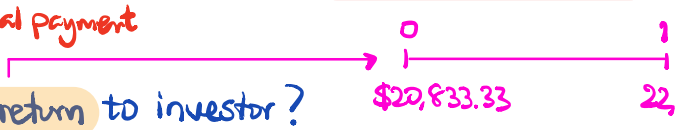
Account at Investment Company

Value = $20,000 (1 + 10.80%)

= $22,160

Investor's perspective

Note: $20,833.33 = actual payment



Q: What is actual return to investor?

Is it 10.80%? - NO!

because we pay more than $20,000 [$\Rightarrow$ 20,833.33]

$\therefore$ Actual Return = $\frac{22,160 - 20,833.33}{20,833.33}$

= 6.37%

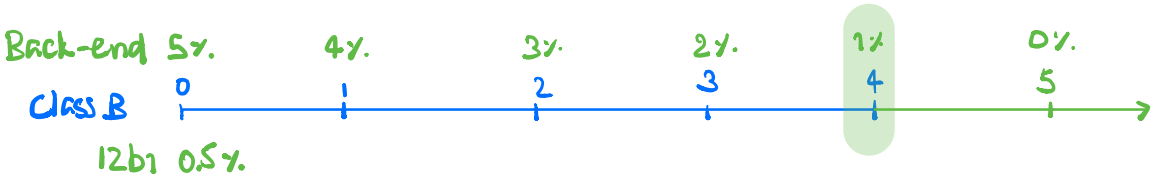
HW:

21. The Investments Fund sells Class A shares with a front-end load of 6% and Class B shares with 12b-1 fees of .5% annually as well as back-end load fees that start at 5% and fall by 1% for each full year the investor holds the portfolio (until the fifth year). Assume the portfolio rate of return net of operating expenses is 10% annually. If you plan to sell the fund after 4 years, are Class A or Class B shares the better choice for you? What if you plan to sell after 15 years?

Make-up Class: Wed. 18 Sep : 11 - 14.00 hours (Room 203)

Front = 6%.

Net R. = 10%.



12b1 0.5%.

Gross R = 10%.

Net R. = 9.5%.

Assume: Invest $1,000 ⟶ Value in Account (NAV) = MV - L ($ we pay)

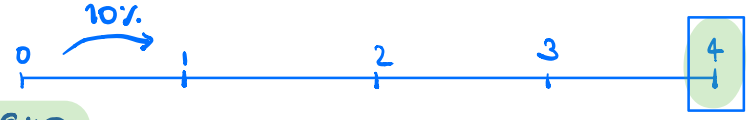
= $1000 - 6%.(1,000)

= $940

Q: If we agree to sell at the end of 4th year, which one is better?

⇒ Highest Value

Class A:



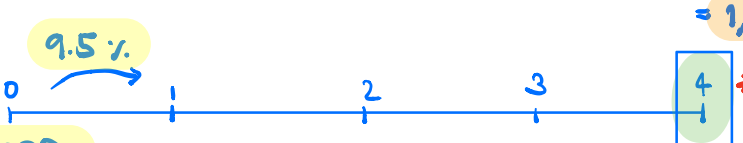
$940

$FV_4 = \$940(1+10\%)^4$

= 1,376.254

B

Class B:



$1000

$FV_4 = \$1{,}000(1+9.5\%)^4$

= 1,437.66

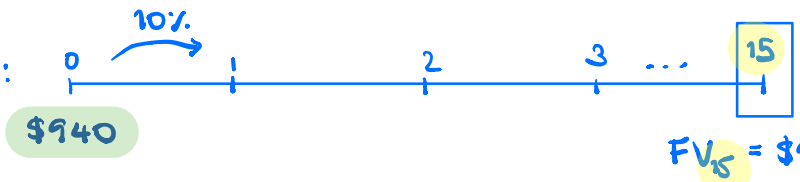
* 1%. Back-end

∴ Net value of Class B = 1,437.66 - 1%.(1,437.66)

= 1,423.28

15-years

Class A :



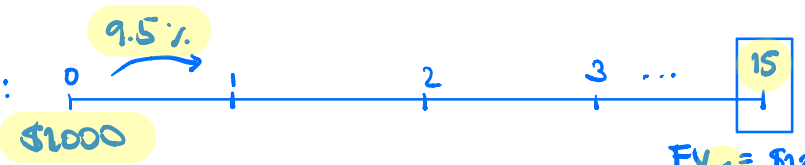
$940

$FV_{15} = \$940(1+10\%)^{15}$

$= 3926.61$

A

Class B :



$1000

$FV_{15} = \$1{,}000(1+9.5\%)^{15}$

$= 3{,}901.32$