



Bachelor of Economics  
**THAMMASAT UNIVERSITY**

# Introduction to Investment

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By  
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# Biography

- **Education**

- *Master of Financial Engineering*, Haas Business School, UC Berkeley
- *Bachelor of Economics* (international program), TU

- **Employment experience**

- *Quantitative trader*, hedge fund, Phatra securities
- *Senior analyst*, corporate strategy, SET
- *SBL and derivatives trader*, EDM, Phatra Securities

- **Awards**

- SET-Fulbright grantee 2010
- Second-runner up in national environmental debate 2007

- **Extra-curricular activities**

- *Song writer*, BE play
- *Vice president*, Thammasat Speaker Union

# Today Agenda

- Basic theory of an investment
- Introduction to an investment
- Systematic equity investment

Efficient Market Hypothesis (EMH)

# **PART 1: BASIC THEORY OF AN INVESTMENT**

# Development of EMH

- Up to 1960s, two approaches of investing:
  1. Fundamental analysis
    - Base investment decisions on research into financial and economic data
    - Graham and Dodd, Security Analysis (1934)
  2. Technical analysis (charting)
    - Base investment decisions on past price, volume, and return patterns
- Which approach is better?
- Which approach is more popular?

# Definition of EMH

- EMH claims that  $\text{Price} = E[\text{Price}^*]$
- $E[P^*]$  is the fundamental value

$$P = E[P^*] = \sum_{t=1}^{\infty} \left( \frac{CF_{nt}}{1 + R_{nt}} \right)$$

# Types of Information

- Three sets of information that could be used to come up with  $E[P^*]$  and three levels of efficiency
  1. Weak form efficiency: all past prices/returns are incorporated.
  2. Semi-strong form efficiency: all public information is included.
  3. Strong form efficiency: all information is included, public and private.

# Example

- What happens when an announcement is made?
- In an efficient market,  $P$  changes to reflect new information about
  - Expected cash flows of asset
  - Any change in discount rate for asset
- In an efficient market, only information can change  $P$

# Preconditions for efficient markets

1. All investors are rational
  - Rational investors value securities solely for their  $E[DCF]$ , and accurately use all information
2. Some investors are irrational but their over/under pricing is random
3. Investors may be irrational in systematic ways

# Testing the EMH

- How to test whether this equality holds?

$$P = E[P^*] = \sum_{t=1}^{\infty} \left( \frac{CF_{nt}}{1 + R_{nt}} \right)$$

- Direct approach: Compute  $E[P^*]$ , see if it equals  $P$ 
  - Not easy !

# Testing the EMH (2)

- Indirect approach is more common
  - See whether, using a given information set, one can forecast “abnormal returns”
  - Avoid having to forecast CFs
  - But still need to pick appropriate  $E[R]$

# Testing weak form EMH

- Weak form efficient market incorporates all info from prior prices
- Trading rule based on prior prices should not result in abnormal returns
- i.e. there should be no serial correlation of returns

# Testing semi-strong form EMH

- “Semi strong efficient” market incorporates all public information
- Prices react quickly and accurately
- Example: Stock splits (Fama, French, Jensen, Roll 1969)
- Testing: perform an event study
  - See if there are cumulative abnormal returns for a group of stocks subsequent to experiencing a common event

# Testing strong form EMH

- A “strong form” efficient market incorporates ALL information
  - public and private
    - So even insiders cannot make money
- Studies find that insider trading is profitable
- So, early evidence was that market is NOT strong form efficient

# Class Experiment: What is your strategy?

Please write down a number between 0 and 100 (inclusive) such that your guess will be as close as possible to  $2/3$  of the average guess.

Put your name on your card.

Winner gets 100 THB.

# A Beauty Contest

- What is the Nash equilibrium for this game?
- What happens if you play the Nash equilibrium play and no one else does so?
- What does this experiment imply to an investment and EMH?
- Frequency Dependent Strategies ??

# PART 2: INTRODUCTION TO AN INVESTMENT

# Money Management

- How do you manage your own wealth?
  - Savings deposit?
  - Time deposit?
  - Invest in stocks?
  - Invest in government bond?
  - Invest in mutual funds?
  - Do nothing !!
- What should you consider for your investment?
  - Return
  - Risk

# What is the opportunity cost of doing nothing?

## Returns across several asset classes as of September 30, 2011

Returns (%)	Past 1 year	Past 2 Years	Past 3 years
<b>1. Equity</b>			
SET index	-6.06	27.77	53.59
SET50 index	-5.65	24.32	52.51
mai index	-1.67	22.60	13.61
<b>2. Bank deposit*</b>			
Saving deposit	0.88	1.61	3.26
Time deposit			
6 months	2.10	3.17	6.14
12 months	2.43	3.58	6.63
24 months	2.73	4.91	8.19
<b>3. Bond</b>			
Short-term government bond	2.24	3.59	6.00
Composite bond index	-0.05	8.57	16.11
<b>4. Commodities</b>			
Gold	24.12	76.68	77.12
Oil	-0.96	12.17	-21.30

**Remark:** \*The bank deposit is an average rate of all commercial banks

# Investment 101: What is return?

- Basically, return is the ratio of what you earn/lose on an investment relative to the amount of money invested
  - For example, you deposit 10,000 THB in a bank, and you receive 70 THB as an interest. Your return is 0.7%.
- What level of return would you expect from your investment?
  - Depend on your risk aversion
  - Depend on type of investment
  - Depend on investment horizon
  - Depend on your benchmark
  - Etc.

# Investment 101: What is risk?

- Basically, risk is the probability that an investment's actual return will be different than expected. This includes the possibility of losing some or all of the original investment.
  - For example, your expected return is 2% p.a. while your actual return is 2.5% p.a. on average.
  - Risk will be the deviation of each year's actual return to your expected return (2%).
  - Also known as the standard deviation of return
- Are you risk aversion, risk neutral or risk seeking?

# Incorporate Return & Risk

- As we are concerned on both return and risk, how would be incorporate both factors?
  - We might consider on return per risk unit !!!
- The Sharpe ratio measures the excess return per unit of risk.

$$S = \frac{E[R_a - R_b]}{\sigma} = \frac{E[R_a - R_b]}{\sqrt{\text{var}[R_a - R_b]}}$$

# Example of Fund Performance pages

02-Nov-12 บริษัทหลักทรัพย์ ภัทร จำกัด (มหาชน) Phatra Securities Public Company Limited	Fund <sup>^</sup> Size Bt mn	NAV Bt	Past Performance %									Annualized Std Dev %		Annualized Sharpe Ratio		Beta
			1M	3M	6M	1Y	YTD	3Y	2009	2010	2011	1Y	3Y	1Y	3Y	1Y
<b>Equity Fund Benchmark #</b>																
SET			0.07	8.78	5.45	35.29	27.43	92.94	63.25	40.60	(0.72)	13.46	18.15	1.96	1.06	
SET 50			(0.45)	6.57	1.33	29.25	22.99	85.08	64.54	38.31	(0.25)	15.15	20.24	1.45	0.89	
SET 100			(0.07)	7.46	2.51	31.38	24.44	88.02	66.87	40.42	(0.87)	14.75	19.88	1.60	0.93	
SET TRI			0.18	10.05	7.20	40.74	31.87	119.40	71.35	47.80	3.69	13.43	18.09	2.25	1.30	
SET 50 TRI			(0.38)	7.82	2.98	34.33	27.04	108.15	72.08	44.72	3.74	15.12	20.18	1.70	1.08	
SET 100 TRI			0.00	8.71	4.15	36.49	28.52	112.12	74.67	47.21	3.23	14.72	19.84	1.85	1.13	
<b>Index and Semi-Index Funds</b>																
K SET 50 Index+	1,413	24.00	(0.45)	7.54	2.78	33.61	26.45	106.92	70.36	44.19	4.12	15.00	19.97	1.68	1.08	0.99
Krungsri Enhanced SET 50+	156	16.81	(0.28)	7.93	0.31	29.00	23.46	97.40	70.56	47.10	(1.39)	15.71	20.72	1.39	0.97	1.16
TMB SET 50 +	4,195	69.87	(0.25)	7.64	2.88	33.59	26.38	105.94	71.07	44.23	3.63	15.01	20.04	1.68	1.07	0.99
TMB SET 50 Dividend * +	950	7.64	(0.24)	7.66	2.97	33.69	26.46	105.67	70.45	43.81	3.75	14.94	19.96	1.69	1.07	0.98
TMB Jumbo 25 ++	2,326	29.46	(0.63)	5.86	0.69	31.09	25.16	107.65	63.66	43.18	6.65	15.47	20.34	1.51	1.07	1.13
1 A.M. SET 50 +	698	35.92	2.07	11.15	8.79	44.61	36.68	128.64	57.12	46.81	4.21	13.83	19.39	2.37	1.28	0.88
SCB SET Index	2,710	14.70	0.17	9.21	5.63	37.67	29.11	103.12	68.59	44.14	1.43	13.58	18.22	2.07	1.15	1.01
UOB Smart Active SET 100	165	25.41	1.36	9.56	8.35	38.00	32.25	104.90	58.66	40.62	1.69	13.76	18.94	2.06	1.12	0.91
SCB SET Banking Sector*	212	12.58	(3.15)	2.89	6.15	39.51	35.50	N/A	N/A	N/A	N/A	20.04	N/A	1.47	N/A	1.00
SCB SET Energy Sector*	189	10.13	1.27	6.90	(5.59)	12.52	6.24	N/A	N/A	N/A	N/A	18.47	N/A	0.47	N/A	0.99
<b>Managed Funds</b>																
Aberdeen Growth	5,171	93.38	1.79	14.69	12.09	51.54	41.67	134.98	55.74	43.55	8.57	12.27	14.33	3.04	1.79	0.82
Aberdeen Siam Leaders	534	36.79	1.87	14.81	12.01	50.98	41.39	133.79	60.98	43.07	8.54	12.83	15.26	2.88	1.67	0.87
Aberdeen Small Cap Fund	1,151	32.91	(0.30)	13.50	12.16	55.80	44.68	153.91	57.92	55.56	7.20	10.85	12.78	3.68	2.20	0.60
Aberdeen Thai Equity Dividend*	361	8.73	1.04	9.53	8.35	34.25	28.00	88.34	31.57	29.83	8.25	8.82	10.03	2.91	1.85	0.58
Finansa Enhanced Equity*	779	19.05	(0.29)	6.13	0.50	28.68	22.02	79.94	48.67	32.84	3.25	15.16	18.77	1.43	0.91	0.94
ING Thai Equity	892	47.68	3.70	11.27	9.05	45.97	36.07	101.48	75.46	44.42	(5.82)	14.54	20.50	2.32	1.01	0.99
K Equity *	2,401	16.44	(0.82)	5.59	1.75	30.67	25.79	103.47	60.97	59.48	(6.87)	14.74	20.82	1.57	1.01	1.08
KSTAR	1,655	24.11	0.38	7.58	4.32	36.27	29.76	112.47	62.07	62.18	(6.75)	14.61	20.77	1.86	1.08	1.07
K-Valued Stock *	1,531	7.25	(0.29)	9.41	8.85	43.34	34.00	120.83	59.23	47.60	2.12	12.94	17.53	2.47	1.35	0.91
Ruang Khao High Income *	1,050	6.78	(0.68)	5.63	1.40	30.87	25.53	104.64	58.53	59.38	(5.83)	14.87	20.81	1.56	1.02	1.09
Krungsri Dividend Stock *	4,426	15.54	1.70	13.37	7.65	46.76	34.26	159.10	56.48	61.80	8.16	12.88	15.78	2.66	1.82	0.85
Krungsri Dynamic	526	24.01	2.40	8.89	(0.66)	27.46	17.84	104.83	62.36	44.09	9.64	14.53	19.17	1.42	1.11	1.00
Krungsri Star Equity	986	19.70	1.81	9.39	0.25	26.40	18.67	67.54	54.19	30.27	(0.68)	14.39	19.51	1.38	0.76	1.02
Krungsri Star Equity Dividend*	909	12.51	1.91	9.50	0.35	26.34	18.65	68.59	54.07	31.41	(0.93)	14.43	19.53	1.37	0.77	1.02
Krungsri Value Stock	864	26.78	1.80	13.45	7.77	46.44	34.26	162.96	56.09	61.17	8.30	12.91	16.00	2.64	1.83	0.85
Krung Thai Dividend Selected*	354	11.31	(0.17)	7.94	4.50	33.04	27.32	85.99	62.07	33.11	0.17	14.15	18.16	1.75	1.00	1.04
Krung Thai Selective Equity*	268	14.56	(0.66)	10.13	6.44	33.44	28.46	112.05	61.73	43.58	4.72	13.94	18.00	1.80	1.24	1.00
ONE Plus ONE *	329	17.11	1.95	11.04	7.14	38.91	30.67	104.08	62.29	48.32	(2.58)	13.86	19.41	2.09	1.09	0.99

# PART 3: SYSTEMATIC EQUITY INVESTMENT

# Type of Investment Products

- Your own choice
  - **Equity**
  - Fixed-income
  - Commodities
  - Cash equivalent products
  - Real estates
  - Derivatives
  - Other alternative investments
  - Etc.
- Fund management
  - Index funds
  - Active funds
  - Private funds
  - **Hedge funds**
  - etc

# Equity Investment Process

- Step 1: State your investment goal and horizon  
(e.g., capital appreciation, principal protection)
- Step 2: Define your stock universe
- Step 3: Select stocks based on your investment style
- Step 4: Construct your portfolio
- Step 5: Execute your investment strategy
- Step 6: Evaluate your portfolio performance
- Step 7: Rebalance your portfolio

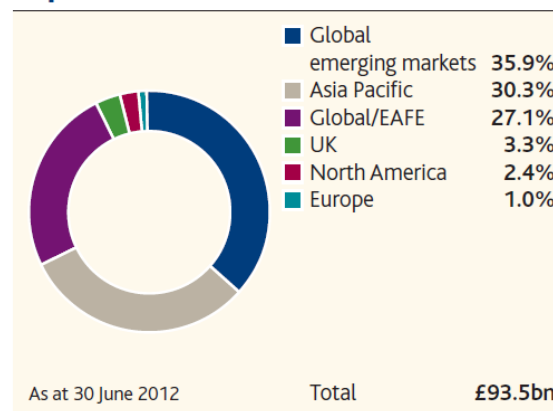
# Example of Equities Investment - Aberdeen

- Bottom-up investment style, emphasizing company fundamentals
- Low portfolio turnover, buying stocks and holding them for the long term
- Active management by identifying good quality stocks, defined chiefly in terms of management and business mode, which are attractively priced

## Equity investment process



## Equities breakdown



Source: Aberdeen Asset Managers Limited

# Introduction to Hedge Fund

- What are hedge funds?
  - Investment funds that aim to achieve the best risk and return tradeoff by employing:
    - Several investment strategies
    - Several asset classes
    - Long and short positions
    - Leverage
- Currently, the total assets under management is around \$2 trillion (baht 60 trillion – almost 7 times Thailand's GDP).
- Hedge fund industry is very profitable.
  - Fee structure used to be 2/20. Now it is more like 1.5/15.

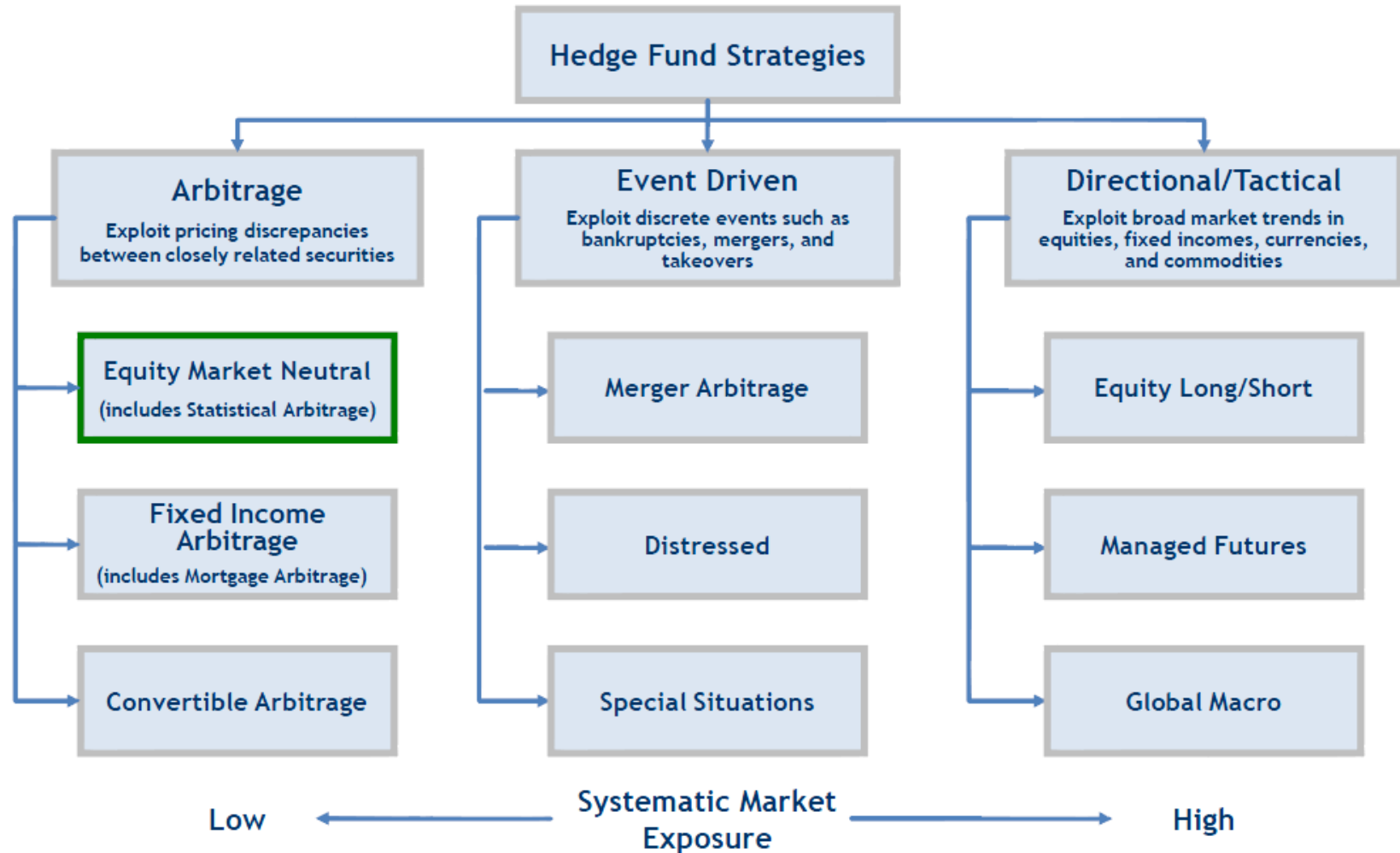
# Introduction to Hedge Fund (cont.)

- Hedge funds are lightly-regulated.
  - Mostly registered in offshore jurisdictions.
  - Limited reporting requirement on the activities and positions.
- Hedge funds are offered to a limited group of clients.
- Roles of hedge funds in the economy:
  - Hedge funds help increase the efficiency of market prices.
  - But may create financial instability if the market and hedge funds are not well regulated.

# Type of Hedge Funds

- There are three major ways we can group the type of hedge fund.
  1. Group by investment strategy
    - Arbitrage
    - Event driven
    - Direction/Tactical
  2. Group by investment universe
    - Asset class: Equities, Fixed-incomes, Currencies, and Commodities
    - Country: Developed versus Emerging and Regions
  3. Group by implementation method
    - Fundamental: The traditional and majority of the hedge funds.
    - Systematic: Popular among equity and global macro funds.

# Hedge Fund Classification by Investment Strategies



# Typical Reasons for the Failure of Hedge funds

Reasons	Outcomes	Phatra's Pre-cautionary Measures
Investment ideas do not work	Portfolio losses	<ul style="list-style-type: none"> <li>• Closely monitor investment ideas performance</li> <li>• Understand the rationale and economic environments that we expect ideas to perform and not perform</li> <li>• Research new investment ideas</li> </ul>
High level of leverage	Significantly amplify portfolio losses	<ul style="list-style-type: none"> <li>• Limit the level of leverage</li> <li>• Currently our strategies have a maximum leverage of 2 times</li> </ul>
Abrupt significant clients' capital withdrawals	Affect existing portfolio values and sometimes amplify losses	We have full control of the capital withdrawal and can take this into consideration when we want to withdraw capital.
Fraud	<ul style="list-style-type: none"> <li>• Take excessive risk</li> <li>• Negatively impact portfolio values</li> </ul>	<ul style="list-style-type: none"> <li>• Strict compliance on the operation of the Hedge Fund Department</li> <li>• Strict compliance on the personal trading accounts</li> </ul>

# Q&A