

# Economic & Industry Analysis and market structure

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FN 451



## Today's outline

- Equity valuation process
  - Economic analysis
  - Industry analysis
  - Company analysis



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## What is purpose of economic and industry analysis?

- Economic growth effects industry growth and firm performance.
- Expectations of economic growth affects stock market direction.
- International economics effects international fund flows.
- Identify industry cycles in order to time asset allocation.
- Without thorough understanding of economics and industry, you are probably guessing market directions and firm performance blindly.



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## Economic analysis

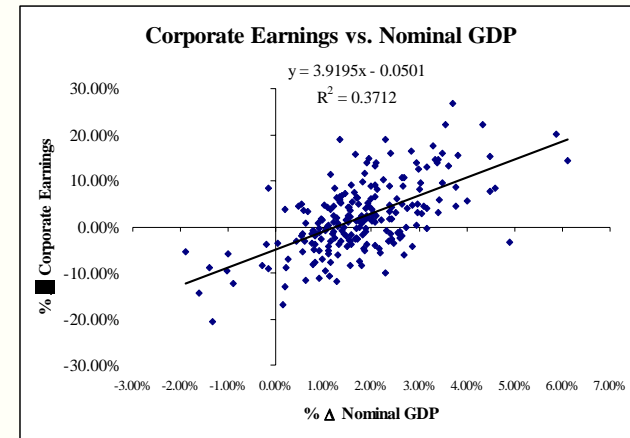


# Macro Economic Analysis

- There is a strong linkage between growth in the overall economy and growth in company earnings (which drive stock prices, at least in the long run).
- The following graph shows that changes in nominal GDP explain about 37% of the changes in corporate profits on average.
- Obviously, then, to know where earnings (and thus stock prices) are going, we need to know where GDP is going.
- A GDP forecast is our starting point. This forecast can be had from a number of sources including brokerage firm analysts, bank economists, and the central banks.



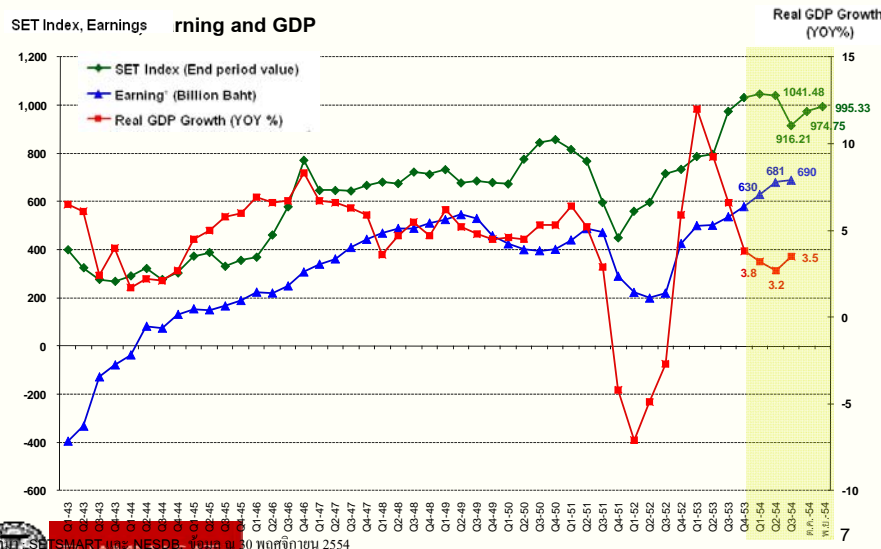
# Earnings & GDP



Data Source: <http://www.freelunch.com>  
Data are from Q1 1946 to Q2 2001



อัตราการเติบโตทางเศรษฐกิจในไตรมาส 3/2554 ปรับตัวดีขึ้นจากไตรมาสก่อนหน้า ในขณะที่ผลกำไรสุทธิของบริษัทจดทะเบียนยังคงเติบโตต่อเนื่อง สำหรับ SET Index หลังจากการปรับลดลงค่อนข้างมากในไตรมาสที่ 3/2554 SET Index ได้ปรับเพิ่มขึ้นในเดือนพฤศจิกายน 2554 อย่างต่อเนื่อง



# Economic analysis process

-Identifying continuation of **current trend** (expansion, contraction) and **turning points in the business cycle** (peak, trough)

-Identifying **key drivers** for the economic growth.

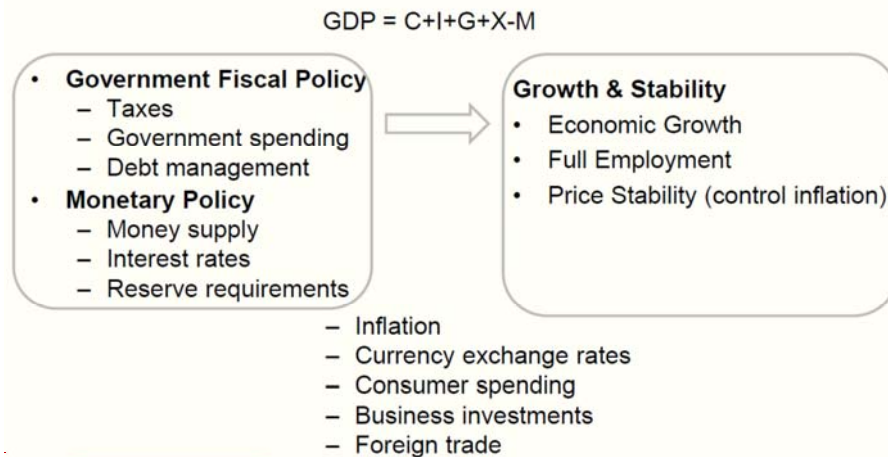
- How does the business cycle **relate to fiscal policy and monetary policy / money supply, interest rate, inflation and growth?**

**Industries** can respond differently to **business cycle**

**Impacts on company:** How do the economic cycle, monetary policy and fiscal policy affect the industry and the company?; Key economic indicators that impact business of the company. What are the impacts / outlook?



## How does the business cycle relate to Fiscal and monetary policy?



## The environment in favor of equity securities price

### The environment in favor of equity securities price:

- Increased money supply
- Low interest rates
- Low inflation
- Fast-growing economic growth

## Characteristics of an Economic Boom

- Strong and rising level of aggregate demand
- Often driven by fast growth of consumption
- Rising employment and real wages
- High demand for imported goods & services
- Government tax revenues will be rising quickly
- Company profits and investment increase
- Increased utilisation rate of existing resources
- Danger of demand-pull and cost-push inflation if the economy overheats

## Characteristics of an Economic Recession

- Declining aggregate demand for output
- Contracting employment / rising unemployment
- Sharp fall in business confidence & profits
- Decrease in fixed capital investment spending
- Reduced inflationary pressure
- Falling demand for imports
- Increased government borrowing
- Lower interest rates from central bank

## Quick Questions

- What stage of the business cycle do you think the global economy is in now?
- Why does investment fluctuate more than consumption in the business cycle?
- What 2 ways might a business benefit from a recession?



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## Industry analysis



## Cyclical or non-cyclical

**Cyclical industries** are highly dependent on the stage of the business cycle (performance is highly related to economic activity). These firms have high earnings volatility and operating leverage.

**Non-cyclical industries** produce goods and services for which demands are relatively stable. Non-cyclical industries can be grouped into **defensive (stable) or growth**.

**Cyclical industries:** energy, petrochemical, soft commodities, materials, technology and consumer discretionary.

**Defensive industries:** utilities, healthcare, consumer staples

**Growth industries:** E-Commerce, biotechnology, environmental consulting, video games\*

*\*Top 10 fastest growth industries according to IBISWorld*



## Capital intensive industry

**Capital intensive industries** have **high barrier of entry**, as it will be costly to enter or exit. **Overcapacity can result in intense price competition.**

**Capacity:** Producers may overshoot the optimal industry capacity, especially in cyclical market. Producers may start to expand capacity during an economic expansion. By the time they bring the additional production on the market, the economy may enter a recession.



## Cyclicals

- Credit cyclical: Banks, property
  - BNP Paribas: CAC40, Credit Agricole: CAC40
- Consumer cyclical: Luxury goods
  - LVMH: CAC40, Daimler: DAX
- Capital goods: Building materials, Chemicals
  - Total: CAC40, Air liquide: CAC40, Vinci : CAC40



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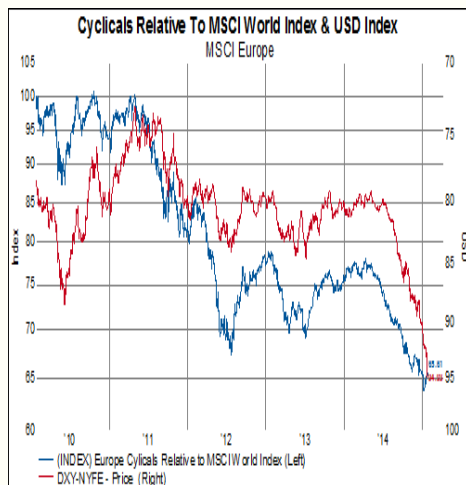
## Counter cyclicals (Defensive)

- Basic consumer goods & services:
  - Groupe Danone: CAC40, Deutsche Post: DAX, Hindustan Unilever: BSE
- Utilities
  - Veolia Environnement: CAC40, Électricité de France: CAC40, Reliance Infrastructure: BSE



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## Performance of European cyclicals



MSCI Europe cyclicals have significantly underperformed the MSCI World index.

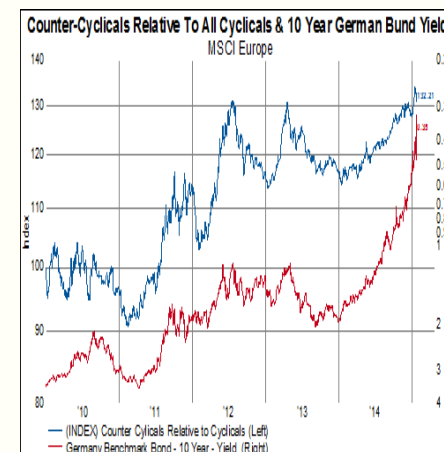
Strength in the USD (red line, inverse, right scale) is highly correlated to the relative performance of cyclicals (blue line, left scale).

Based recent experience, a falling Euro and falling rates in Europe are a bad combination for European cyclicals.



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## Performance of European counter cyclicals



- Growth counter-cyclicals have outperformed cyclicals by 65% over the last five years.



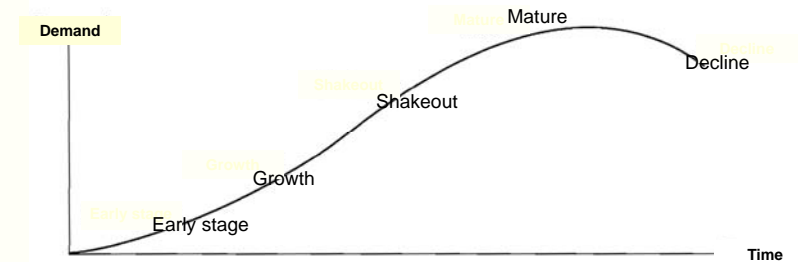
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# Industry life cycle

- An industry stage in the cycle has an impact on **growth, competitive structure, cost and profit.**
- An industry stage in the cycle affects business strategies, including **pricing, marketing, cost cutting and R&D**
- An industry's stage will change over time.



# Industry life cycle



**The five phases of the industry life cycle:**

- Early stage
- Growth
- Shakeout
- Mature
- Decline



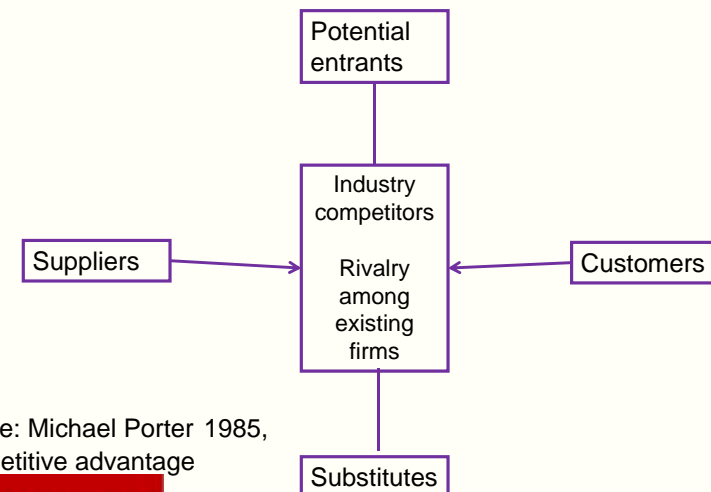
# Components of industry analysis

## Characteristics of the industry:

- Nature of the industry
- Regulatory and tax conditions
- Competitive structure / Threats of new entrants
- Labor conditions
- How important are technological developments?
- Vulnerability to external shocks
- Which economic forces have the most impact on the industry (e.g., interest rates, foreign trade)?
- What are the important financial and operating considerations (e.g., access to capital)?
- Historical performance and performance outlook
- Degree of operating leverage and financial leverage
- Price history (valuation)



# Demand, supply, and competition



Source: Michael Porter 1985, Competitive advantage

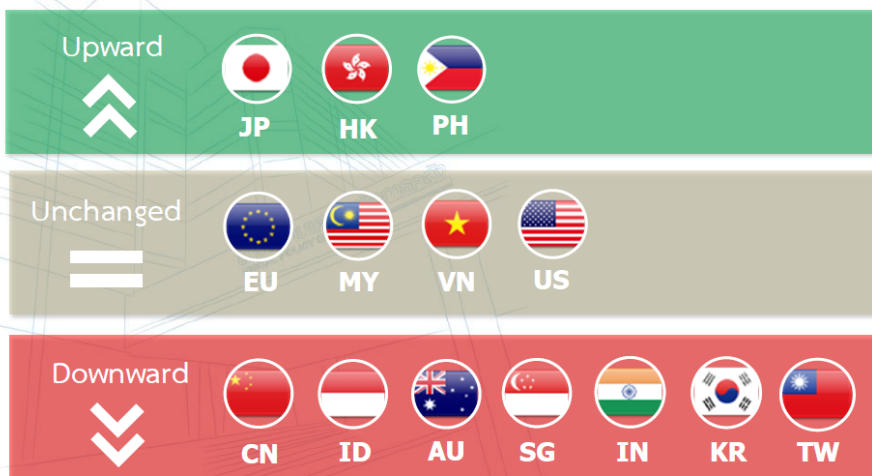


## 6 Major Assumptions Underlying Sep 2013 Economic Projection

- 1 14 Major Trading Partners' Economies
- 2 Dubai Crude Oil Price
- 3 Export & Import Prices
- 4 Baht/USD Exchange Rate
- 5 Policy Interest Rate
- 6 Public Expenditures



## Assumption 1 : Economic Growth of 14 Trading Partners in 2013



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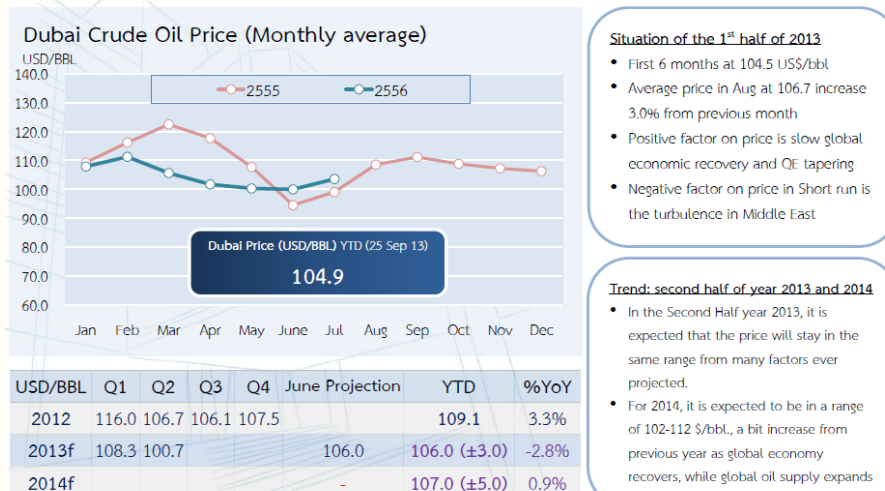
## Assumption 1 : Economic growth of 14 trading partners in 2013

Major Trading Partners by Export Shares in 2011 >> 2012	2012	2013							2014	
		Q1	Q2	FPO	FPO	IMF	IMF	FPO	IMF	
				Jun-13	Sep-13	Apr-13	Jul-13	Sep-13	Jul-13	
<b>14 Countries (77.5% &gt;&gt; 75.1%)</b>	<b>3.4</b>	<b>2.8</b>	<b>3.3</b>	<b>3.4</b>	<b>3.3</b>	<b>3.5</b>	<b>3.4</b>	<b>3.8</b>	<b>4.0</b>	
1.China (11.8% >> 11.7%)	7.8	7.7	7.5	7.9	7.6 ↓	8.0	7.8 ↓	7.5	7.7	
2.Japan (10.7% >> 10.2%)	2.0	0.3	1.2	1.5	1.9 ↑	1.6	2.0 ↑	1.3	1.2	
3.USA (9.8% >> 9.9%)	2.8	1.3	1.6	2.0	2.0	1.9	1.7 ↓	2.4	2.7	
4.Eurozone (7.5% >> 6.5%)	-0.5	-1.0	-0.5	-0.5	-0.5	-0.3	-0.6 ↓	0.8	0.9	
5.Hongkong (5.4% >> 5.7%)	1.4	2.9	3.3	3.0	3.1 ↑	3.0	3.0	4.1	4.4	
6.Malaysia (5.6% >> 5.4%)	5.6	4.1	4.3	4.7	4.7	5.1	5.1	5.0	5.2	
7.Australia (3.6% >> 4.9%)	3.6	2.4	2.6	3.0	2.6 ↓	3.0	3.0	3.0	3.3	
8.Indonesia (4.5% >> 4.9%)	6.2	6.0	5.8	6.3	5.6 ↓	6.3	6.3	6.0	6.4	
9.Singapore (5.1% >> 4.7%)	1.3	0.2	3.8	2.2	2.1 ↓	2.0	2.0	5.1	5.1	
10.Vietnam (3.2% >> 2.9%)	5.0	4.9	5.0	5.0	5.0	5.2	5.2	5.3	5.2	
11.India (2.3% >> 2.4%)	5.1	4.8	4.4	5.8	4.6 ↓	5.7	5.6 ↓	5.0	6.3	
12.Phillippines (2.1% >> 2.1%)	6.8	7.7	7.5	5.1	5.5 ↑	6.0	6.0	5.3	5.5	
13.South Korea (2.1% >> 2.1%)	2.0	1.5	2.3	2.8	2.0 ↓	2.8	2.8	3.5	3.9	
14.Taiwan (1.7% >> 1.5%)	1.2	1.7	2.5	2.9	2.0 ↓	3.0	3.0	3.2	3.9	



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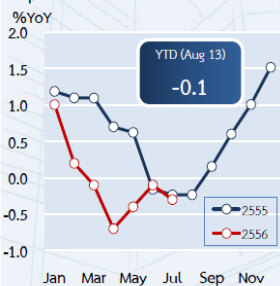
## Assumption 2 : Dubai Crude Oil Price



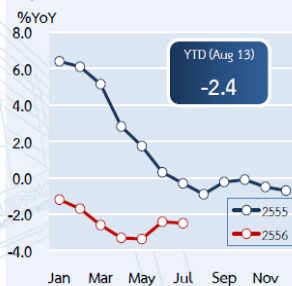
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### Assumption 3 : Export and Import prices

#### Export Price Growth



#### Import Price Growth



#### The situation in the first half of 2013

- Px in Q2 shrinks -0.4% (Aug -0.5%)
- Contraction of Agri sector (-2.2%) and Mineral & Fuel sector (-0.9%)
- Pm in Q2 shrinks -3.0% (Aug -1.7%)
- Import prices in most sectors contracted except capital goods and consumption goods. Oil prices reduced the most (-6.5%), followed by prices of raw materials (-3.0%)

#### Trend: 2<sup>nd</sup> half of 2013 and 2014

- In the 2<sup>nd</sup> half of 2013, export and import prices will remain the same due to a slow recovery of global demand
- In 2014 both Px and Pm will be in a range of -0.5 and 1.5. Prices are likely to increase from global economic recovery

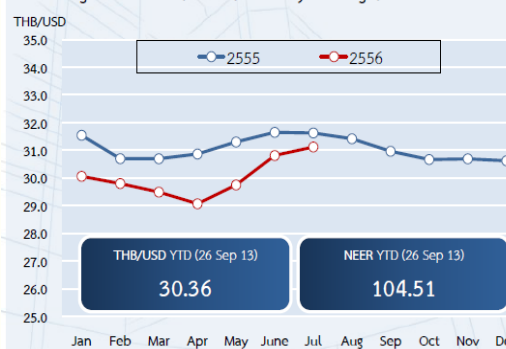
Px	Q1	Q2	Q3	Q4	June Proj.	YTD	Pm	Q1	Q2	Q3	Q4	June Proj.	YTD
2012	1.1	0.4	-0.1	1.0		0.6	2012	5.9	1.6	-0.5	-0.4		5.9
2013f	0.4	0.4			1.1	0.0 (±0.5)	2013f	-1.8	-3.0			0.6	-2.0 (±0.5)
2014f						0.5 (±1.0)	2014f						0.5 (±1.0)

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### Assumption 4 : Exchange rate (Baht/USD)

#### Exchange Rate: THB/USD (Monthly average)



THB/USD	Q1	Q2	Q3	Q4	June Proj.	YTD	%YoY
2012	31.0	31.3	31.3	30.7		31.1	1.9%
2013f	29.8	29.9			30.0	30.6 (±0.5)	-1.6%
2014f						31.0 (±1.0)	1.3%

#### The situation in the first half 2013

- Average first half 2013 = 29.8 Baht/USD
- Average Aug = 31.6, depreciate 1.5%mom
- Most appreciated at 28.6 (19 April), most depreciated at 32.4 (6 Sep)

	25/9/2013	Start of 2013	%chg from Start of 2013
THB	31.43	30.59	depre 2.75
NEER	103.42	100.00	depre 3.42
USD Index	80.56	79.77	appre 1.00
CNY	6.122	6.230	appre 1.74
JPY	98.62	86.67	depre 13.79
MYR	3.222	3.057	depre 5.40
SGD	1.255	1.221	depre 2.76
KRW	1,076.3	1,063.2	depre 1.23
EUR	1.348	1.320	appre 2.11

#### Trend: 2<sup>nd</sup> half of 2013 and 2014

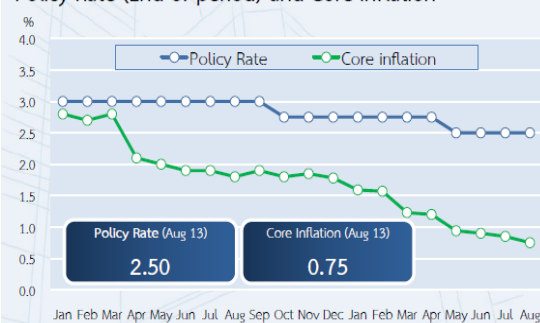
- In 2<sup>nd</sup> half of 2013 the exchange rate tends to depreciate because of lower than expected economic growth and external factors such as QE tapering
- In 2014 the exchange rate is expected to be in a range of 30-32 Baht/USD

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### Assumption 5 : Policy interest rate

#### Policy Rate (End-of-period) and Core Inflation



Policy Rate	Q1	Q2	Q3	Q4	June Proj.	End of Period
2012	3.00	3.00	3.00	2.75		2.75
2013f	2.75	2.50			2.50	2.50 (±0.25)
2014f						2.50 (±0.5)

#### Situation in the 1<sup>st</sup> half of 2013

- Monetary Policy Committee cut policy rate once for 25 basis points from lower than expected economic growth
- Core inflation expands slightly with the rate near the lower bound of monetary policy target of 0.5-3.0%

#### Trend: 2<sup>nd</sup> half of 2013 and 2014

- In the 2<sup>nd</sup> half 2013, it is expected that policy rate will remain the same to support the economic growth
- In 2014, the policy rate will still remain the same with a chance to be slightly higher from inflationary pressure or lower liquidity

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### Assumption 6 : Public expenditure

(Unit: million baht)	9 months FY 2013	FY 2013 Estimatd (e)	%YoY 56	FY 2014 Estimated (e)	%YoY 57
Budgetary framework	2,400,000	2,400,000	0.80%	2,525,000	5.2%
<b>1. Government Expenditure (1.1+1.2)</b>	<b>1,868,079</b>	<b>2,498,329</b>	<b>7.6%</b>	<b>2,780,912</b>	<b>11.3%</b>
1.1 Budgetary Expenditures	1,853,614	2,475,090	7.8%	2,657,234	7.4%
(1) Current Expenditures	1,464,688	1,931,716	3.1%	2,037,653	5.5%
(2) Capital Expenditures	199,250	323,325	17.4%	362,039	12.0%
(3) Mid-year supplementary Budget	189,676	220,049	49.8%	257,542	17.0%
Current Fiscal Year(1)+(2)	1,663,938	2,255,041	5.0%	2,399,691	6.4%
1.2 Non-Budgetary Expenditures	14,465	23,239	-11.3%	123,678	432.2%
(1) TKK Project	4,341	5,817	-76.2%	3,000	-48.4%
(2) Water Resource Management	10,123	17,422	888.2%	59,058	239.0%
Plan (350 billion baht)					
(3) Infrastructure Investment Plan (2,000 billion baht)				61,620	
<b>2. Local Authorities Expenditures</b>	<b>213,190</b>	<b>337,874</b>	<b>14.3%</b>	<b>361,626</b>	<b>7.0%</b>
<b>3. SOE Investment Expenditures</b>	<b>238,040</b>	<b>310,484</b>	<b>12.0%</b>	<b>324,658</b>	<b>4.6%</b>
<b>4. Public Sector Expenditures (1+2+3)</b>	<b>2,319,309</b>	<b>3,146,687</b>	<b>8.7%</b>	<b>3,467,196</b>	<b>10.2%</b>

#### Situation in the 1<sup>st</sup> half of 2013

- In the first 9 months, the budget disbursement is equal to 1,670 billion baht or 69.3% of total budget

#### Trend of public expenditure

- In FY2013, it is expected to be 3,146 billion baht, expands 8.7% per year (9.2% June 13)
- In FY2014, it is expected to be 3,467 billion baht, expands 10.2% per year (3.9% June 2013)

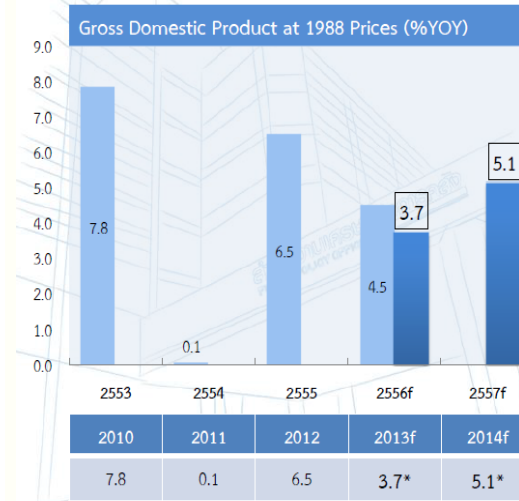
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### Thailand's Economic Projection in 2013 and 2014: Base Case

	2011	2012	2013f (Sep 13)		2014f (Sep 13)	
			Ave	Range	Ave	Range
Real GDP	0.1	6.5	3.7	3.5 - 4.0	5.1	4.6 - 5.6
- Real Private Consumption	1.3	6.7	2.1	1.9 - 2.4	3.4	2.9 - 3.9
- Real Public Consumption	1.1	7.5	2.7	2.5 - 3.0	4.8	4.3 - 5.3
- Real Private Investment	7.2	14.4	2.3	1.8 - 2.8	9.5	8.5 - 10.5
- Real Public Investment	-8.7	8.9	12.3	11.8 - 12.8	13.4	12.4 - 14.4
- Real Export of goods and services	9.5	3.1	5.6	5.1 - 6.1	8.6	7.6 - 9.6
- Real Import of goods and services	13.7	6.2	4.7	4.2 - 5.2	7.6	6.6 - 8.6
Trade Balance	17.0	6.0	4.9	4.4 - 5.4	1.5	0.5 - 2.5
- Export of goods in \$ term	13.1	3.1	1.8	1.3 - 2.3	7.5	6.5 - 8.5
- Import of goods in \$ term	24.9	8.8	2.2	1.7 - 2.7	9.3	8.3 - 10.3
Current Account (Bil.\$)	5.3	0.2	1.3	0.3 - 2.3	0.1	-1.9 to 2.1
- Current Account (%GDP)	1.5	0.0	0.3	0.1 - 0.6	0.0	-0.5 to 0.5
Headline Inflation	3.8	3.0	2.3	2.0 - 2.5	2.8	2.3 - 3.3
Core Inflation	2.4	2.1	1.1	0.9 - 1.4	1.5	1.0 - 2.0

### Thailand's Economic Projection in 2013 and 2014



#### Real Gross Domestic Product (%YOY)

- In 2013, it is expected that the Thai economy will grow at 3.7%, lower than the previous projection at 4.5% from the lower-than-expected private domestic demand and external demand
- In 2014, Thai economy will return back to expand at 5.1% from the public investment as the main drive for the recovery of domestic demand

## Lecture 1: Appendix

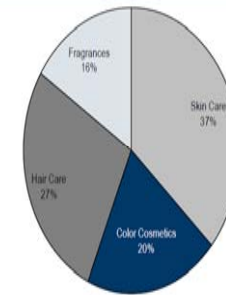
Examples of industry analysis  
and research report writing

## INDUSTRY ANALYSIS EXAMPLES

# EXAMPLE 1: GLOBAL BEAUTY INDUSTRY

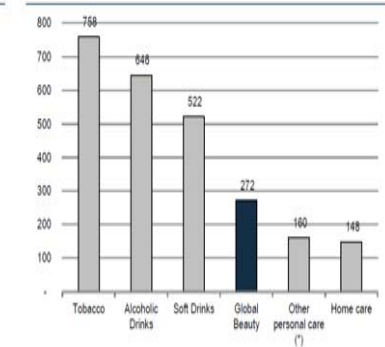
# Identify total demand: Global demand for beauty products

Exhibit 1: Global Beauty, Composed of Skin Care, Color Cosmetics, Hair Care, and Fragrances, Is a \$270B Industry



Source: Euromonitor.

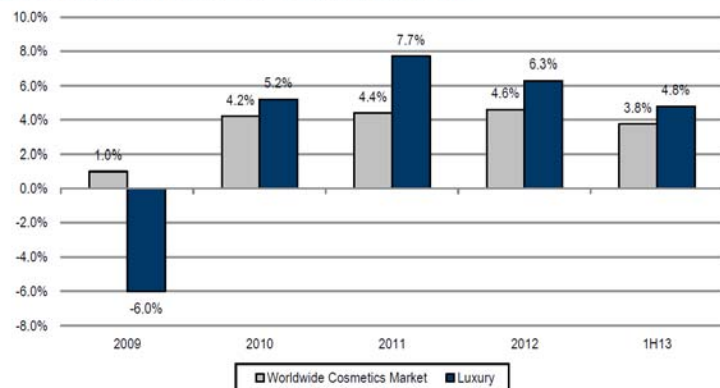
Exhibit 2: Global Beauty Is Approximately One-Half the Size of Global Soft Drinks



Source: Euromonitor (\*) Includes oral care, bath and shower, deodorant and other grooming products.

# Identifying market segment growth

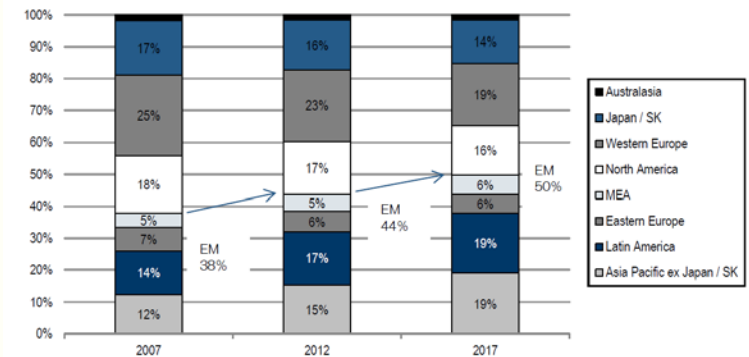
Exhibit 3: According to a L'Oreal Analysis, the Premium Segment Has Outperformed Total Cosmetics for the Last Three and a One-Half Years



Source: L'Oreal annual/half year sales presentations.

# Identifying market segment growth

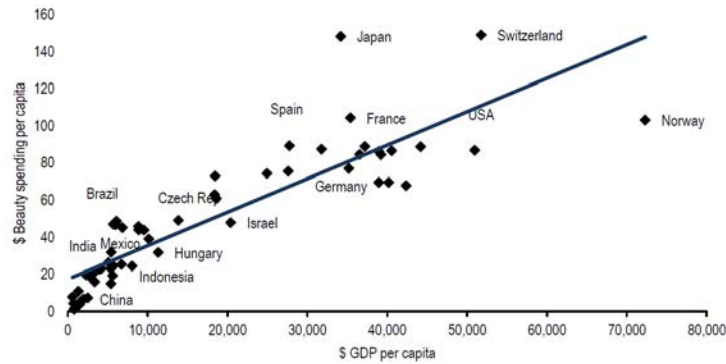
Exhibit 5: Over the Past Five Years, Emerging Markets Increased from 38% of Global Beauty Sales to 44% Today; By 2017, Emerging Markets Are Expected to Represent One-Half of Total Beauty Sales



Source: Euromonitor.

# Identifying determinants of growth

Exhibit 6: Beauty Spending per Capita Shows a Close Correlation with GDP per Capita

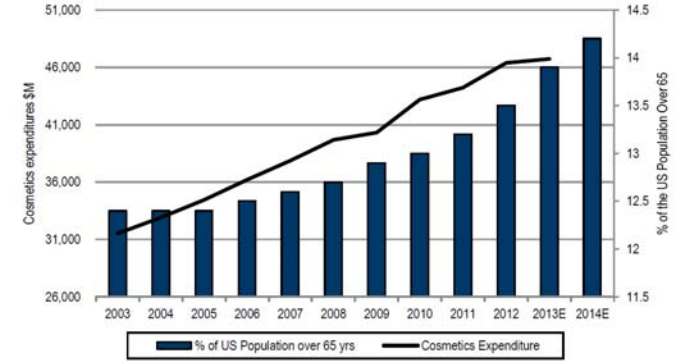


Source: Beauty spending per capita L'Oreal, Credit Suisse estimates.



# Identifying determinants of growth

Exhibit 9: Demand For Beauty and Skin Care Products Among the Aging U.S. and Western Europe Population Should Support Industry Sales Growth

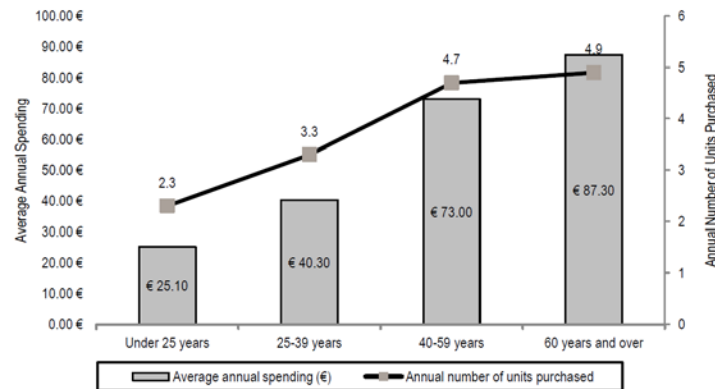


Source: US Census Bureau, Credit Suisse estimates.



# Identifying determinants of growth

Exhibit 10: On average European women over 60 buy twice as many skincare products and spend more than three times as women under 25

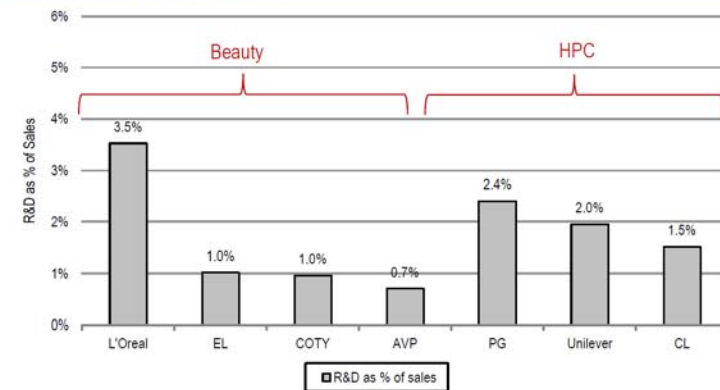


Source: TNS Worldpanel France. L'Oreal annual report



# Competition drives innovation

Exhibit 11: R&D as a % of Sales



Source: Company data, Credit Suisse estimates.



# Competitor analysis

Exhibit 26: L'Oréal and Beiersdorf Are Dominant Players in the Skin Care Category with 11% and 7% Global Shares, Respectively

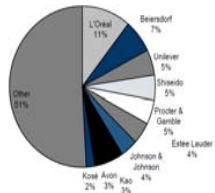
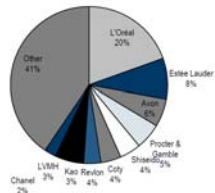


Exhibit 32: L'Oréal, EL and AVP Are Dominant Players in the Color Cosmetics Category, with 20%, 8% and 6% Global Shares, Respectively



Source: Euromonitor

Exhibit 29: PG and L'Oréal Are Dominant Players in the Hair Care Category, with 19% and 17% Global Shares, Respectively

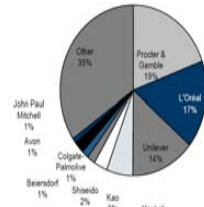
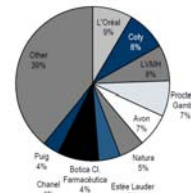


Exhibit 35: L'Oréal and COTY Are Dominant Players in the Fragrances Category, with 9% and 8% Global Shares, Respectively



Source: Euromonitor

# Summary of industry position

- Premium market outgrowing mass
- More sales going through specialized retailers ex. Sephora, on-line sales, and travel sales compared to traditional department stores
- Consolidation continues



# EXAMPLE 2: RETAILING



**HomePro** Thailand's Largest Home Improvement Retailer

**“One-stop shopping for middle-upper income home owners”**

**Customer Composition**

NEW home owner 30%  
EXISTING home owner 70%

Source: Company Data

SUMMARY & CO. OVERVIEW

STRONG FUNDAMENTALS

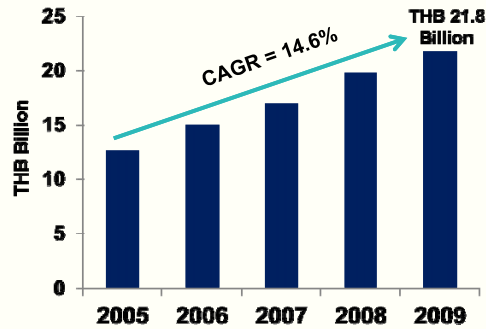
CHANGE IN GROWTH STORY

OVERPRICED<sup>4</sup>BY MARKET

## FIRST-MOVER ADVANTAGE

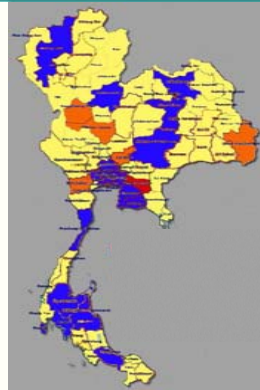


### Impressive Historical Sales Growth



Source: Company Data

40 branches located in Bangkok and 1<sup>st</sup>-tier provinces



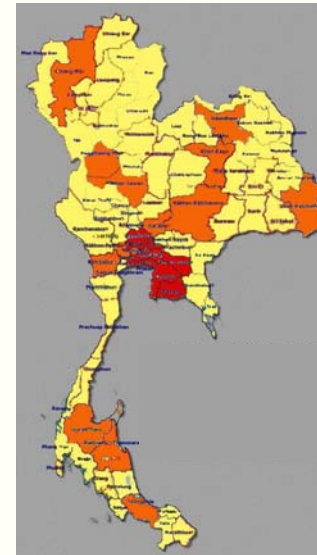
Source: Company Data and Team Research

SUMMARY & CO. OVERVIEW

STRONG FUNDAMENTALS

CHANGE IN GROWTH STORY

OVERPRICED<sup>BY</sup> MARKET



Existing Markets

1 BKK & 1<sup>st</sup> Tiers

2 2<sup>nd</sup> Tiers Markets

3 International Markets

New Markets

SUMMARY & CO. OVERVIEW

STRONG FUNDAMENTALS

CHANGE IN GROWTH STORY

OVERPRICED<sup>BY</sup> MARKET

### 2010 Competitive Landscape

### LEADERS IN BKK AND 1<sup>ST</sup> TIERS

2010	Bangkok	1-st Tier Provinces		BKK & 1 <sup>st</sup> tiers
	19	20	=	39
	6	2		17
	1	-		
	-	8		
	-	-		
Total No. of Branches	26	30		56

Unprecedentedly aggressive competitions in Bangkok and 1<sup>st</sup>-Tiers markets

	THB 8 Billion investment over the next 3 years in BKK and 1-st Tier Provinces
	Move towards BKK to capture more market share
	NEW ENTRANT: Competing head-to head with HMPRO's soft line product

SUMMARY & CO. OVERVIEW

STRONG FUNDAMENTALS

CHANGE IN GROWTH STORY

OVERPRICED<sup>BY</sup> MARKET

SUMMARY & CO. OVERVIEW

STRONG FUNDAMENTALS

CHANGE IN GROWTH STORY

OVERPRICED<sup>BY</sup> MARKET

## 2013 Competitive Landscape

**UNPRECEDENTEDLY AGGRESSIVE**

**Bangkok and 1st Tiers**

	2010	2013
HomePro	39	40
hw homeWork	17	40
Thai Wasadu		
Global Home		
IKEA		
Total No. of Branches	56	80

More players intensify competitive landscape

Lower negotiation power with new suppliers

Impair A/P Days 120 → 100

SUMMARY & CO. OVERVIEW

STRONG FUNDAMENTALS

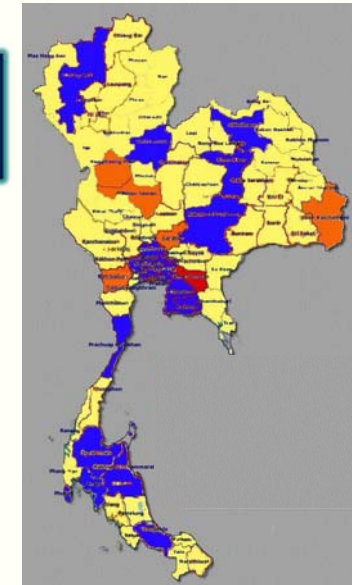
CHANGE IN GROWTH STORY

OVERPRICED<sup>BY</sup> MARKET

BKK and 1-st tier markets have already been tapped by HMPRO

Areas with high income

Areas with HMPRO store presence



Source: National Economic and Social Development Board (NESDB) and Company Data

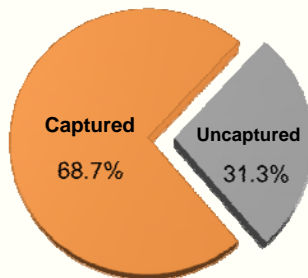
SUMMARY & CO. OVERVIEW

STRONG FUNDAMENTALS

CHANGE IN GROWTH STORY

OVERPRICED<sup>BY</sup> MARKET

### LESS LUCRATIVE 2nd-tier province market



Year 2009	GDP by Percentage	Average GDP % per Province
Captured market (19/76 provinces)	68.7%	3.6%
Uncaptured market (57/76 provinces)	31.3%	0.5%
Thailand's Total GDP	100.0%	1.3%

Source: National Economic and Social Development Board (NESDB) and Company Data

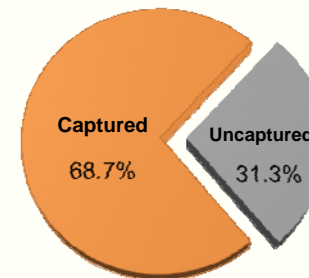
SUMMARY & CO. OVERVIEW

STRONG FUNDAMENTALS

CHANGE IN GROWTH STORY

OVERPRICED<sup>BY</sup> MARKET

### LESS LUCRATIVE 2nd-tier province market



USD 7,700/Head/Year

VS.

USD 2,400/Head/YEAR

- Lower purchasing power
- Higher operational cost per THB sales
- Lower return on investment

SUMMARY & CO. OVERVIEW

STRONG FUNDAMENTALS

CHANGE IN GROWTH STORY

OVERPRICED<sup>BY</sup> MARKET

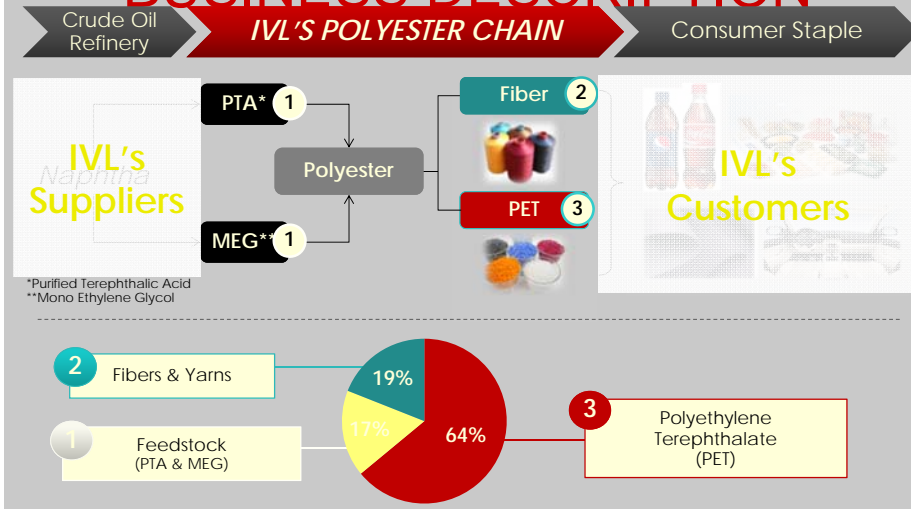
3

### HMPRO Finances Its Own Growth



## EXAMPLE 3: CHEMICALS

## BUSINESS DESCRIPTION



## COMPANY OVERVIEW

### Diversification of Customer Base & Geographic

IVL's Customers

Strong relationship with leading global brands

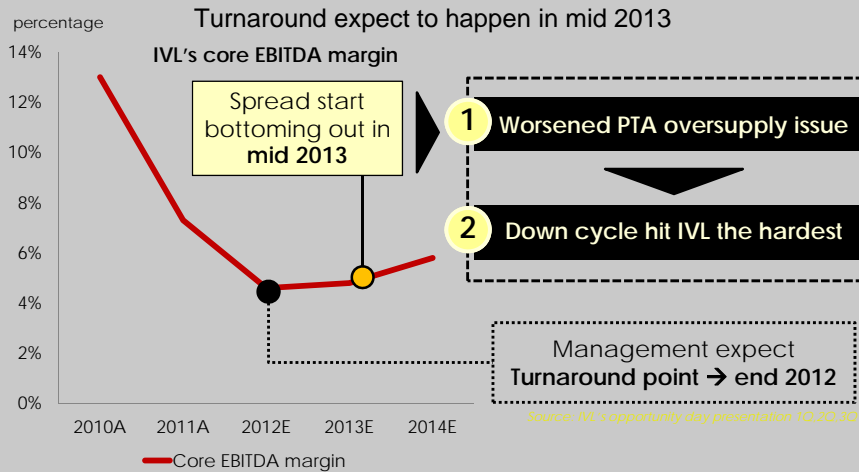
Revenue Breakdown by Region

- North America (42%)
- Asia (27%)
- Europe, Middle East, Africa (31%)

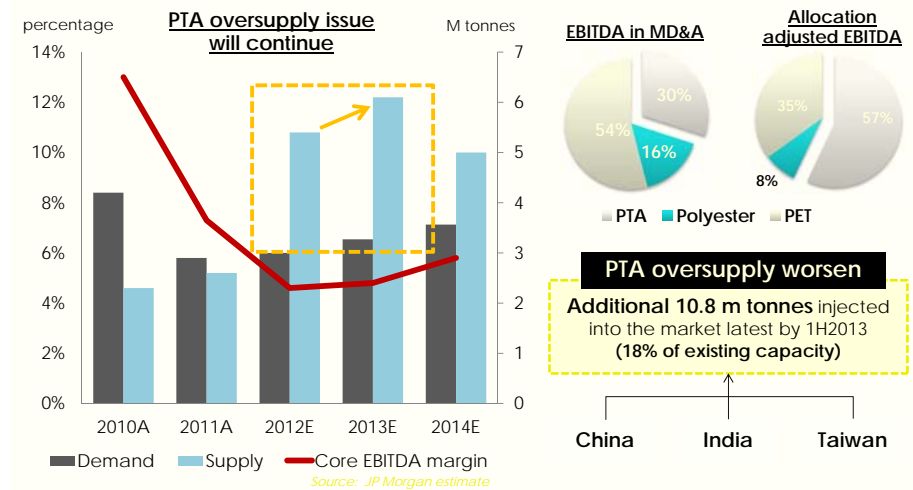
Source: Company's Presentation

Geographical diversification helps reduce ocean freight and import duties

# DELAYED SPREAD CYCLE TURNAROUND

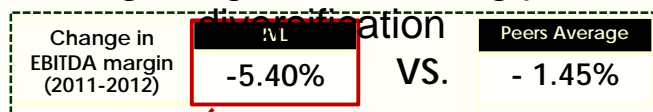


## 1 PTA OVERSUPPLY WORSEN



## 2 DOWN CYCLE HIT IVL THE HARDEST

Thinning margin from lacking product diversification



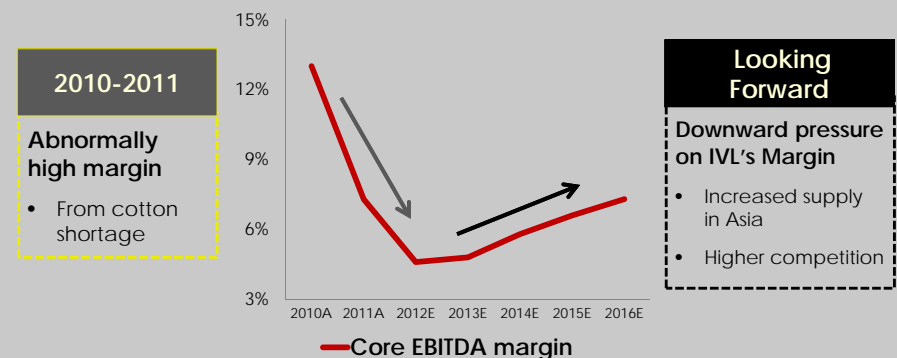
PETROCHEMICAL VALUE CHAIN					
Companies	IVL	Alpek	Dow Chemicals	Reliance	Sinopec
Crude Oil/ Gas				■ ■ ■ ■	■ ■ ■ ■
Basic Chemicals		■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■
Organic Intermediaries	■	■	■	■ ■ ■ ■	■ ■ ■ ■
Polyester Polymers	■ ■ ■ ■	■ ■ ■ ■	■	■	■



## WEAK RECOVERY

Margin: Not Expected to Exhibit High Margin Similar to 2011

IVL Growth: Margin Volume



# WEAK RECOVERY

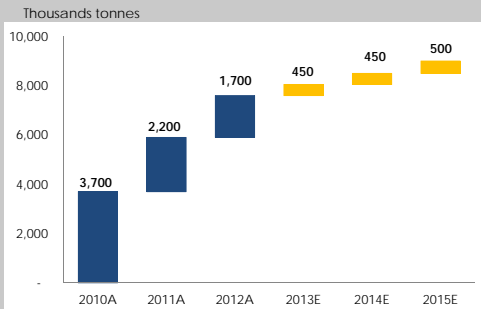
Future Volume Growth Not as Vigorous as the Past

IVL Growth:

Margin

Volume

## IVL's incremental production capacity



Source: Company's Presentation

## IVL Growth Story

- Historical Volume Growth through M&A
- No M&A plan in the next 12 months

### Why not M&A?

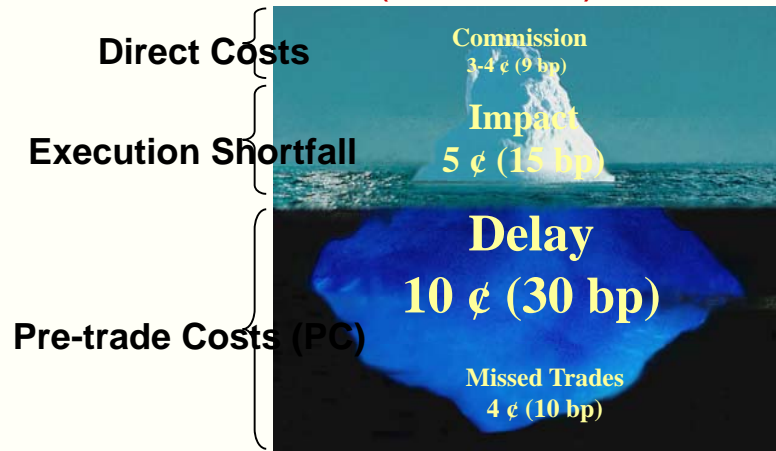
- Tight liquidity
  - Low quick ratio
  - Issue of THB 6 billion Senior Unsecured debentures
- Over leveraged Position



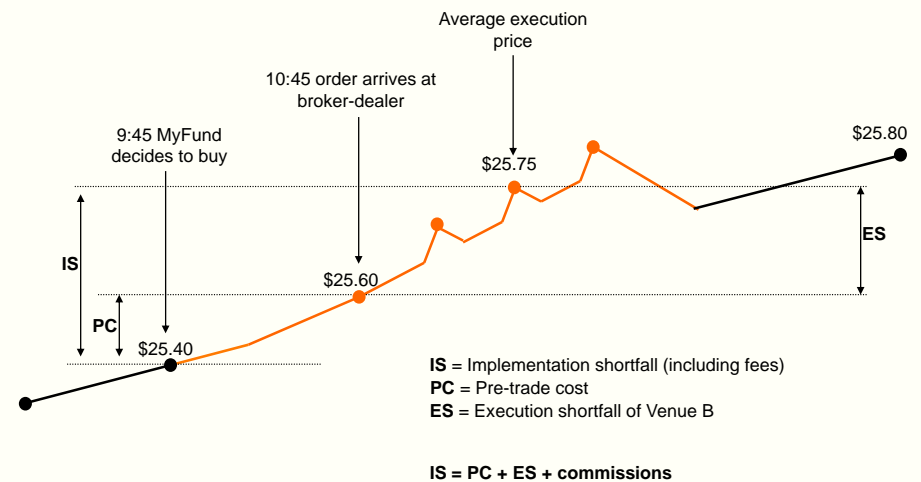
# WHAT AFFECTS RATES OF RETURNS



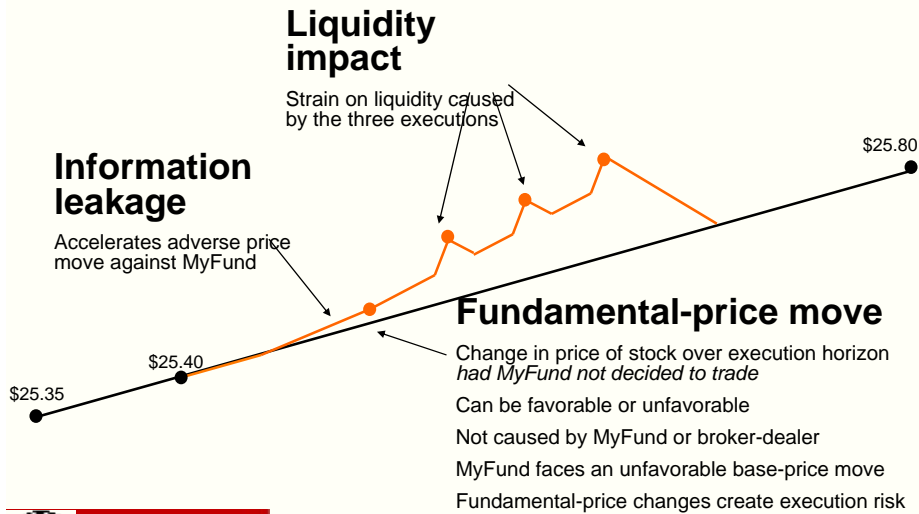
## The Plexus Iceberg of Transaction Costs (US, 2007)



## Implementation Shortfall



## Factors affecting Implementation Shortfall



## Computing volume weight avg price (avg execution price)

- You have received an order to buy 1 mn shares of stock A. Compute VWAP and the end of the day profit/loss position.

Time	Execution price	Quantity	Unfilled	Q x P
9.00 am	100	100,000	900,000	10,000,000
10.00 am	101	150,000	750,000	15,150,000
11.00 am	102	300,000	450,000	30,600,000
12.00 pm	105	100,000	350,000	10,500,000
2.00 pm	104	200,000	150,000	20,800,000
3.00 pm	103	100,000	50,000	10,300,000
4.00 pm	101	50,000	-	5,050,000
4.30 pm	99			
<b>VWAP</b>				102.4
<b>Profit/loss per share</b>				-3.4

## Price impact

- Thin (illiquid) markets results in larger price impact. What happens to market price when customer submits limit order of Rps 120 to buy 500 shares

Sell	Quantity
120	500
110	300
100	200

## Price impact

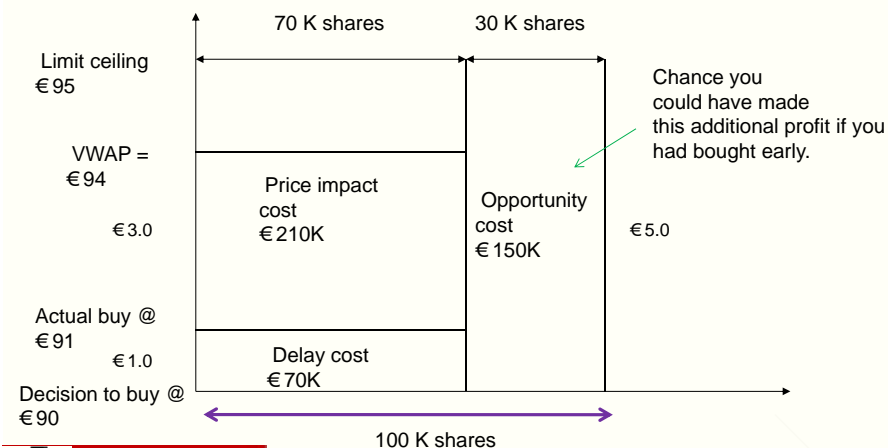
- Deep (liquid) markets results in smaller price impact. What happens to market price when customer submits limit order to buy 500 shares at Rps 120?

Sell	Quantity
114	500
112	300
110	600
109	300
108	400

## A closer look at liquidity and transaction costs

- A fund manager wishes to buy 100,000 shares of **LVMH Moet Hennessy Louis Vuitton SA (MC.PA)**
- Observing last transaction price at €90.50, he places a buy order at €90.0 at 10.01 am.
- However, **LVMH** price kept climbing, at 10.30 am, fund manager revises a limit order to buy from €91 (current market price) and not exceeding €95.
- By the time the market closed, at 4.30 pm, the fund manager only obtained 70,000 shares. The last trading hour price was €96.0 above the limit ceiling.

## What are the costs from implementation shortfall?



## Trading cost with implementation shortfall

Delay	70,000
Price impact	210,000
Commissions (0.1% of VWAP)	6,580
Opportunity cost	150,000
	436,580

Your VWAP cost =  $94 \times 70K = 6.58 \text{ mn}$

## Which scenario has higher price impact?

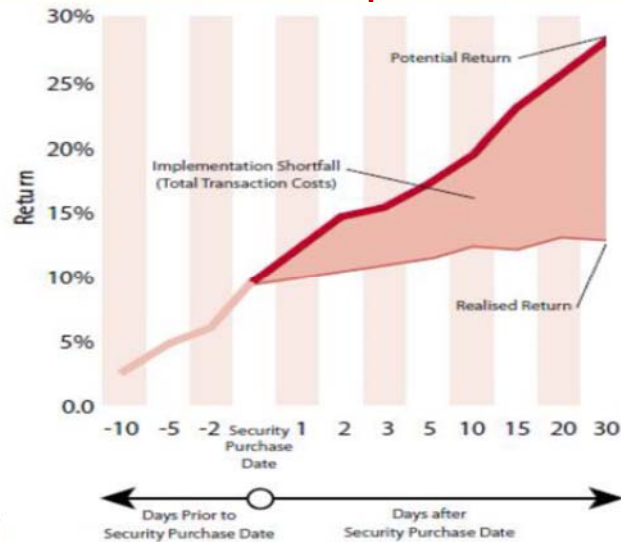
Time	Sell	Quantity
10.05	90.5	2,000
	91	4,000
	91.5	6,000

Time	Sell	Quantity
10.05	90.5	5,000
	91	7,000
	91.5	9,000

- You would like to buy 5,000 shares at market prices?
- Top scenario:  $VWAP = 90.5 \times 2,000 + 91 \times 3,000 = 454 \text{ K}$
- Bottom scenario:  $VWAP = 90.5 \times 5,000 = 452.5 \text{ K}$

## Realized return and potential return



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## MARKET MICROSTRUCTURE

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### Microstructure and efficient prices

- Microstructure research rejects the hypothesis that the transaction process and the organisation of markets have no effect on the prices of securities
- The microstructure literature argues that both information risk due to asymmetric information and differences in liquidity over time and between companies impact on long-term equilibrium prices in the market.

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### Microstructure and efficient prices

- The microstructure literature challenges the hypothesis of efficient markets by studying how prices can deviate from (or converge towards) informationally efficient equilibrium prices as a result of rational participants behaving strategically (Biais et al., 2004)

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## Trading system on SET

- Automatic order matching (AOM) trading performs the order matching process according to price, then time, priority, without human intervention. After brokerage houses electronically send buy or sell orders from their offices to the SET mainframe computer, the CONNECT system queues the orders and arranges them according to a price-then-time priority.



## Order driven market

- Most important exchanges are order-driven markets.
- Most newly organized trading systems are electronic order-driven markets.
- All order-driven markets use *order precedence rule* and *trade pricing rule*.



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## Examples of pure order-driven markets

- Tokyo Stock Exchange,
- KRX (previously KSE, KOSDAQ)
- ASEAN markets
- Paris Bourse,
- Toronto Stock Exchange,
- Most Future Markets,
- Most European Exchanges for equities (Milan, Barcelona, Madrid, Bilbao, Zurich,...)



## Sources of liquidity

- More than 70% of trading in developed markets is done by institutions. In emerging market, this pattern is reversed.
- A block trade is defined (somewhat arbitrarily) as trades > 10K shares.
- Block orders (institutional orders) are in practice significantly larger.
- Institutional traders need liquidity!!!
  - The quote size is typically not sufficient to satisfy their trading needs.
- Displaying large order will result in adverse price impact.
  - How do you tease out non-displayed liquidity without incurring price impact?



## A Definition of Liquidity

A market is *liquid* if

uninformed traders can	(Who)
quickly	(Immediacy)
buy or sell	(Symmetry)
large size	(Depth)
when they want	(Availability)
at low transaction cost	(Spread)



## Other Variables Affecting Liquidity

- Security characteristics
- Recent trading history
  - Resiliency
- The trader
  - Informed or uninformed
- The market structure
  - Competitive or oligopolistic dealers
  - Order- or quote-driven



## Liquidity is Valuable

- Liquidity helps traders solve cash flow problems.
  - People and firms will save more and thereby decrease corporate costs of capital.
- Liquidity facilitates hedging strategies.
  - More risks will be shifted between natural hedgers and production will be more efficient.
- Liquidity facilitates risk sharing schemes.
  - More extremely large risky positive NPV projects will be undertaken.
- Positive externalities...



## Measuring Liquidity

- Quoted spread
- Price impact
- Depth
- Trading volume/Trading value
- Turnover
- Free float
- Frequency of trading
- Etc.



## Who supplies Liquidity?

- Market makers
  - Exchange specialists
  - ETF's market makers
  - Day traders (algo trade)
- Upstairs trading/Block Trading
  - Institutional trade crossing
- Patient pre-committed traders
  - Buy-side institutions
  - Individual traders
- Value-motivated traders
  - Individuals
  - Institutions
- Arbitrageurs
  - Pure arbitrageurs
  - Index enhancement funds
  - Pairs traders



## Who uses Liquidity?

- Institutional traders
- Retail traders
- Professional/Proprietary traders
- Foreign investors



## WHY AM I BETTER UNDERSTANDING MICROSTRUCTURE?

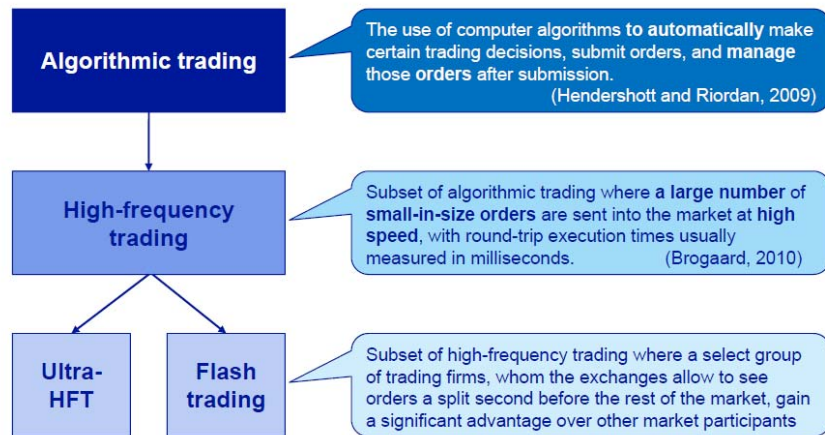


## My clients wants to know

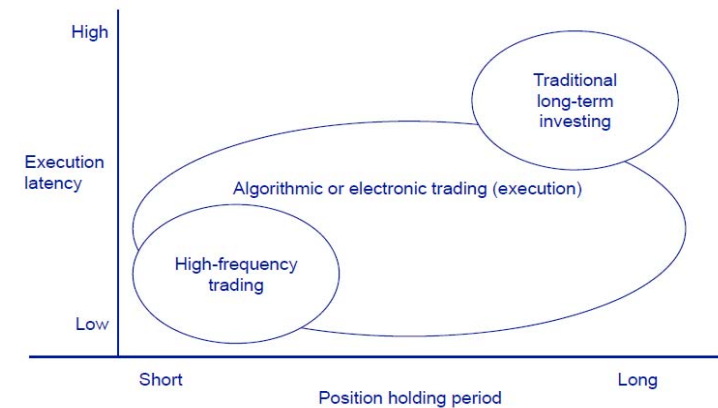
- Does the stock have sufficient liquidity for investment?
- What is the daily volatility of the stock?
- Do you know who has recently been trading in a stock?
- Is there a way to take advantage of high volatility or large mispricing errors?



## Key terms



## Traditional investing vs AT vs HFT



Source: Aldridge 2010



## Algorithmic trading strategies

Name	Description of strategy
Trade execution algorithms	Designed to minimise the price impact of executing trades of large volumes by 'shredding' orders into smaller parcels and slowly releasing these into the market.
Strategy implementation algorithms	Designed to read real-time market data and formulate trading signals to be executed by trade execution algorithms. This may involve automatically rebalancing portfolios when certain pre-specified tolerance levels are exceeded, searching for arbitrage opportunities, automatic quoting and hedging in a market maker-type role, and producing trading signals from technical analysis.
Stealth/gaming algorithms	Designed to take advantage of the price movement caused when large trades are filled, and also to detect and outperform other algorithmic strategies.

Source: Aldridge 2010 High-Frequency Trading: A Practical Guide to Algorithmic Strategies and Trading Systems. John Wiley & Sons.

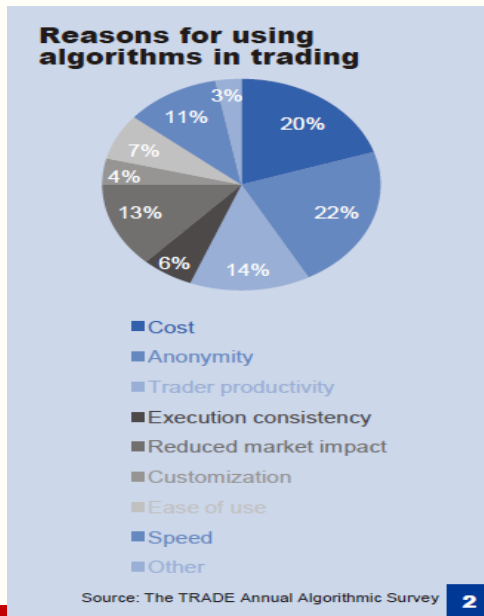


## HFT Strategies

Name	Description of strategy
Electronic market making	Liquidity-providing strategies that mimic the traditional role market makers once played. These strategies involve making a two-sided market aiming at profiting by earning the bid-ask spread. This has evolved into what is known as Passive Rebate Arbitrage.
Statistical arbitrage	Traders look to correlate prices between securities in some way and trade off of the imbalances in those correlations.
Liquidity detection	Traders look to decipher whether there are large orders existing in a matching engine by sending out small orders ("pinging") to look for where large orders might be resting. When a small order is filled quickly, there is likely to be a large order behind it.

Source: Aldridge 2010 High-Frequency Trading: A Practical Guide to Algorithmic Strategies and Trading Systems.





## Drivers of change on developed demutualized markets: Case of TSE



- The rise of non-centralized electronic exchanges
- About 60 percent of equity volume in the United States is from high-frequency trading, significantly higher than Japan. Just 10 percent of global financial firms with high-frequency businesses are active in Tokyo (Reuters)

## Drivers of change for SET

- Algo trading on SET is driven by proprietary trading accounts of brokerages and the need to provide investors with timely execution with better cost control.