

Challenges to Thai Automobile industry

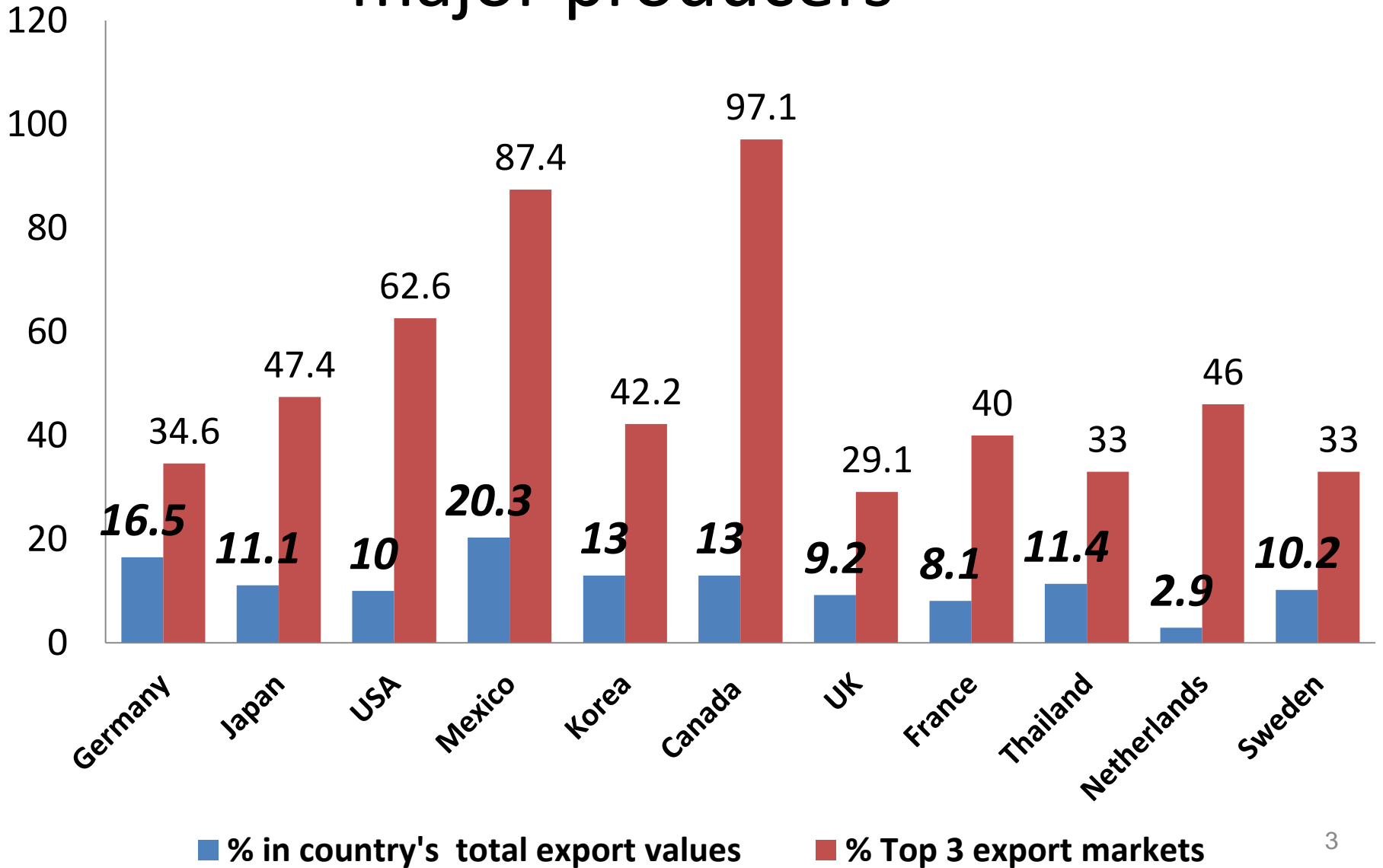
Lecture 17

Bhanupong

Outline

- Structural Analysis
- Sectoral comparison: Four Industries
- Historical perspective
- Export capability
- Trade competitiveness
- Impact of global recession and fragile recovery

Importance of automobile industry in major producers





Trade Competitiveness Map

Analyse country and product competitiveness with trade flows

Trade Performance HS Consistency of Trade Statistics **Trade Performance Index**

Country Sector

Thailand 2013

Press Ctrl.L and click to select/deselect more than one sector, then Redo.

- Basic manufactures
- Non-electronic machinery
- IT & Consumer electronics
- Electronic components
- Transport equipment

Re

Trade Performance Index (by Sector): Thailand (2013)

Indicator's Description		Transport equipment (Value)	Transport equipment (Rank)
N	Number of exporting countries for the ranking in the sector	149	
G1	Value of exports (in thousand US\$)	28,532,055	
G2	Export growth in value, p.a. (%)	20%	37
General Profile	G3	Share in national exports (%)	12%
	G4	Share in national imports (%)	7%
	G5	Relative trade balance (%)	21%
	G8	Relative unit value (world average = 1)	0.0
	P1	Net exports (in thousand US\$)	9,912,566
	P2	Per capita exports US\$/inhabitant)	418.4
	P3	Share in world market (%)	1.72%
Position in 2013 for Current Index	P4a	Product diversification (N° of equivalent products)	9
	P4b	Product concentration (Spread)	42
	P5a	Market diversification (N° of equivalent markets)	19

Electronics

Trade Performance Index (by Sector): Thailand (2013)

Indicator's Description		Electronic components (Value)	Electronic components (Rank)
	N	Number of exporting countries for the ranking in the sector	138
	G1	Value of exports (in thousand US\$)	21,153,427
	G2	Export growth in value, p.a. (%)	6%
General Profile	G3	Share in national exports (%)	9%
	G4	Share in national imports (%)	9%
	G5	Relative trade balance (%)	-6%
	G6	Relative unit value (world average = 1)	0.0
	P1	Net exports (in thousand US\$)	-3,041,662
	P2	Per capita exports US\$/inhabitant)	310.2
	P3	Share in world market (%)	1.56%
Position in 2013 for Current Index	P4a	Product diversification (N° of equivalent products)	22
	P4b	Product concentration (Spread)	27
	P5a	Market diversification (N° of equivalent markets)	14

IT Consumer Electronics

Trade Performance Index (by Sector): Thailand (2013)

Indicator's Description			IT & Consumer electronics (Value)	IT & Consumer electronics (Rank)
	N	Number of exporting countries for the ranking in the sector	129	
	G1	Value of exports (in thousand US\$)	26,783,289	
	G2	Export growth in value, p.a. (%)	5%	42
General Profile	G3	Share in national exports (%)	11%	
	G4	Share in national imports (%)	6%	
	G5	Relative trade balance (%)	25%	
	G6	Relative unit value (world average = 1)	0.0	
	P1	Net exports (in thousand US\$)	10,858,811	7
	P2	Per capita exports US\$/inhabitant)	392.7	20
	P3	Share in world market (%)	2.32%	10
Position in 2013 for Current Index	P4a	Product diversification (N° of equivalent products)	4	93
	P4b	Product concentration (Spread)		92
	P5a	Market diversification (N° of equivalent markets)	9	43

Textile Industry

Trade Performance Index (by Sector): Thailand (2013)

Indicator's Description		Textiles (Value)	Textiles (Rank)
	N	Number of exporting countries for the ranking in the sector	131
	G1	Value of exports (in thousand US\$)	3,876,249
	G2	Export growth in value, p.a. (%)	6%
General Profile	G3	Share in national exports (%)	1%
	G4	Share in national imports (%)	1%
	G5	Relative trade balance (%)	11%
	G6	Relative unit value (world average = 1)	0.0
	P1	Net exports (in thousand US\$)	819,083
	P2	Per capita exports US\$/inhabitant)	56.8
	P3	Share in world market (%)	1.31%
Position in 2013 for Current Index	P4a	Product diversification (N° of equivalent products)	85
	P4b	Product concentration (Spread)	4
	P5a	Market diversification (N° of equivalent markets)	24

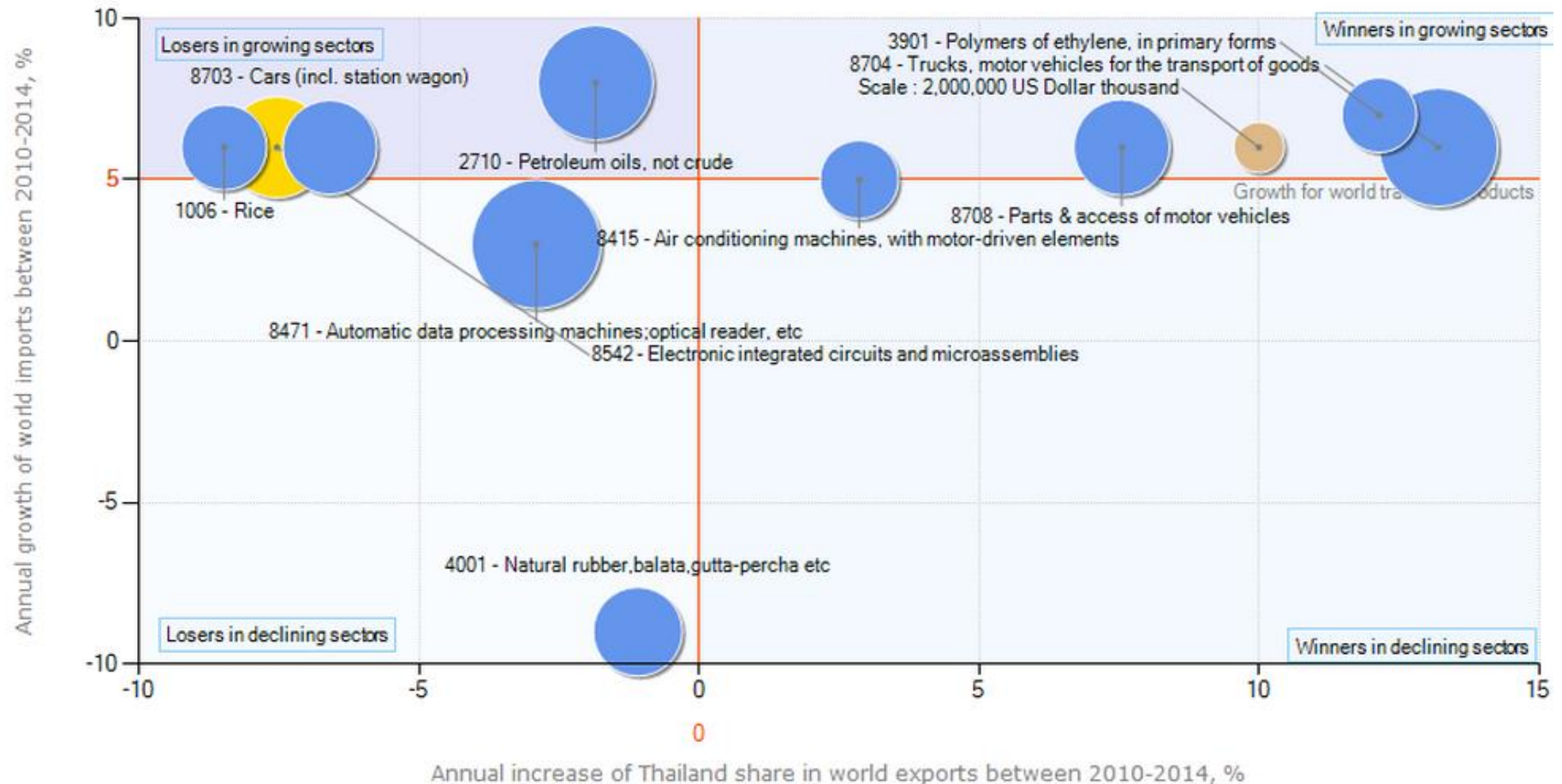
Processed food

Trade Performance Index (by Sector): Thailand (2013)

	Indicator's Description	Processed food (Value)	Processed food (Rank)
	N Number of exporting countries for the ranking in the sector	169	
	G1 Value of exports (in thousand US\$)	19,468,004	
	G2 Export growth in value, p.a. (%)	11%	74
General Profile	G3 Share in national exports (%)	8%	
	G4 Share in national imports (%)	2%	
	G5 Relative trade balance (%)	47%	
	G6 Relative unit value (world average = 1)	0.0	
	P1 Net exports (in thousand US\$)	12,451,951	7
	P2 Per capita exports US\$/inhabitant)	285.5	47
	P3 Share in world market (%)	2.57%	14
Position in 2013 for Current Index	P4a Product diversification (N° of equivalent products)	18	35
	P4b Product concentration (Spread)		35
	P5a Market diversification (N° of equivalent markets)	16	14

Winners and losers

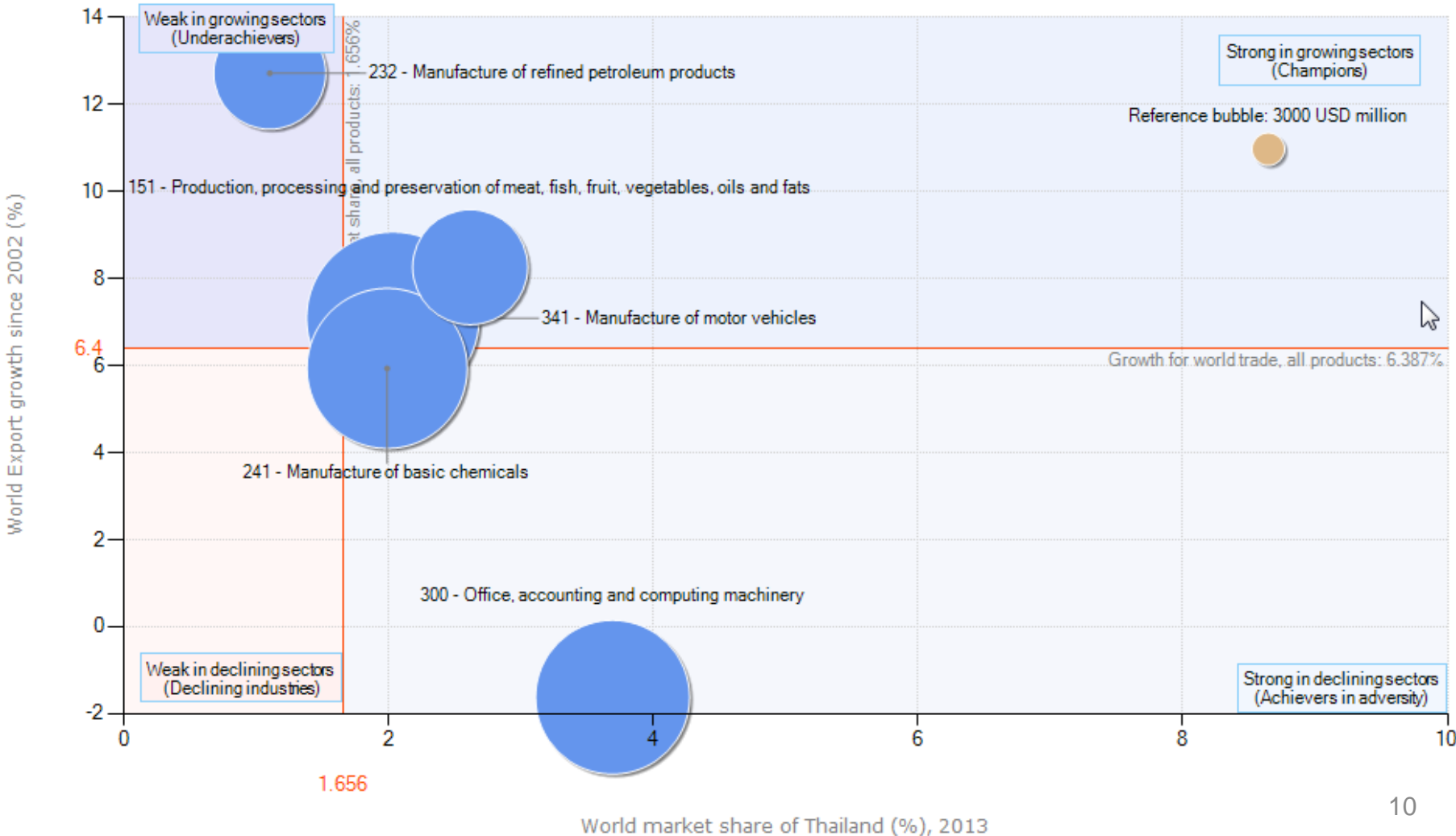
Growth of national supply and international demand for products exported by Thailand in 2014



Structural Analysis of Thailand's exports: 2013

Strength and weakness in growing and declining sectors

Exports of Thailand - 2013
Structural Analysis

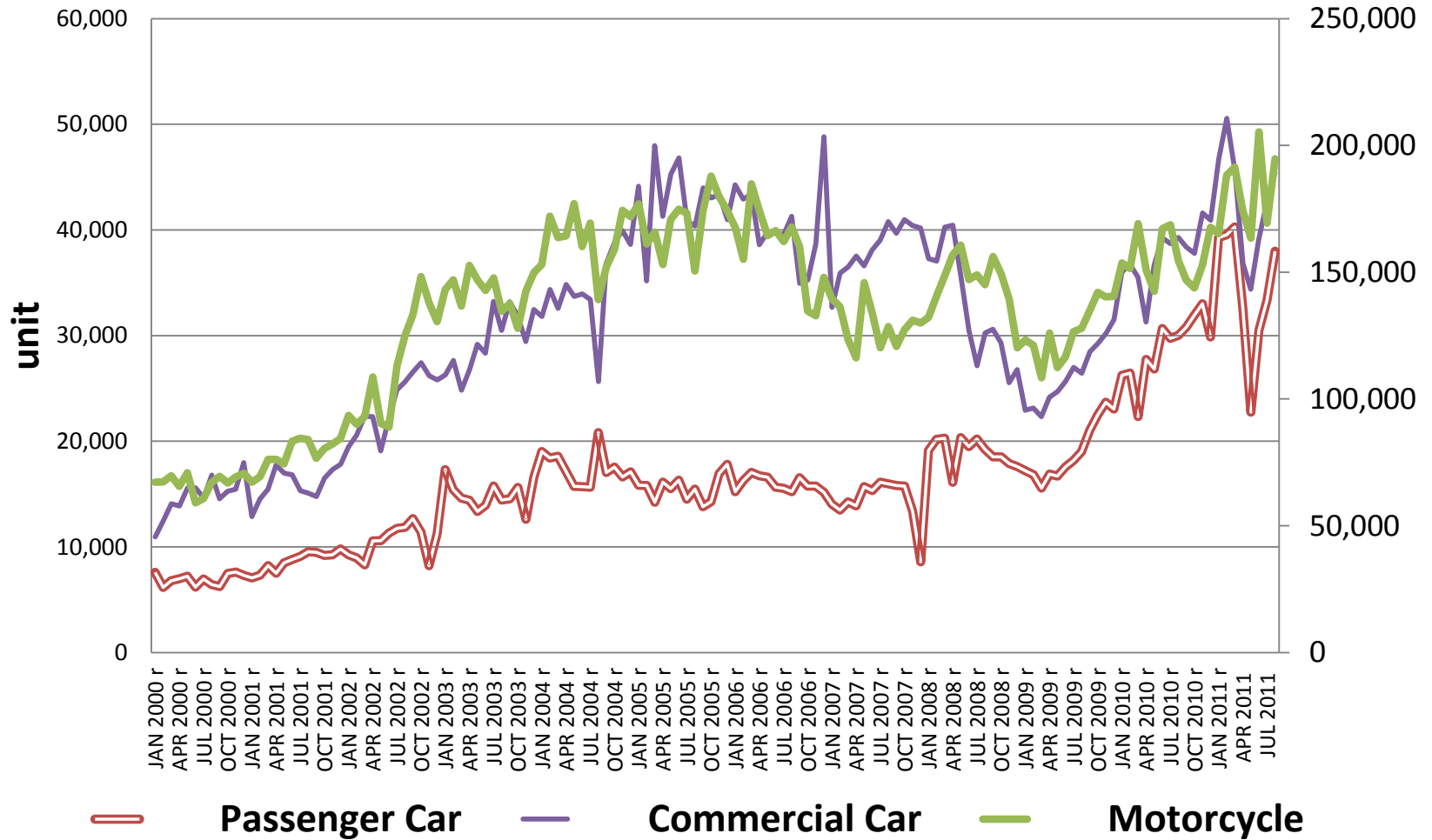


Dominated by Japanese cars

- In 2007 total vehicle production peaked at 1.25 million units, 65% of which are one-ton pickups and 35% passenger cars.
- Japanese cars dominate production, accounting for 90% of total.
- In 2014, the market structure still remains the same.

Domestic Car Sales

2000- 2011



Challenges

- Car ownership in Thailand is 9 people per unit, much less than 1.3 in the United States and 1.7 in Japan.
- Thailand is facing competition from many Asian countries, especially China and India, to attract foreign investment from carmakers and auto parts suppliers to their homelands.

Challenges

- The auto industry, which is the *highest* paid manufacturing sector, is facing a shortage of skilled labor.
- Salary increases are about **5.6%** per year on average and **labor unions** are very influential when compared to those in other sectors .

An elusive target: 2m units

- The two-million-unit target is not beyond reach but it will be delayed a few years.
- Unsolved political uncertainties have dragged down some investments and the local vehicle market has been slowing down in 2009.
- In 2011, the industry forecasts of 1.8 million units despite the effects of widespread flooding, including in manufacturing areas of Honda in Ayutthaya.
- Most of the country's major automobile assembly plants and part suppliers are located in Rayong, Chon Buri and Samut Prakarn, which have yet to be affected by floods.

Historical Development of the industry

1. Import substitution policy

(1960-1970)

2. Local content requirement

(1971-1986)

3. Semi-liberalization

(1987-1997)

4. Post crisis 1997:

export-orientation strategy

The *first* stage of automobile industry development (1960-1970)

The auto industry was among the first to receive promotion from the Board Of Investment (BOI), hoping to create linkages to other industries.

Import substitution was created through high tariff and limitation of new assembly plants until it was lifted in 1993.

Four new assemblers had been established: Honda, GM, BMW, and Auto alliance (Ford and Mazda).

The *second* stage (1971-1986)

How was the auto parts industry created?

- From 1973 to 1999, the Thai government had implemented various policies: a Local Content Requirement (LCR), mandatory and selective items for localization, high import tariffs, a ban on imported CBU, a ban on new assembly plants, and localization of diesel engine.
- Local component firms produced Replacement Manufacturing (REM) as well as Original Equipment Manufacturing (OEM) parts.
- There are 200 OEM firms-Japanese owned or joint ventures.

The *third* stage

Semi-liberalization period: 1987-1997

- By the end of 1987, Siam Motors, Nissan and MMC Sittipol (Mitsubishi) started exporting “**Champ**” to Canada.
- The minimum local content (LCR) requirement was set at **54 %** for passenger cars, **70%** for one-ton pickup trucks.
- Assemblers of pickups must use local manufactured engines; **imports of engines were banned.**
- ***Still an Infant industry?***

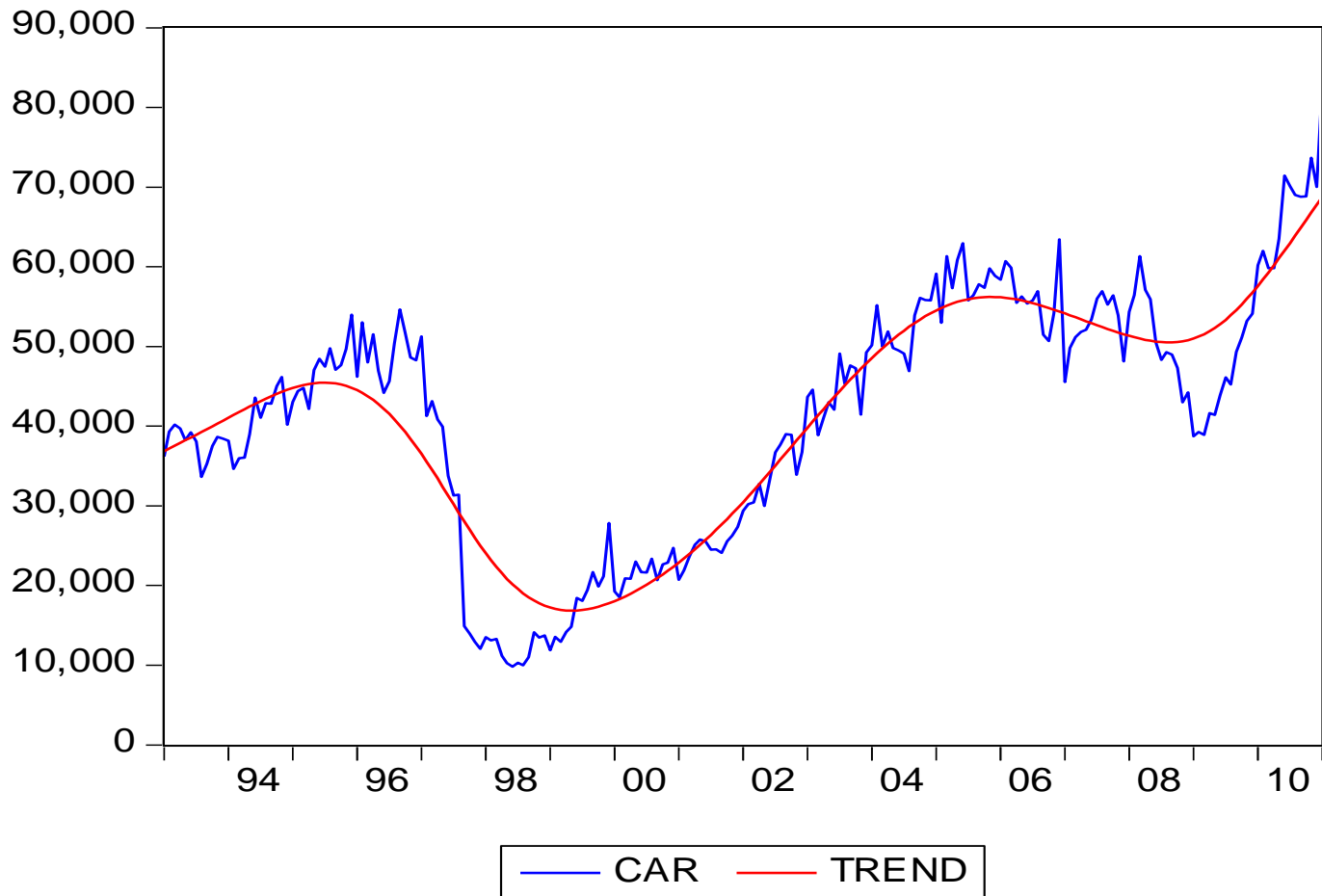
The ban on imports of CBU was lifted in 1993

- The protective tariff system on automobiles and parts were restructured.
- The highly protected industry has become more competitive.
- *BOI promoted three Japanese joint ventures (Toyota, Nissan, and Isuzu) which began producing diesel and gasoline engines in Thailand.*

Impact of the 1997 crisis

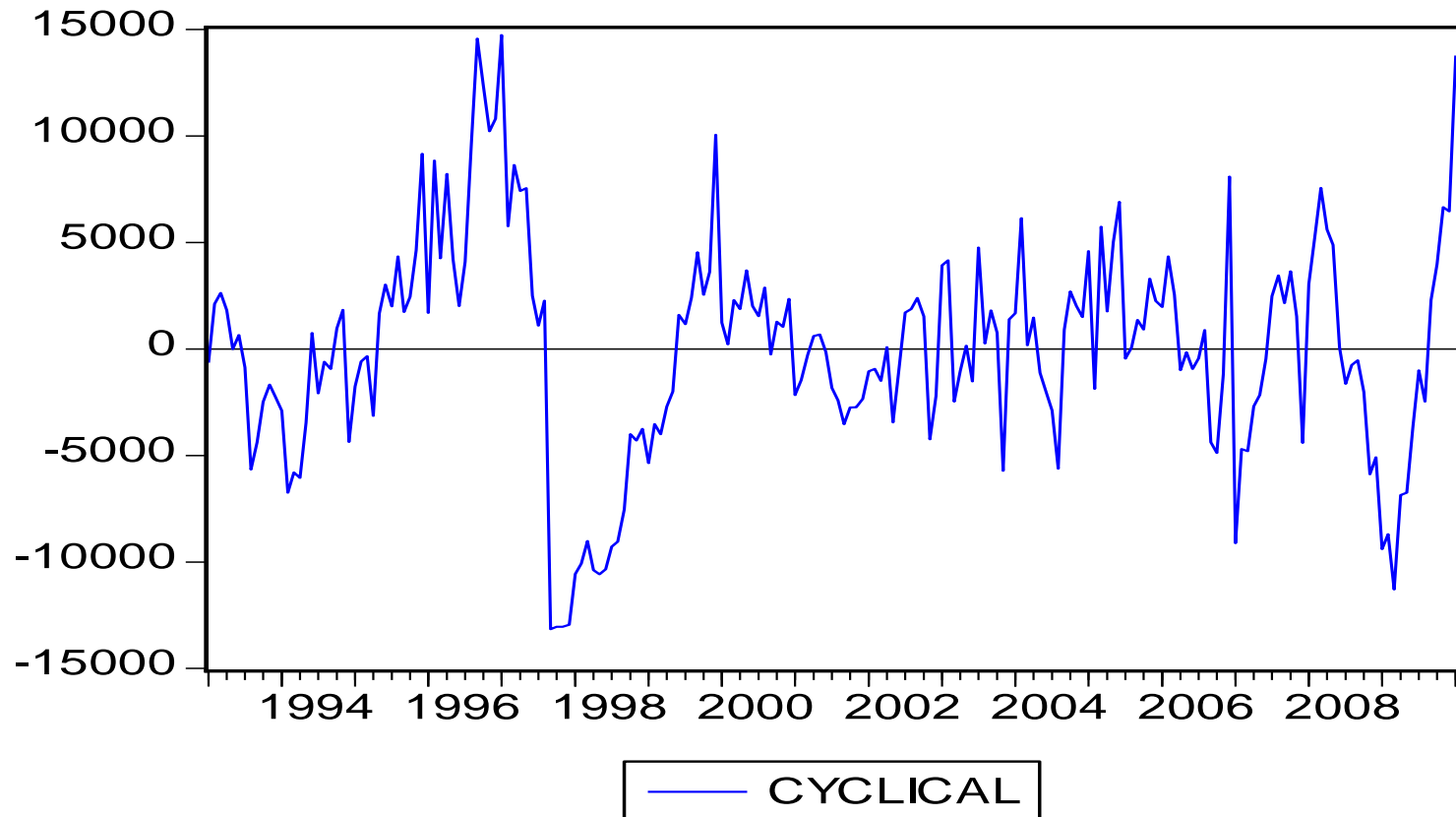
- Domestic sale declined sharply by 38 % in 1997 and 60 % in 1998.
- The capacity utilization was lowest at **17%** in 1998.
- Firms reduced production, temporary stopped production, reducing numbers of workers.
- Who drove that light blue Toyota Soluna (sub-compact model) out of the factory --during the severe economic slump in 1998?

Domestic automobile sales: AFC, GFC, and before the floods



Deviation from long-term trend: resilience

(number of automobile domestic sales:
Jan 93- Jan 2010)



Impact of the 1997 crisis: Shifting strategy

- Toyota and Honda which previously concentrated on only domestic market began **shifting** the focus to export markets by trying to utilize excess capacity.
- Baht depreciation helped during the time when the rest of the world was growing
- *The slower we change, the faster we die.*
- **What is the big difference between time and money?**

The fourth stage of car industry development

Export orientation

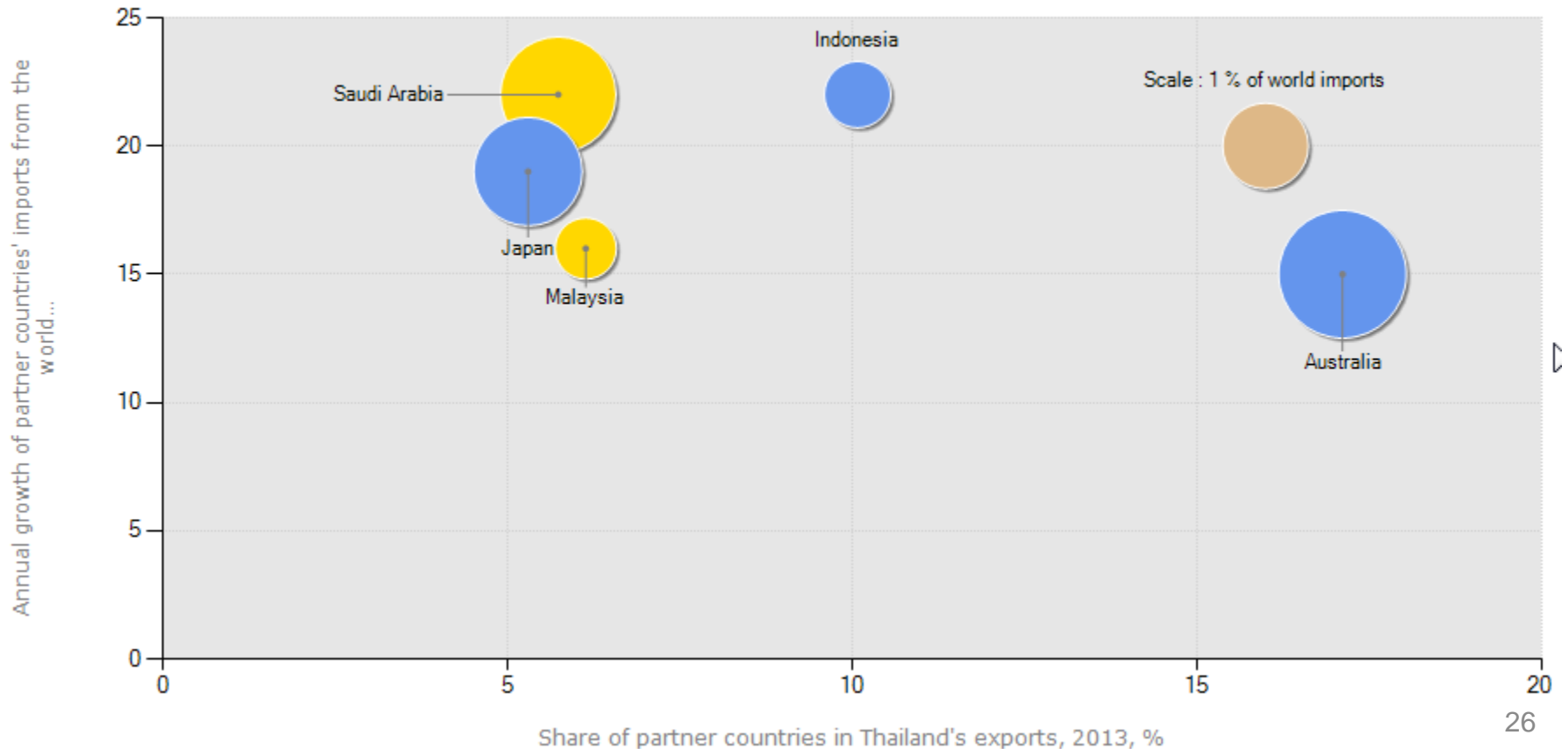
the post 1997 era

- Before 1997, most production went to domestic market where local people had high purchasing power—only a small amount was exported.
- After the crisis hit and domestic demand collapsed, producers aimed more at the export markets.
- The crisis was a blessing in disguise.
- **The LCR was abandoned by the end of 1999**
- *Can we establish an industry starting with export promotion policy instead of import substitution policy?*
- After 40 years of development, Thai automobile industry has become externally oriented

Export market diversification of vehicles

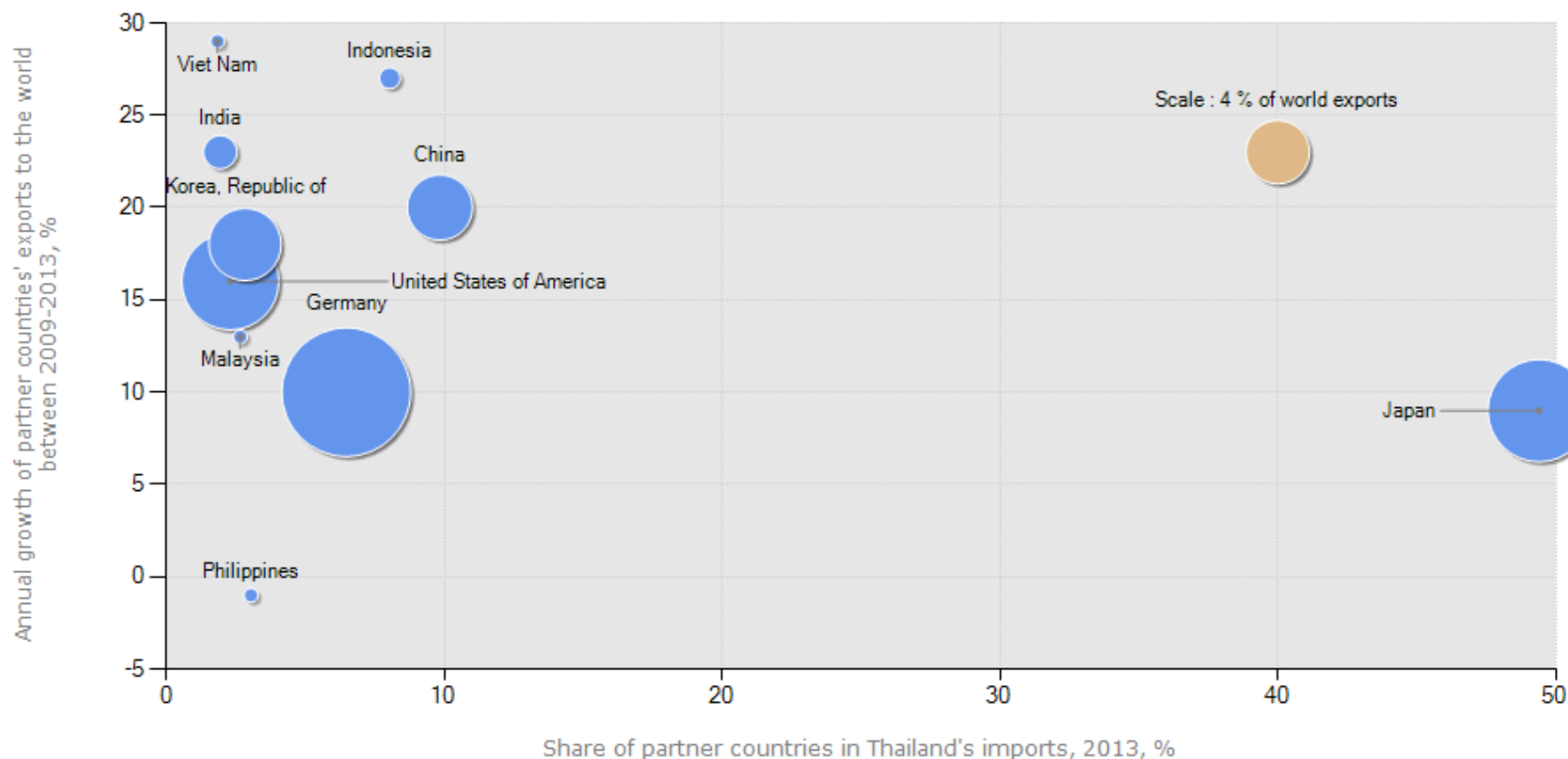
Top 5 markets

Prospects for market diversification for a product exported by Thailand in 2013
Product : 87 Vehicles other than railway, tramway



Top 10 countries where Thailand imports vehicles

Prospects for diversification of suppliers for a product imported by Thailand in 2013
Product : 87 Vehicles other than railway, tramway



● Thailand import growth from partner > Partner export growth to the world

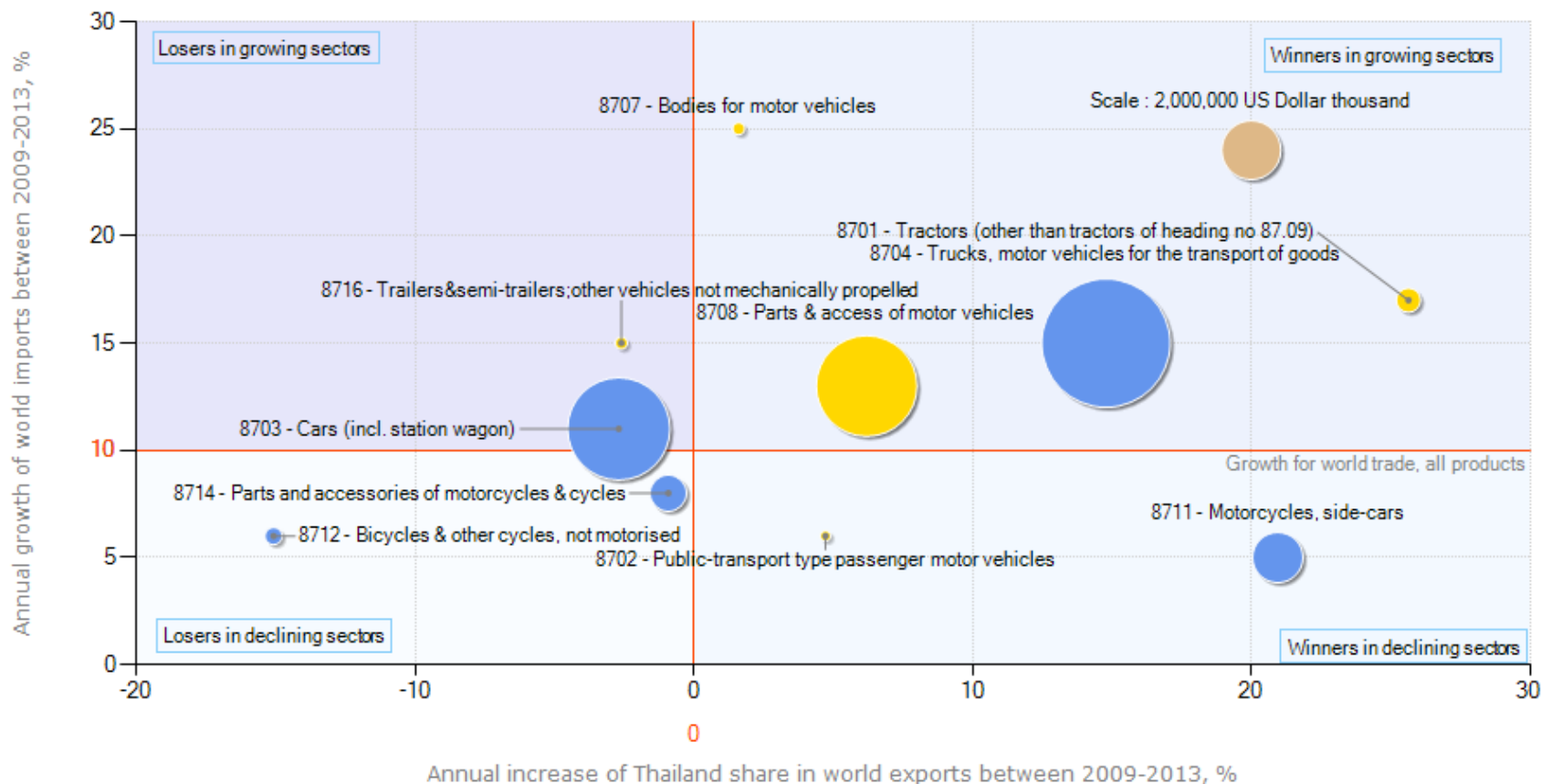
● Reference bubble

The bubble size is proportional to the share in world exports of partner countries for the selected product



Growth of Thailand's share in world exports (X-Axis) and growth of world imports (Y-Axis) (average rate: 2009-2013)

Growth of national supply and international demand
for export products of Thailand - 2013



● Thailand is a net importer for this product

● Thailand is a net exporter for this product

● Reference bubble

The bubble size is proportional to export value

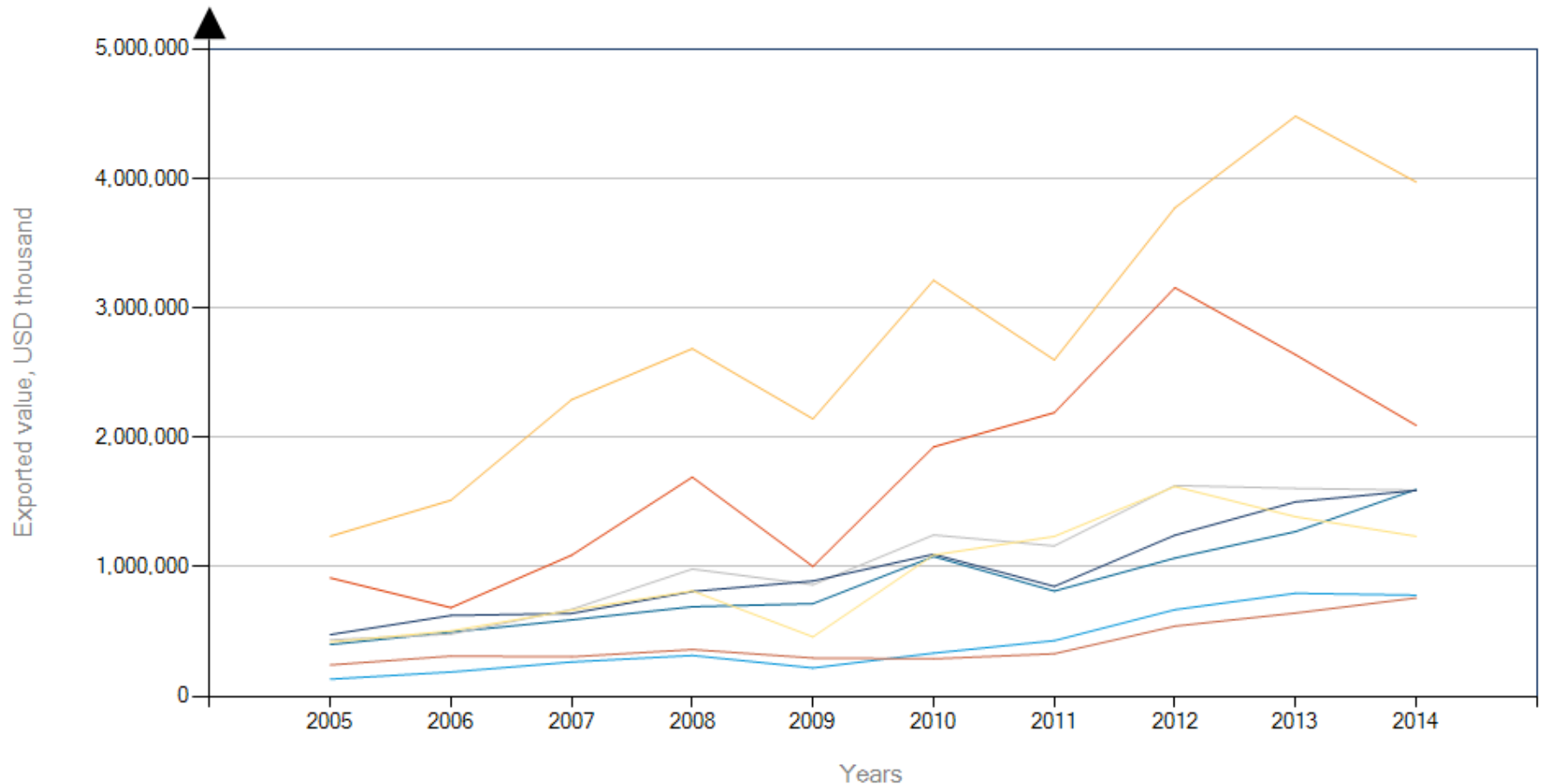


Exports Galore, until..

- Exports of automobiles increased sharply after the crisis, from 14,020 units in 1996 to 42,218 in 1997, to 67,857 in 1998, and 125,702 units in 1999.
- Some part and component firms succeed in penetrating export markets of some products: ***safety glass, ignition coils, wiring harnesses, air and oil filters.***
- What are **backward** and ***forward linkages*** in the industry?

Importing markets for Thailand's vehicles and parts

List of importing markets for a product exported by Thailand
Product: 87 Vehicles other than railway, tramway



Importance of parts and components

- Exports of automobiles and auto parts have continually increased since 1997, as many foreign conglomerates have moved their production bases to Thailand.
- Strong **auto-parts** industry is a fundamental support for the growth of automotive production and attracts foreign companies to move their bases here.

Why did foreign firms invest in Thai automobile sector?

- Thailand has no ***national car*** project; thereby offering a level playing field.
- Open market policy (lifting LCR, reducing import tariff on raw materials).
- Expanding domestic markets and establishing export platform.
- World class suppliers of parts followed GM and Ford's relocation to Thailand.

Problems with local **parts suppliers**

- They need to meet international standard on Quality, Cost, and timely Delivery (QCD)
- Costs of parts and raw materials was reduced by 15-30% by 2006, but can we still compete in 2011?
- Plants in Thailand have limited role in *process engineering*.
- The lack of process engineering capability was due to the fact that suppliers in Thailand ***need not*** perform designing, tooling, or production process themselves.

Toyota's production network

Source: JETRO and Japanese Automotive Parts Industry

- Thailand: **diesel engine**, steering column, body parts, pressed and resin parts
- Malaysia: **engine computers**, steering linkages, wiper arms and blades
- Indonesia: **gasoline engine**, multi-purpose vehicle CKD, door locks and door frames
- Philippines: **transmissions**, drive shafts (front wheel) and switches

Honda's regional production network

- **Thailand:** pressed parts, meter parts, and cylinder blocks
- **Malaysia:** bumpers, dashboard, constant velocity joints
- **Indonesia:** cylinder blocks and heads, engine valves, **automatic** transmissions
- **Philippines:** **manual** transmission, exhaust parts, pedals

Determinants of the demand for durable goods

- The improved economy, low interest rates, strong competition among carmakers are major positive factors contributing to expanding local markets.
- Expected or permanent income
- Credit availability
- ***User cost of capital***
- Expectations of future prices
- The depreciation rate

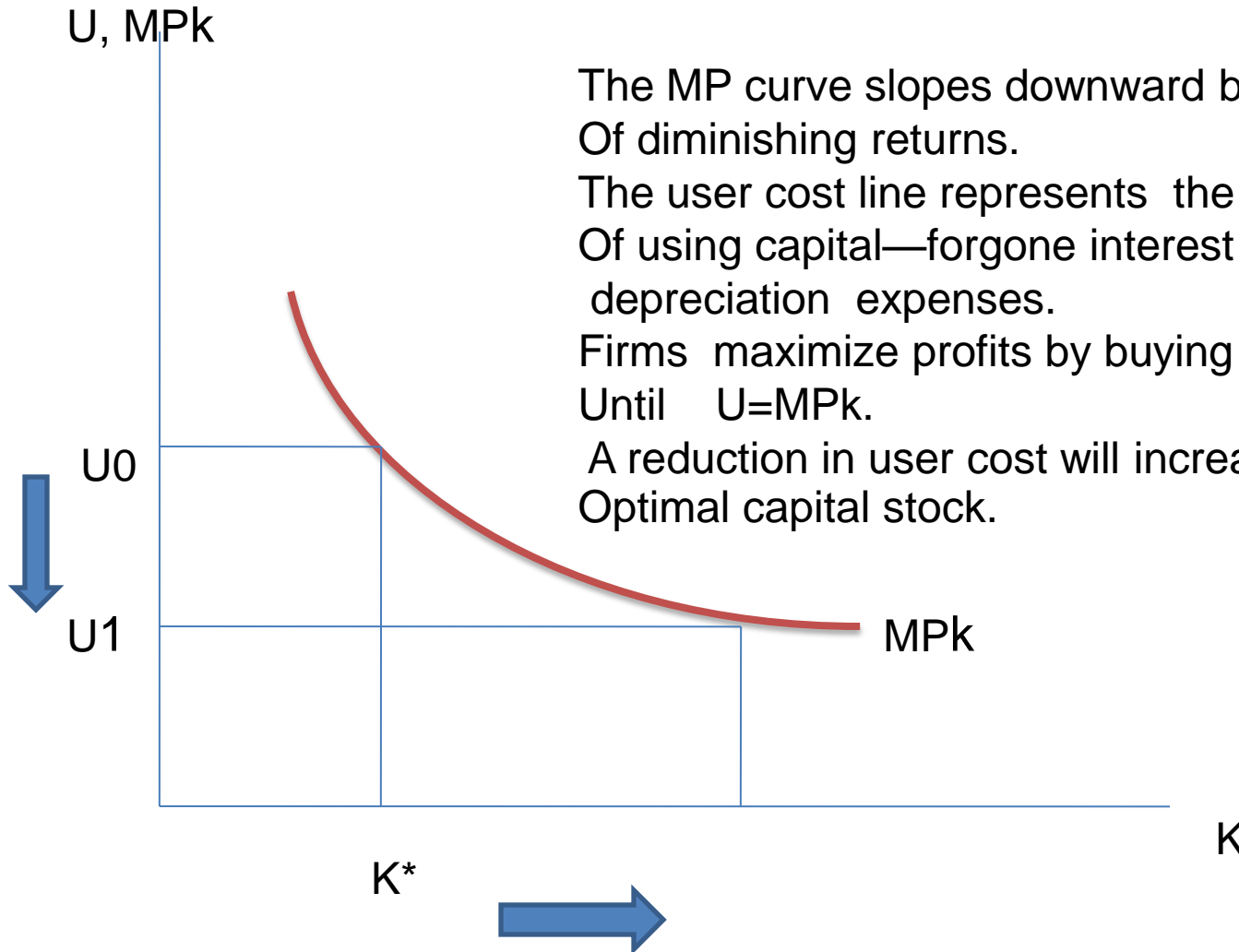
What is the user cost of capital?

- Price of the capital goods (P_k)
- Interest rate (r)
- Depreciation rate (d)
- Expected increase in the price of the capital goods
- *Tax rebate* and allowances (τ)

User cost of capital
(Tax rebate for first time owner of sub-compact car)

$$Uc = (r + d - \tau - P_{kt}^e)$$

The user cost and the optimal capital stock



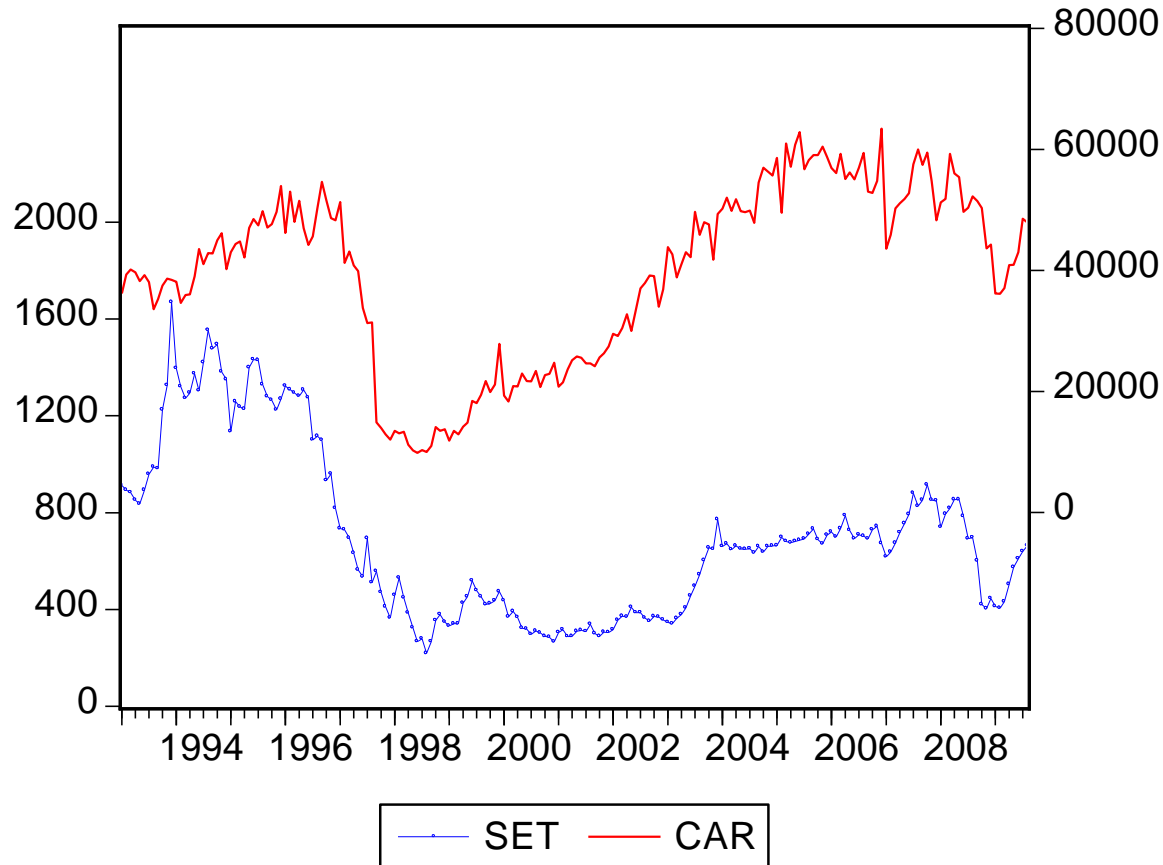
The MP curve slopes downward because of diminishing returns.

The user cost line represents the cost of using capital—forgone interest plus depreciation expenses.

Firms maximize profits by buying capital until $U=MPk$.

A reduction in user cost will increase the optimal capital stock.

Financial assets and mobile property what do they have in common?



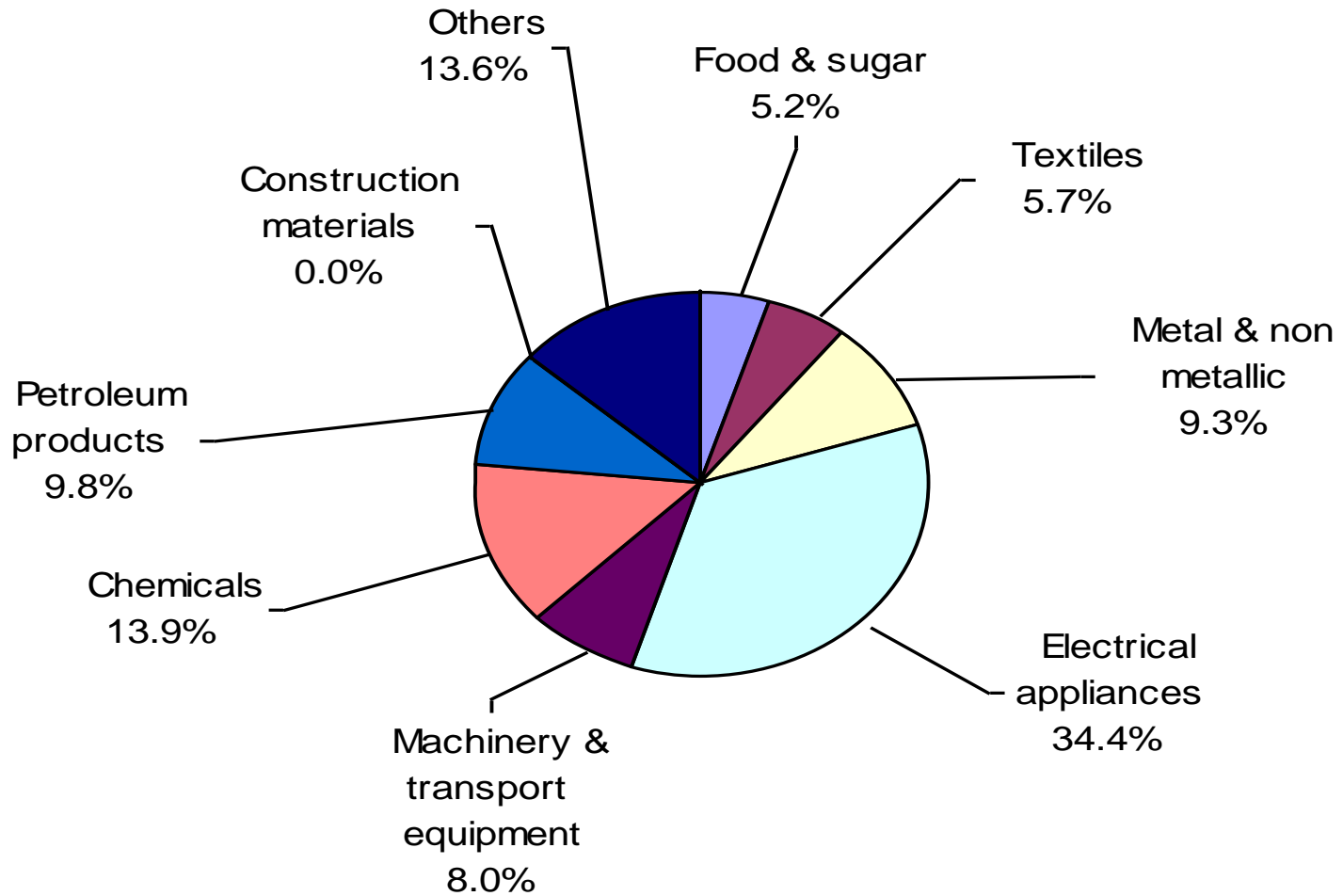
On the road to becoming Detroit of the East? (Dream on)

- Thailand is the largest automobile market in Southeast Asia.
- It has 1,095 **auto parts** producers, compared with 385 in Indonesia, and 232 in Malaysia.
- Thailand *hoped* that BMW would locate a design center in Thailand (the third after similar operations in Germany and California)
- *Where can we find the best car designer in the world?*
- The country's pickup truck market is also said to be the second largest in the world after the US, because of the strength of the grassroots and small-business economy.

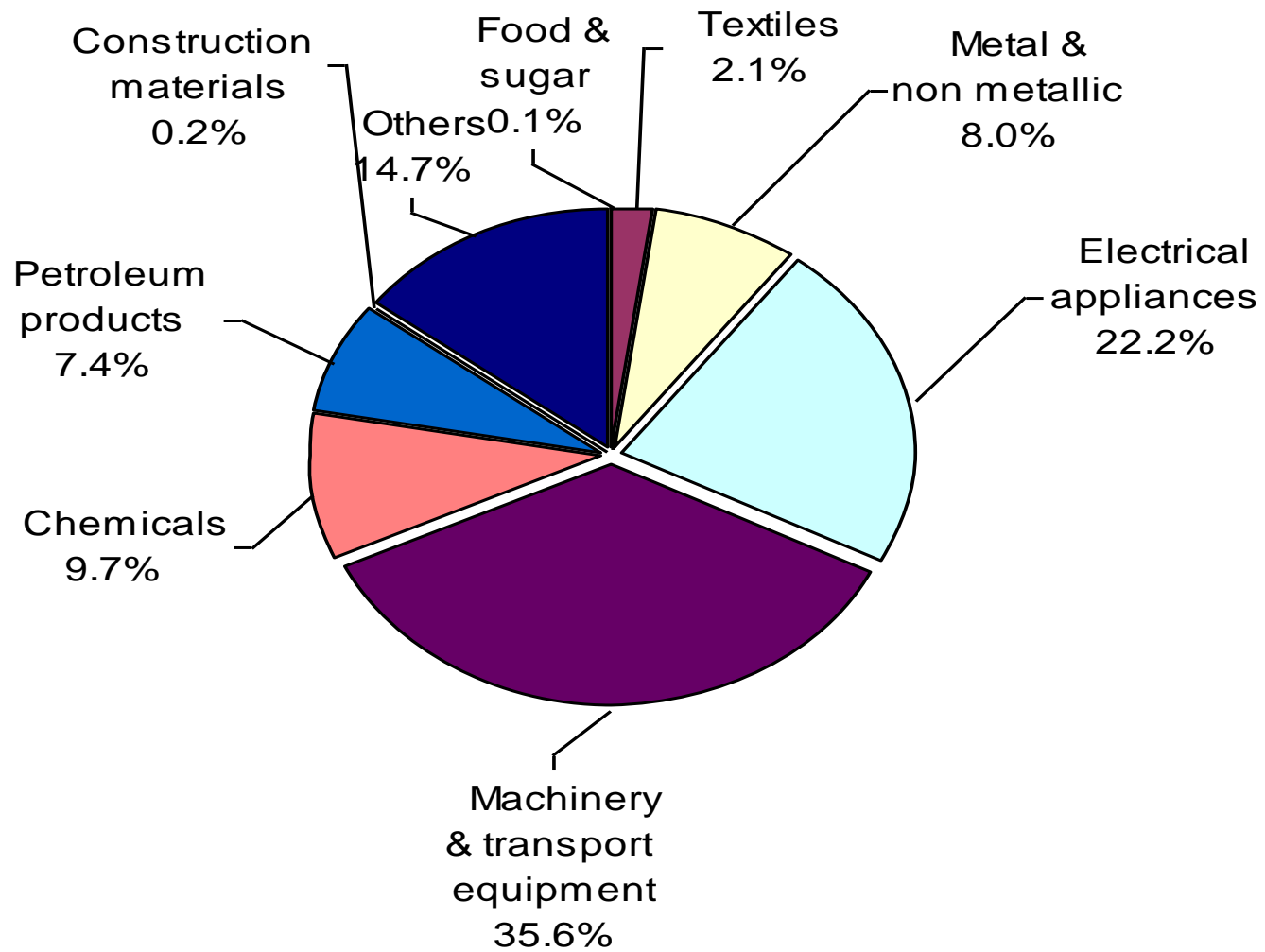
Automobile Hub

- Because of automobile assemblers' globalization strategy for production efficiency, Thailand was selected as a production hub in the region.
- Isuzu (partly owned by GM) and Toyota will transfer all of their pickup production in Japan to Thailand.
- However, Japanese firms were widely criticized for their hesitancy in transferring technology.

Net FDI by Sector: 1990



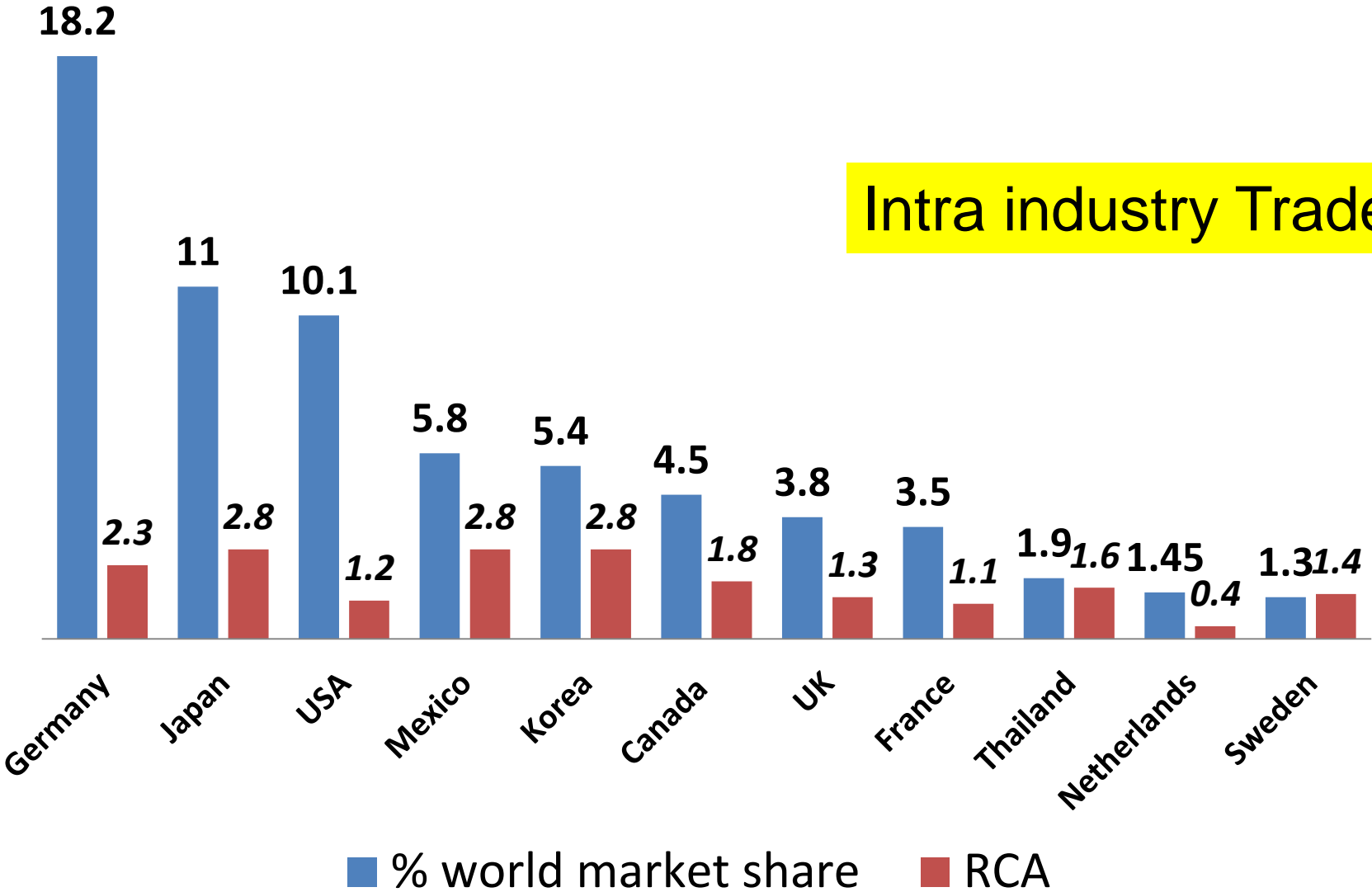
Net FDI by Sector in 2006



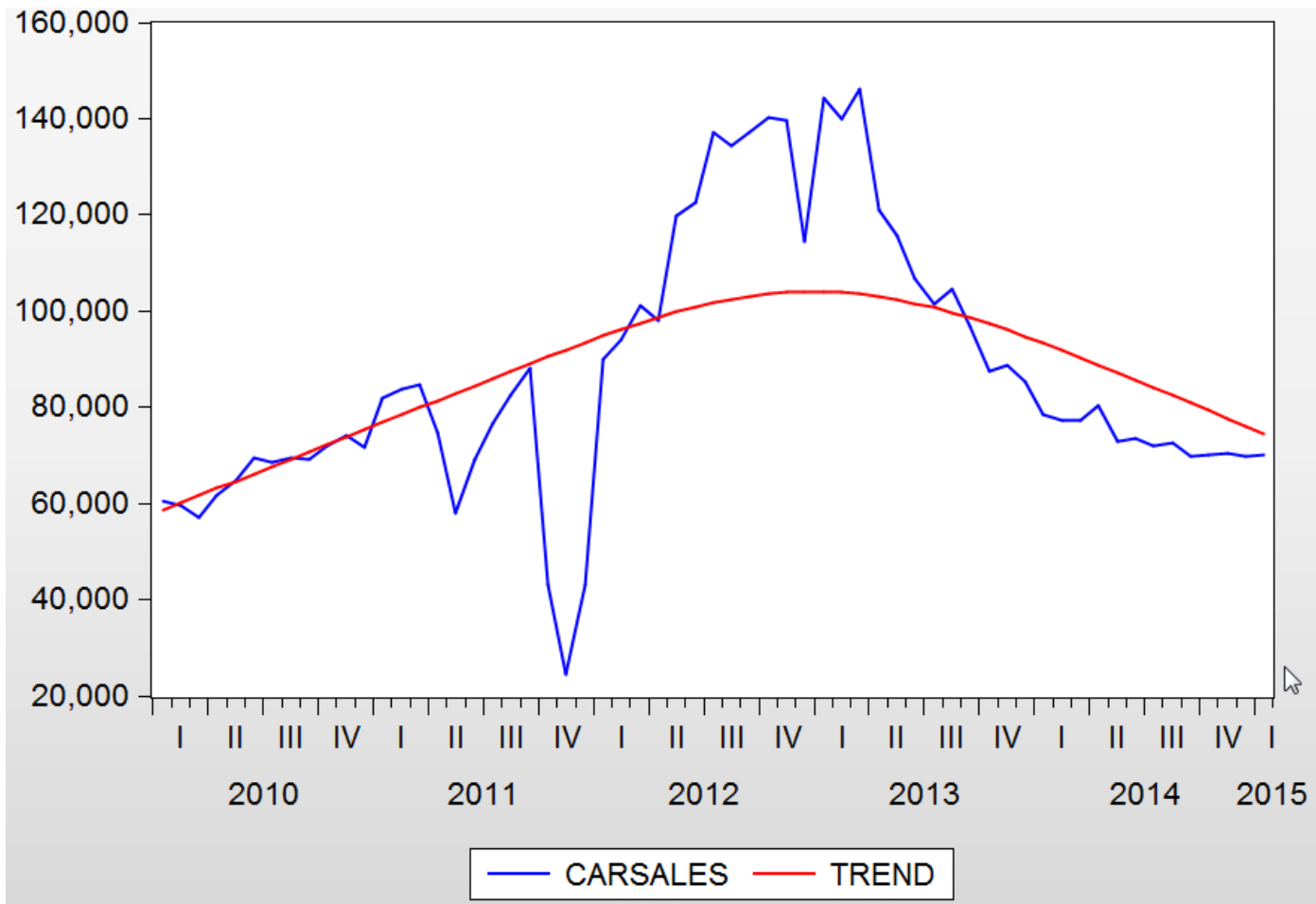
Impact of the global recession

- Vehicle exports to Australia, Thailand's major export market, was the hardest hit, Honda and Toyota saw their exports drop by 20-30%.
- But the impact on exports to other markets such as ASEAN, Europe, the Middle East and Latin America will be smaller.
- Exports were 56.2% of the total produced in 2008 (export-oriented industry).
- Total passenger car production in 2008 climbed 27.3% year-on-year to 401,474 units while pickup truck production slightly increased 2.8% year-on-year to 974,775 units.

Specialization and World Market share of Automobile Exports



Weakening domestic demand: declining trend



Concluding remarks

- Business sentiment and consumer confidence matters for sustainable recovery, provided that the slowing momentum of world economy in 2016 is not too pronounced and prolonged.
- Permanent or expected income, in addition to the user cost of capital, determines automobile sales.
- Credit availability may not be the silver bullet to save the industry.

Concluding remarks

- During recession, firms need to change strategy and restructure.
- Public subsidy is needed with conditions (GM and Chrysler bailouts)
- The sharp rebound of the industry has demonstrated its resilience.

Concluding remarks

- The importance of intra-industry trade: network trade

Exploitation of economies of scale and scope through trade integration

Competitive environment induces efficiency improvement.