

Challenges to Thai Automobile industry

Lecture 17

Bhanupong

Outline

- Recent Development
- Historical perspective
- Export capability
- Technology transfer
- Impact of global recession and fragile recovery

Exports of Vehicles: 2011

Source: Trade Competitiveness Map



General Profile of the Automobile Industry in 2011

Textiles	Textiles	
	(Value)	(Rank)
Number of exporting countries for the ranking in the sector	146	
Value of exports (in thousand US\$)	21,062,438	
Export growth in value, p.a. (%)	9	54
Share in national exports (%)	9	
Share in national imports (%)	5	
Relative trade balance (%)	23	
Relative unit value (world average = 1)	1	

Position in 2011

	Vehicles	Rank
	(Value)	(Rank)
Net exports (in thousand US\$)	1,089,672	11
Per capita exports US\$/inhabitant)	328.7	35
Share in world market (%)	1.13	16
Product diversification (N° of equivalent products)	11	29
Market diversification (N° of equivalent markets)	20	5
Relative change of world market share pa (%)	6.5	

Change index (2007-2011)

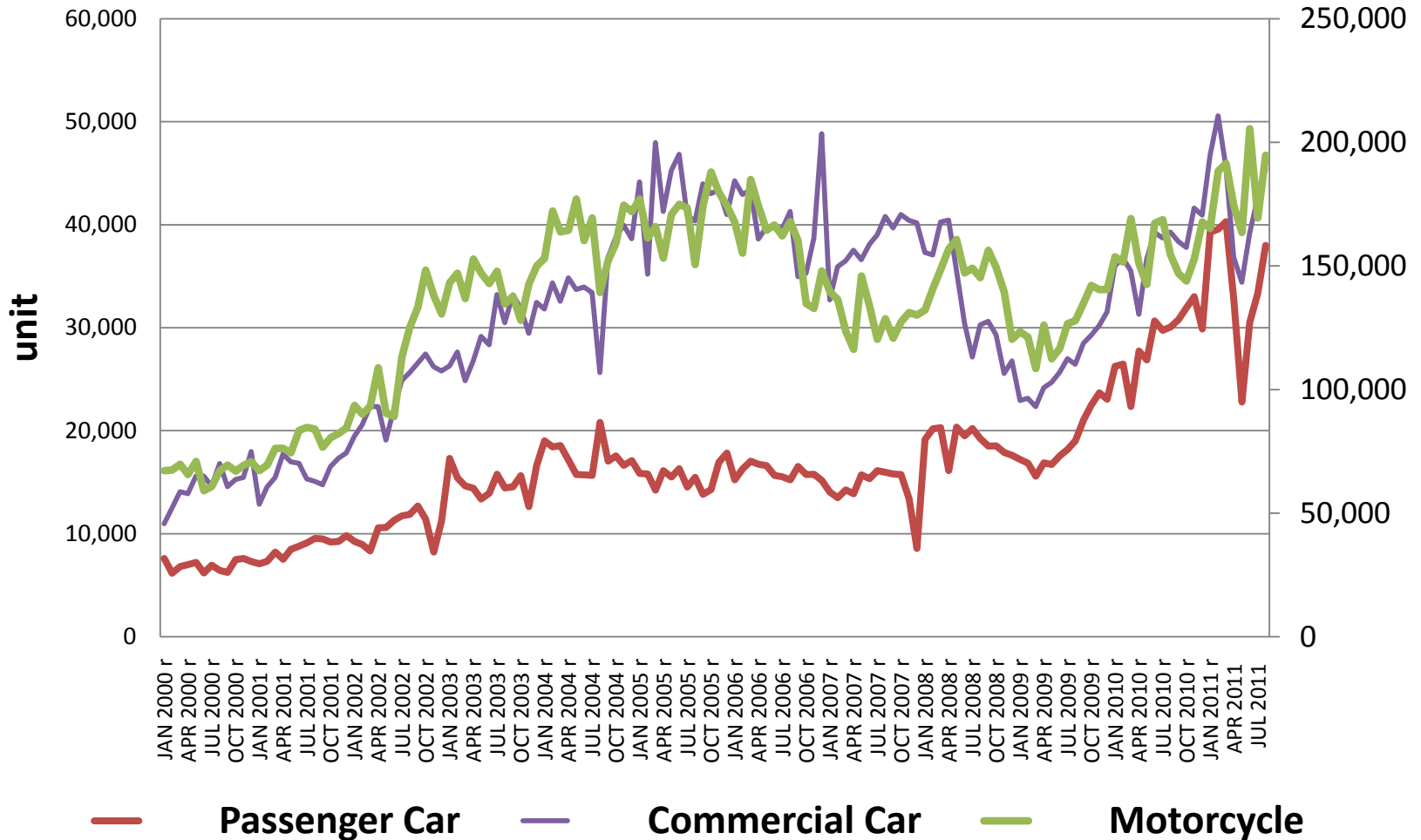
	Value	Rank	
Competitiveness effect, p.a. (%)	2.3	75	
Initial geographic specialization, p.a. (%)	4.9	16	
Initial product specialization, p.a. (%)	-1.7	112	
Adaptation effect, p.a. (%)	1	33	
Matching with dynamics of world demand		89	
Absolute change of world market share (% points p.a)	0.06	9	

Average index (ranks among 146 automobile exporting countries)

Average Index: Current Index	7	
Average Index: Change Index	73	

Car Sales

Jan 2000-July 2011



In 2007

- 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 2009

- Auto production excluding motorcycles in Thailand dropped 22.5% year-on-year to 1.08 million units.
- Of the total 592,000 vehicles were built for exports, a 24.5% year-on-year decrease, and the remaining domestic allotment was down 20%.

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.

In 2010

- Thailand is moving toward a place among the world's top 10 automobile manufacturer as overall production should reach 2 million.
- Local auto market weathered economic and political crises in 2009 to reach a record 800,000 sales, and achieved 10% growth in 2010.
- Thailand was ranked 15th in motor vehicle production in April 2010, trailing the Czech Republic. The top three were China, Japan and the US.

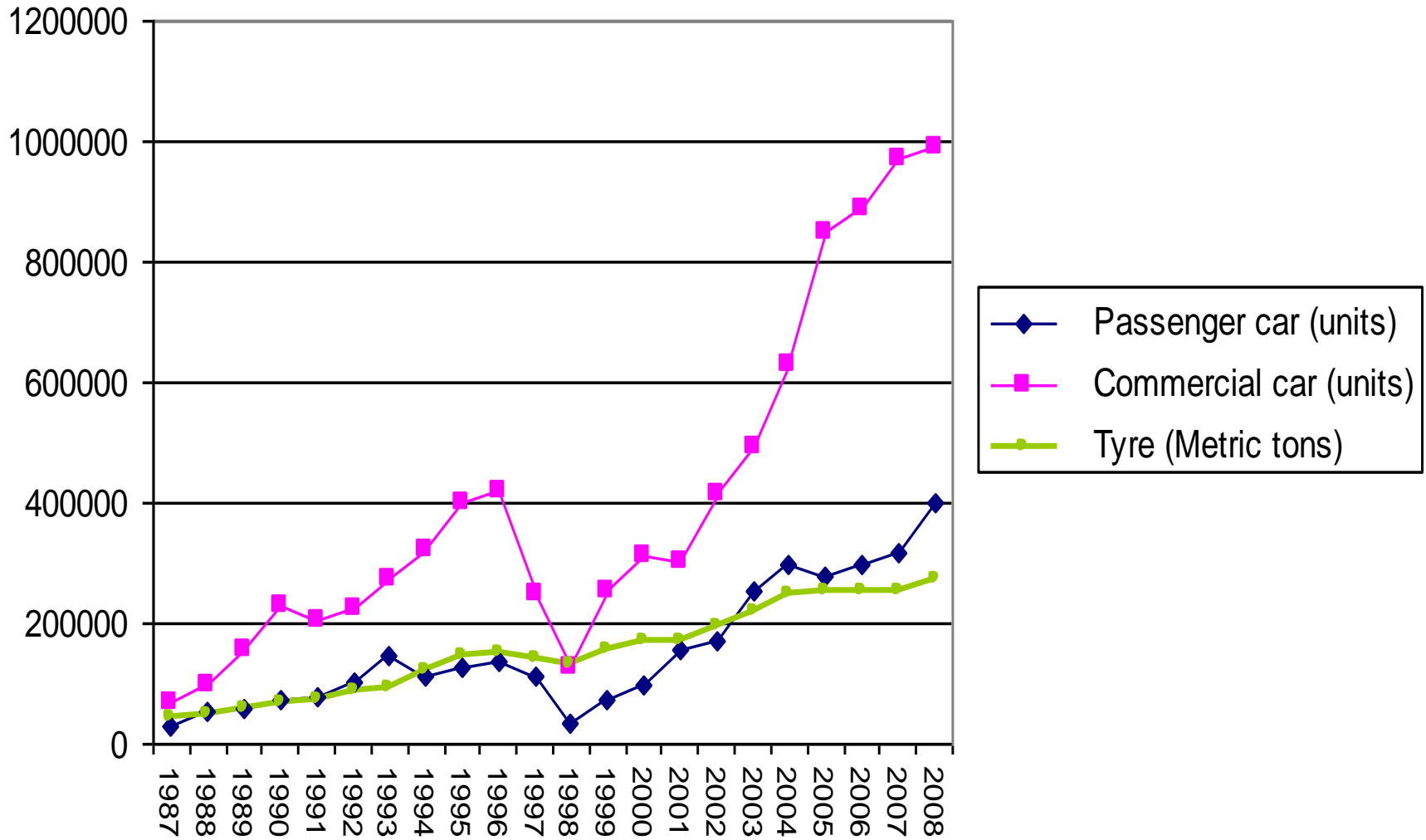
Challenges

- 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.

Production of automobile industry



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 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.

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.*

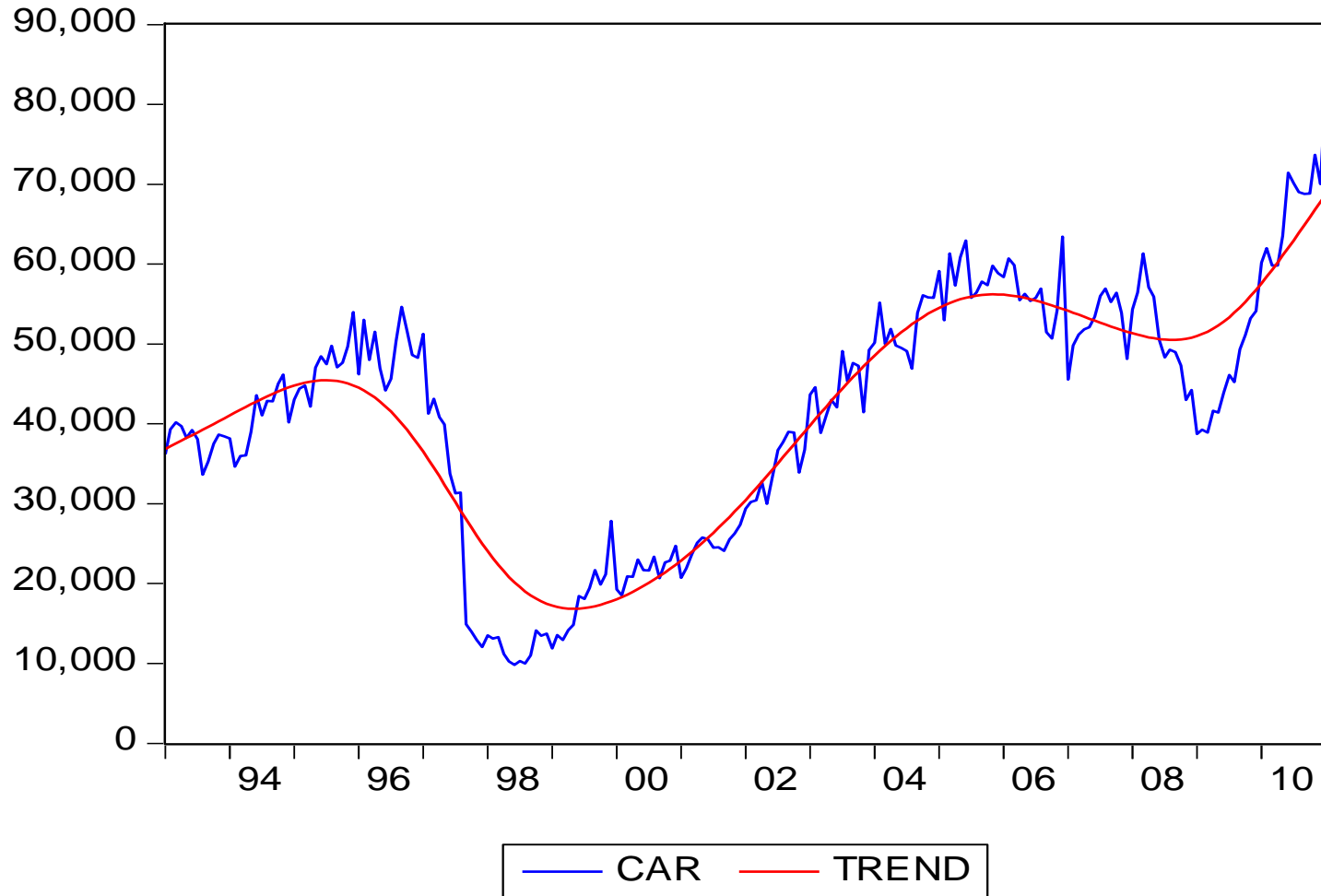
Why did foreign firms invest in the Thai automobile sector?

- 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.

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 out of the factory in 1998--during the severe economic slump?
- Toyota and Honda which previously concentrated on only domestic market began **shifting** the focus to export markets by trying to utilize excess capacity.
- *The slower we change, the faster we die.*

Domestic automobile sales



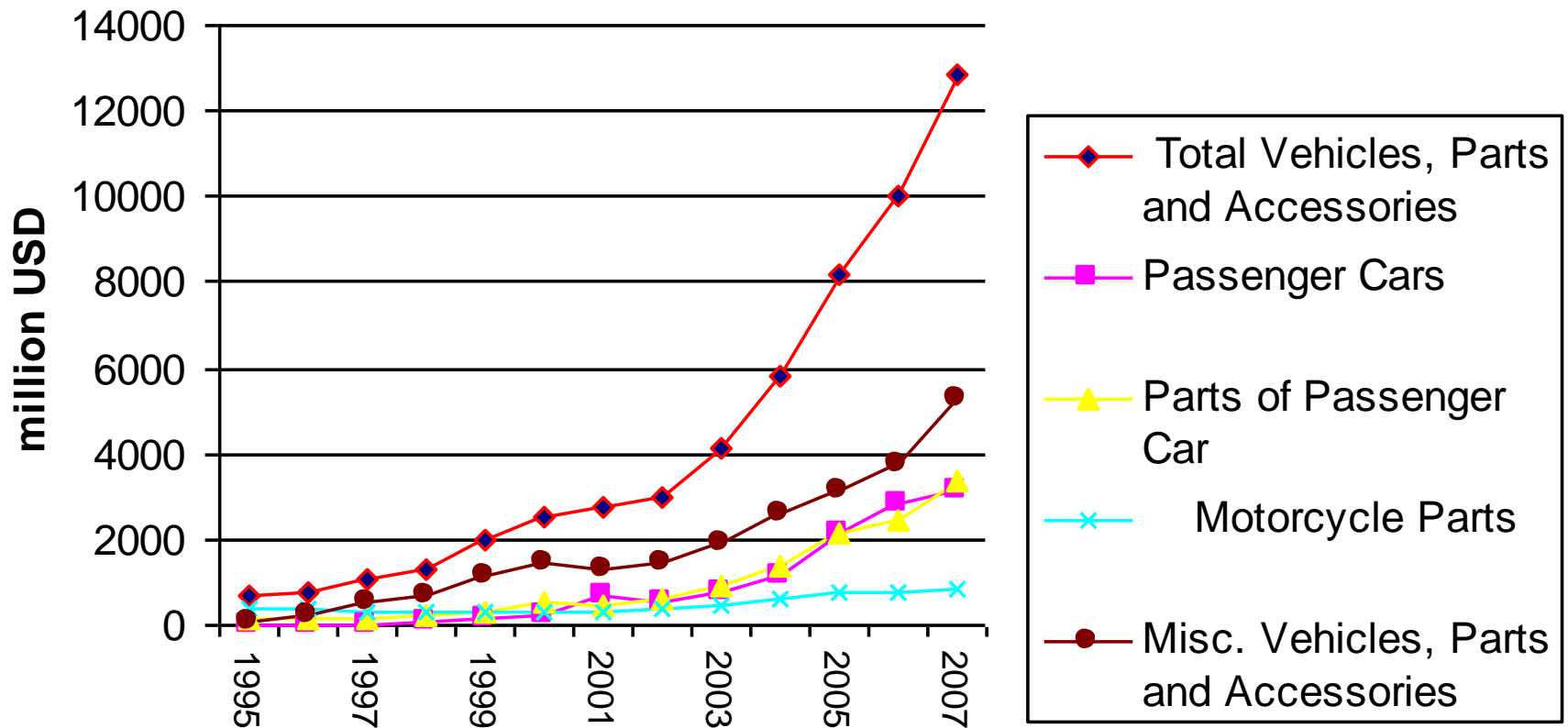
The fourth stage

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

Exports of vehicles, parts and components

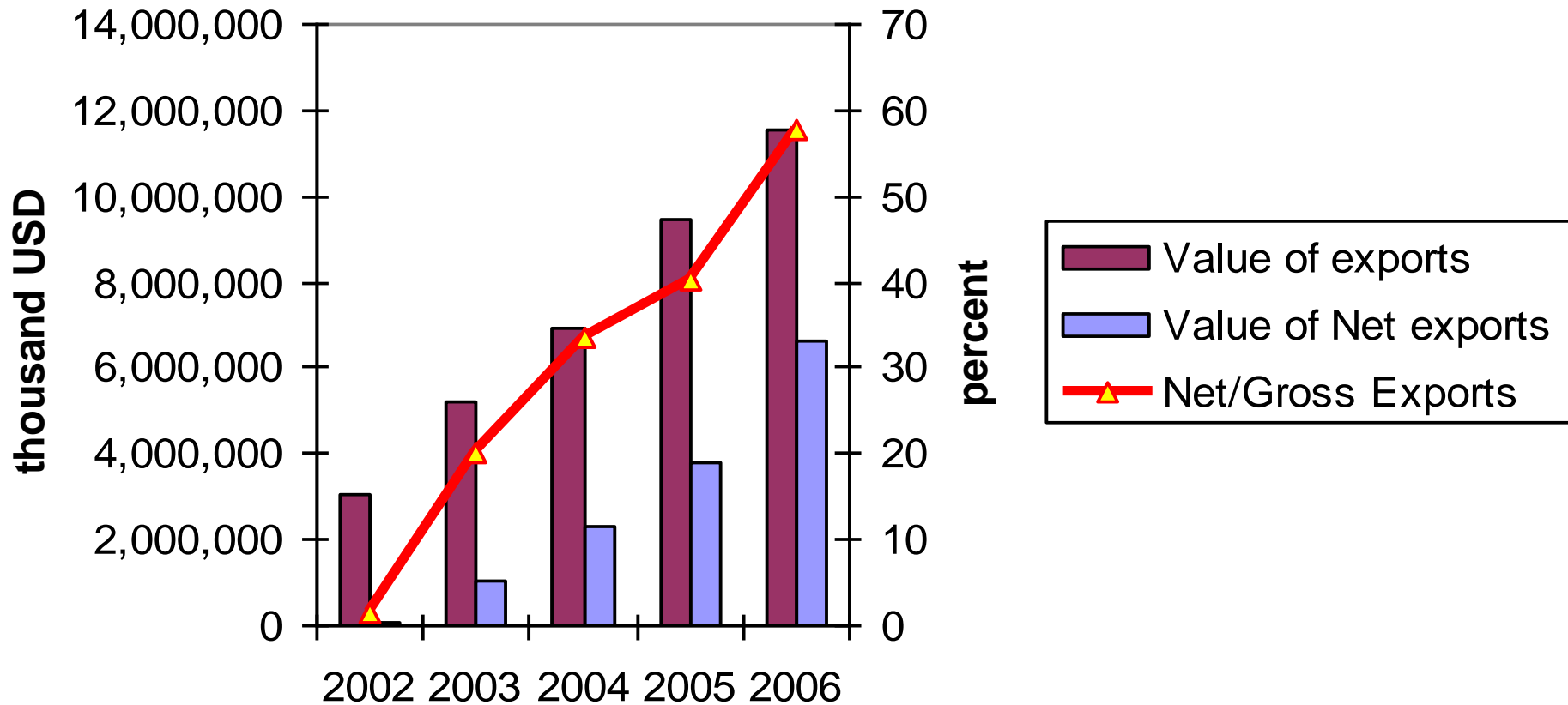


Source: BOT

Exports Galore

- 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.***
- The industry had recovered since 1999.
- What are backward and forward linkages in the industry?

Exports of transport equipment



Source: WTO Trade Statistics

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.

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

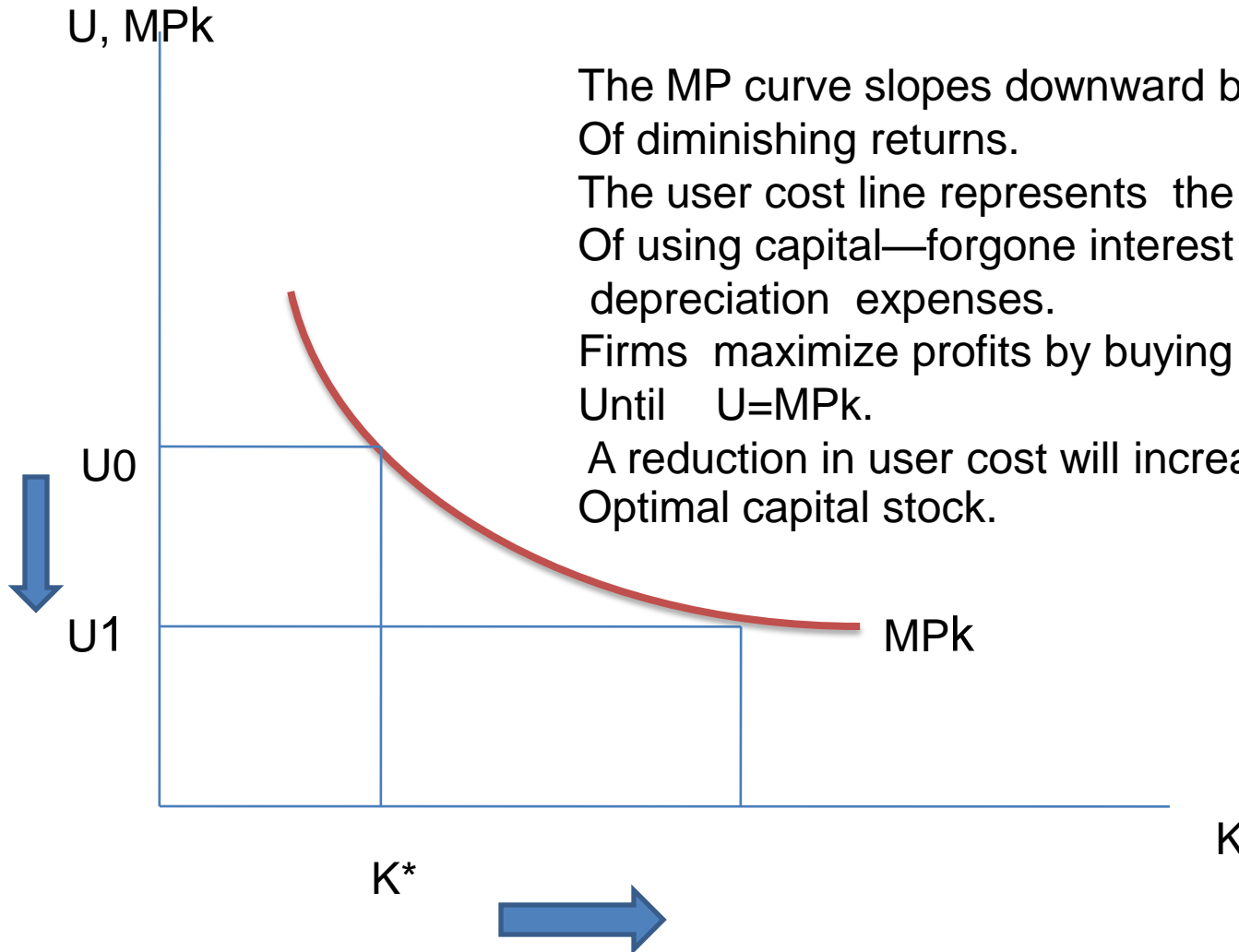
What is the user cost of capital?

- 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 (Impact of the first-car policy?)

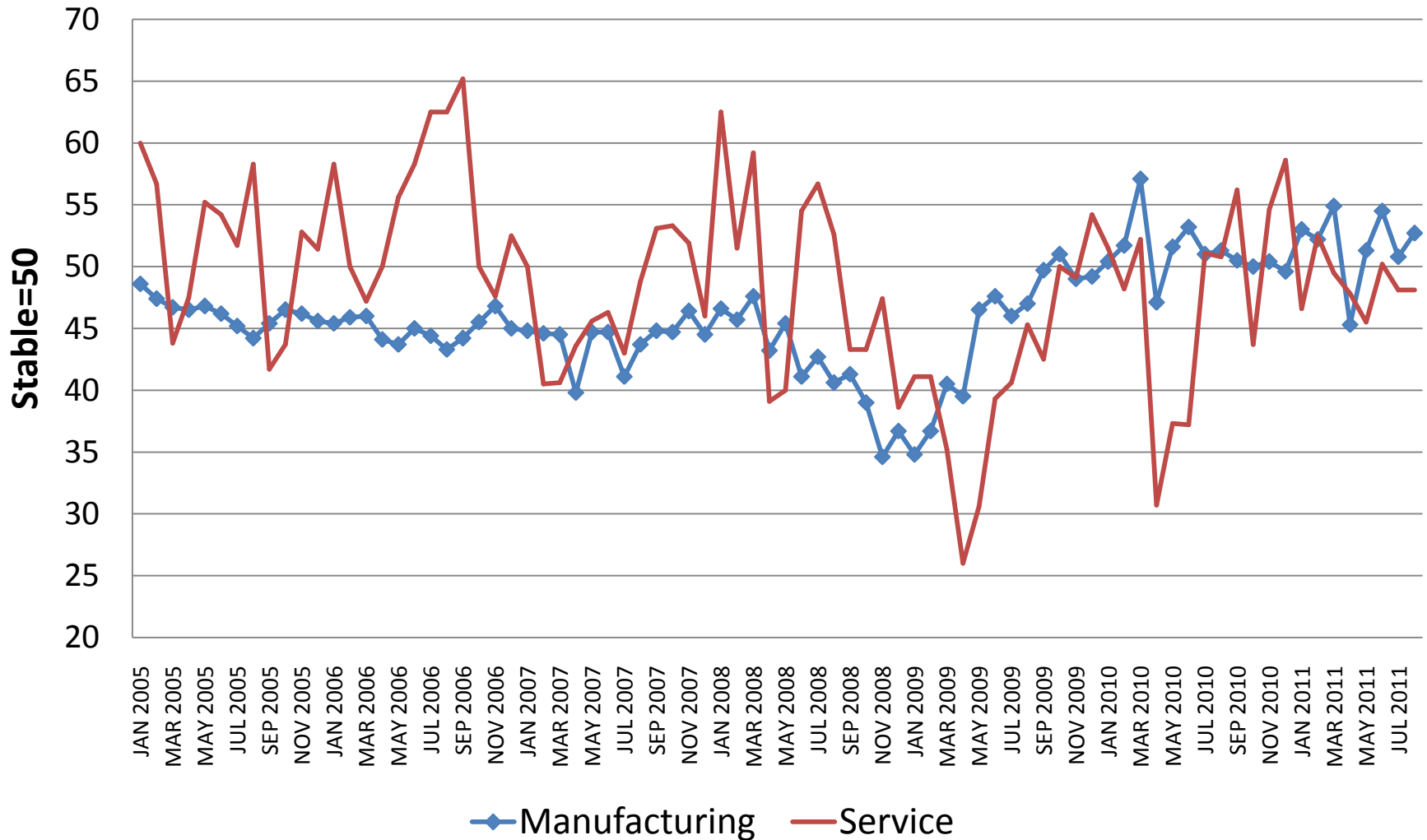
$$Uc = (r + d - \tau - P_{k_t}^e)$$

The user cost and the optimal capital stock

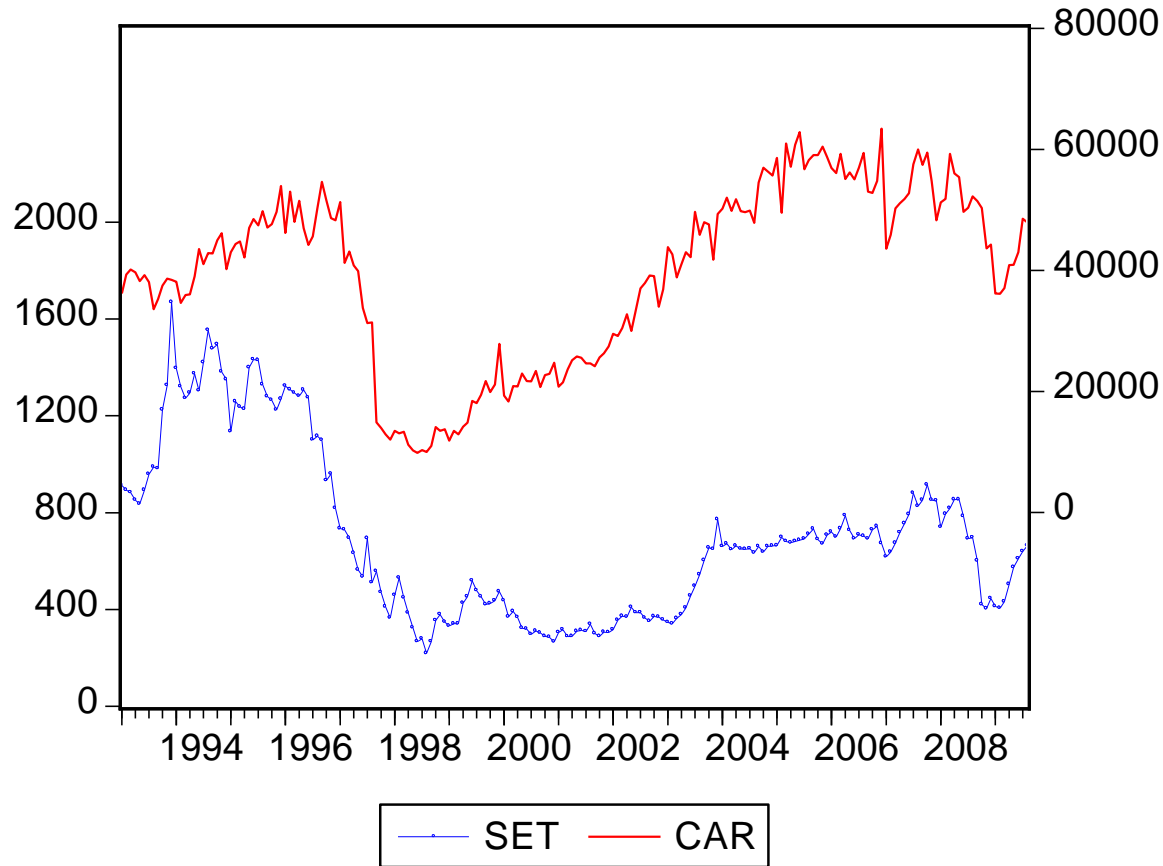


The MP curve slopes downward because of diminishing returns.
The user cost line represents the cost of using capital—forgone interest plus depreciation expenses.
Firms maximize profits by buying capital until $U=MPk$.
A reduction in user cost will increase the optimal capital stock.

Business Sentiment Index 2005-2011



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



On the road to becoming Detroit of the East?

- 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.

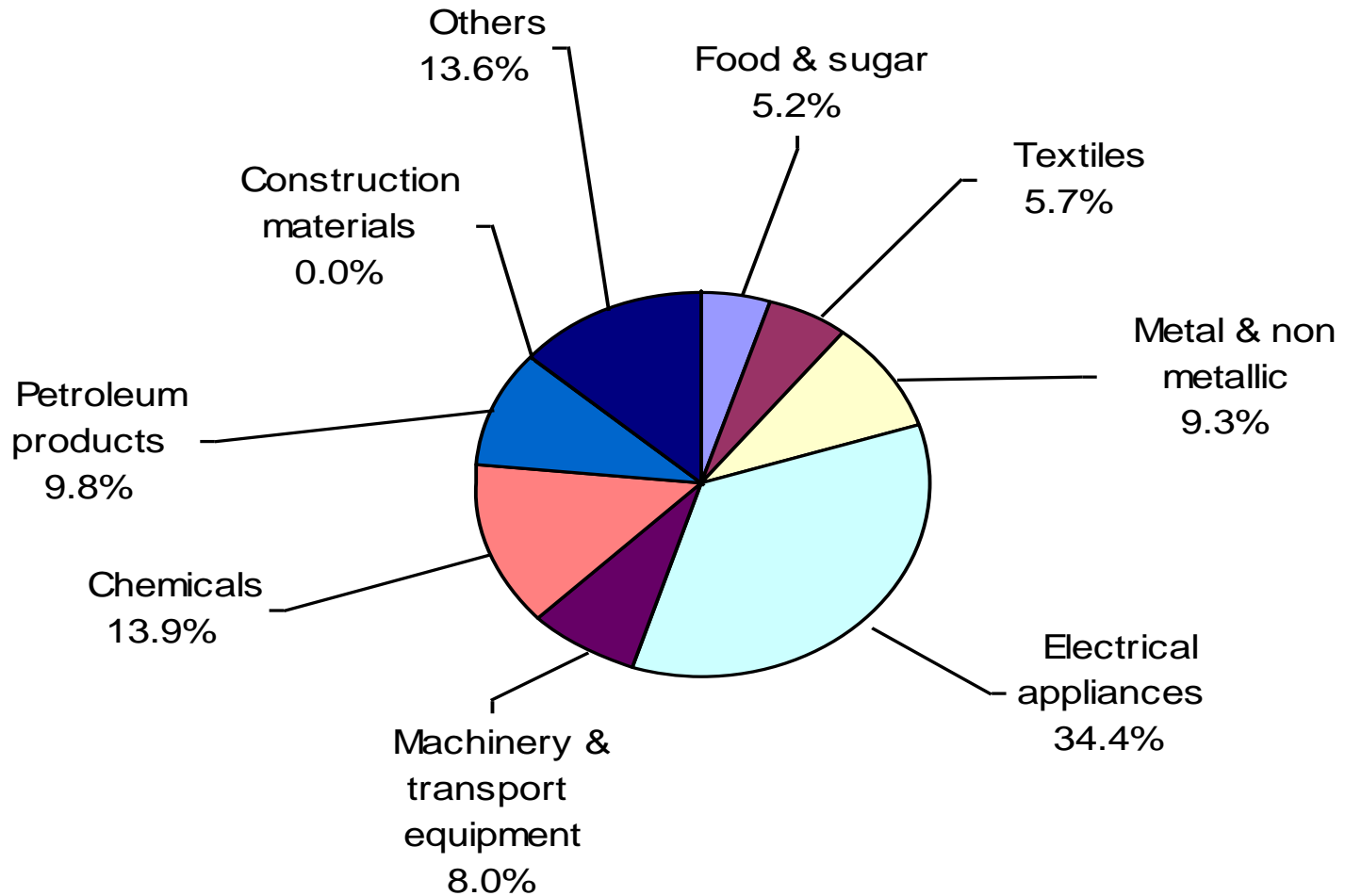
Automobile Hub

- 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.

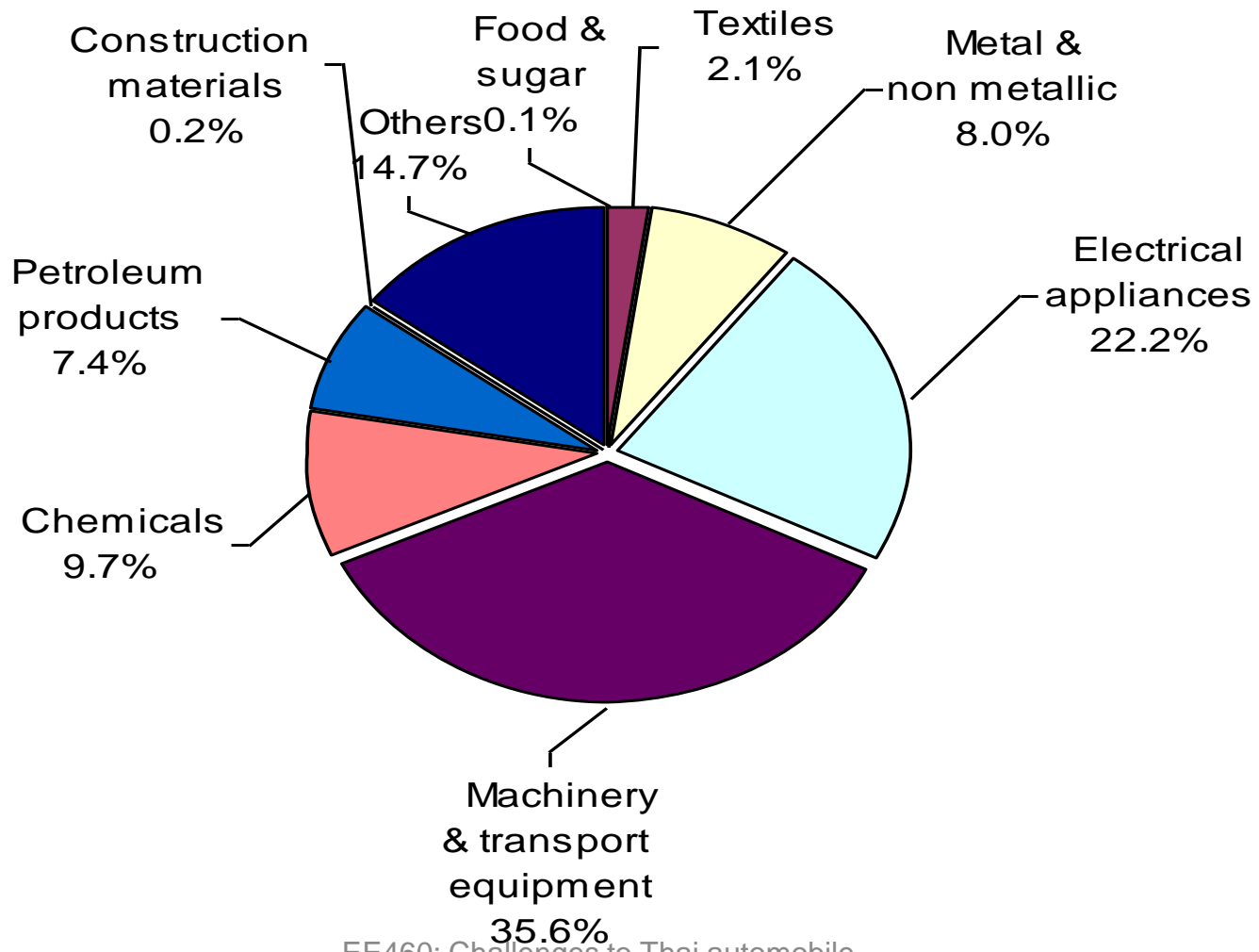
On technology transfer

- Kriengkrai (2004) found that the Japanese investors were willing to undertake technology transfer; there was clear evidence that direct inter-firm technical linkages were provided to independent suppliers in the process of which the transferor had to bear explicit costs without receiving any monetary return.
- Is free lunch possible?
- Can we expect a large corporation to be altruistic?

Net FDI by Sector: 1990



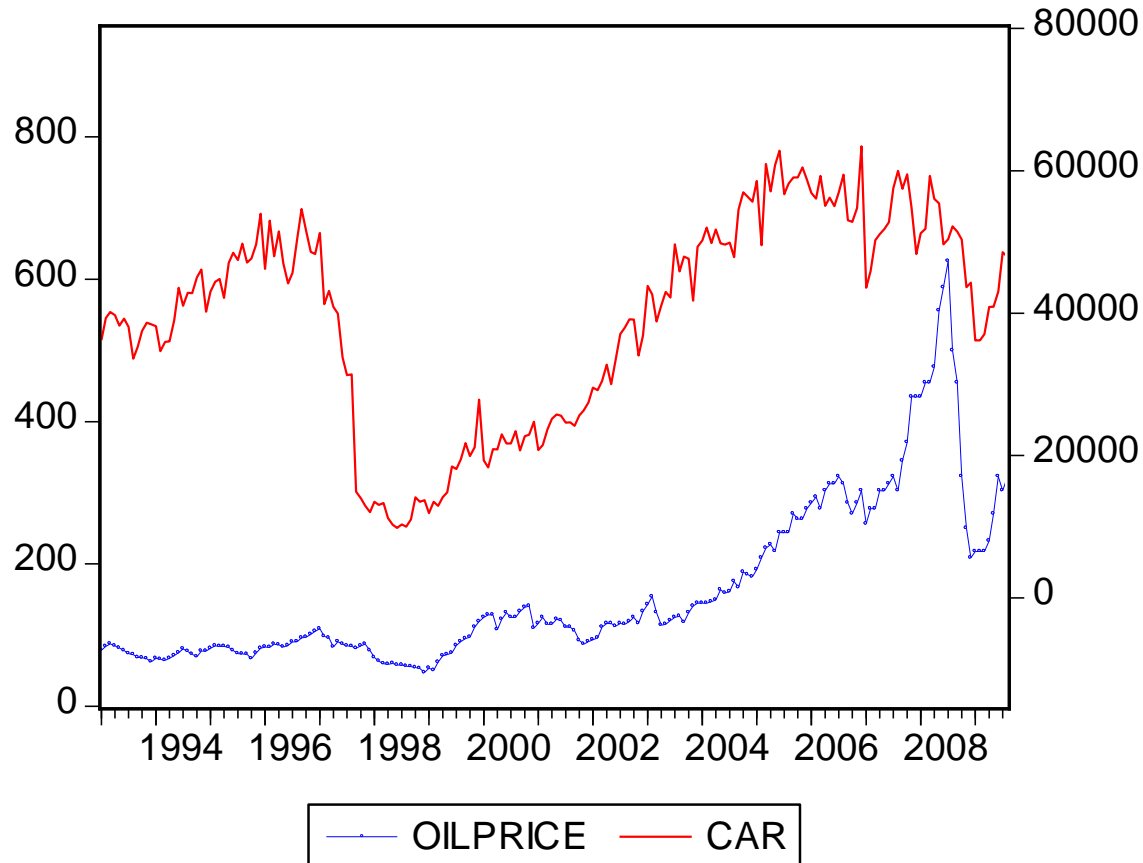
Net FDI by Sector in 2006



Impact of the global recession

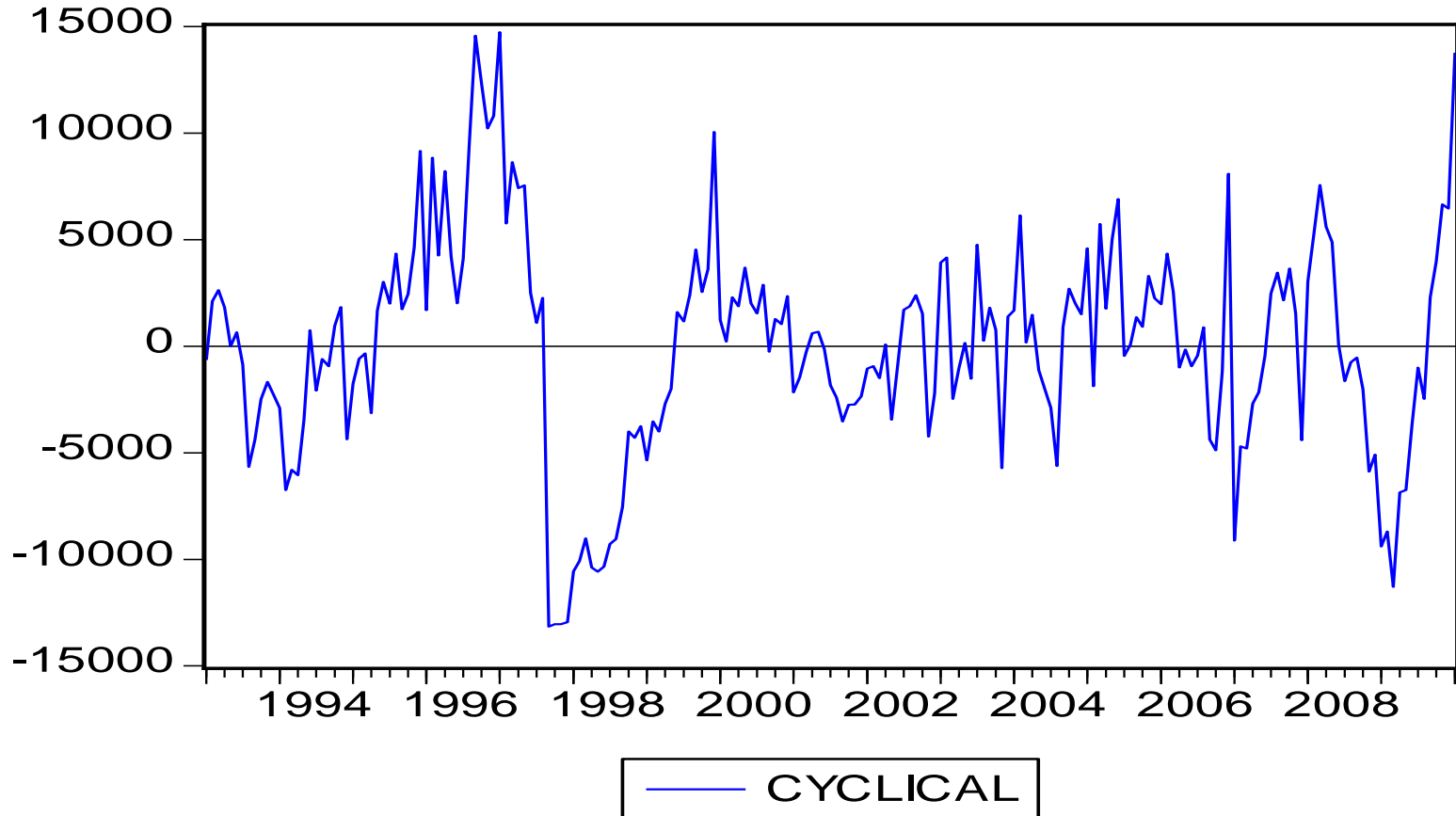
- Vehicle exports to Australia, Thailand's major export market, was the hardest hit, Honda and Toyota saw their exports drop by 20-30%.
- But the impact on exports to other markets such as ASEAN, Europe, the Middle East and Latin America will be smaller.
- Exports were 56.2% of the total produced in 2008.
- 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.

The oil price and demand for automobile

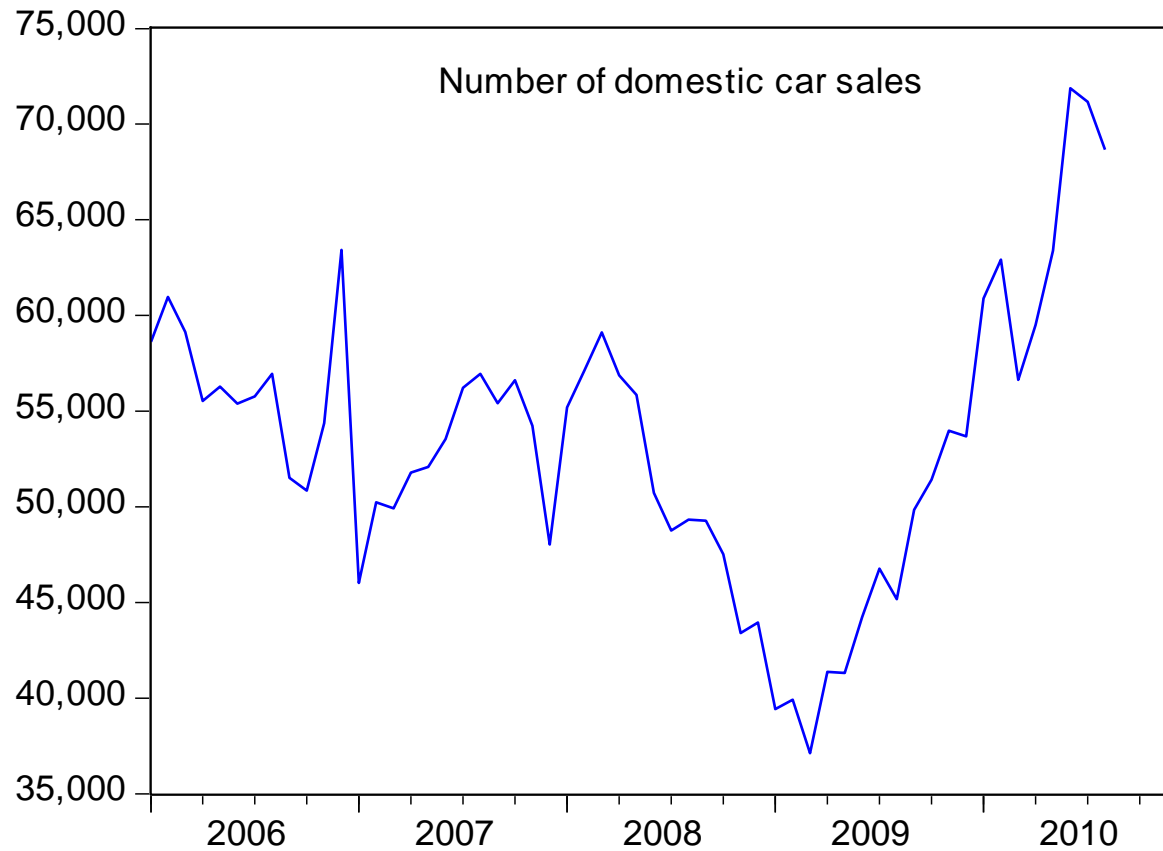


Deviation from long-term trend

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



The sharp rebound



January 2011

- A total of 146,234 vehicles rolled off the production lines in Thailand in January 2011 an increase of 40.81 per cent on the same month last year.
- Vehicle exports for January were up 16.27 per cent year-on-year to 68,000 units, boosted by the economic recovery of Thailand's foreign trade partners and increasing overseas demand for eco-cars.
- The vehicle output target for this year is 1.8 million units.
- Of the total, one million would be for export and the remaining 800,000 for domestic sale,

THAILAND AUTO PRODUCTION

Three million vehicles per year by 2017

Published on October 13, 2010

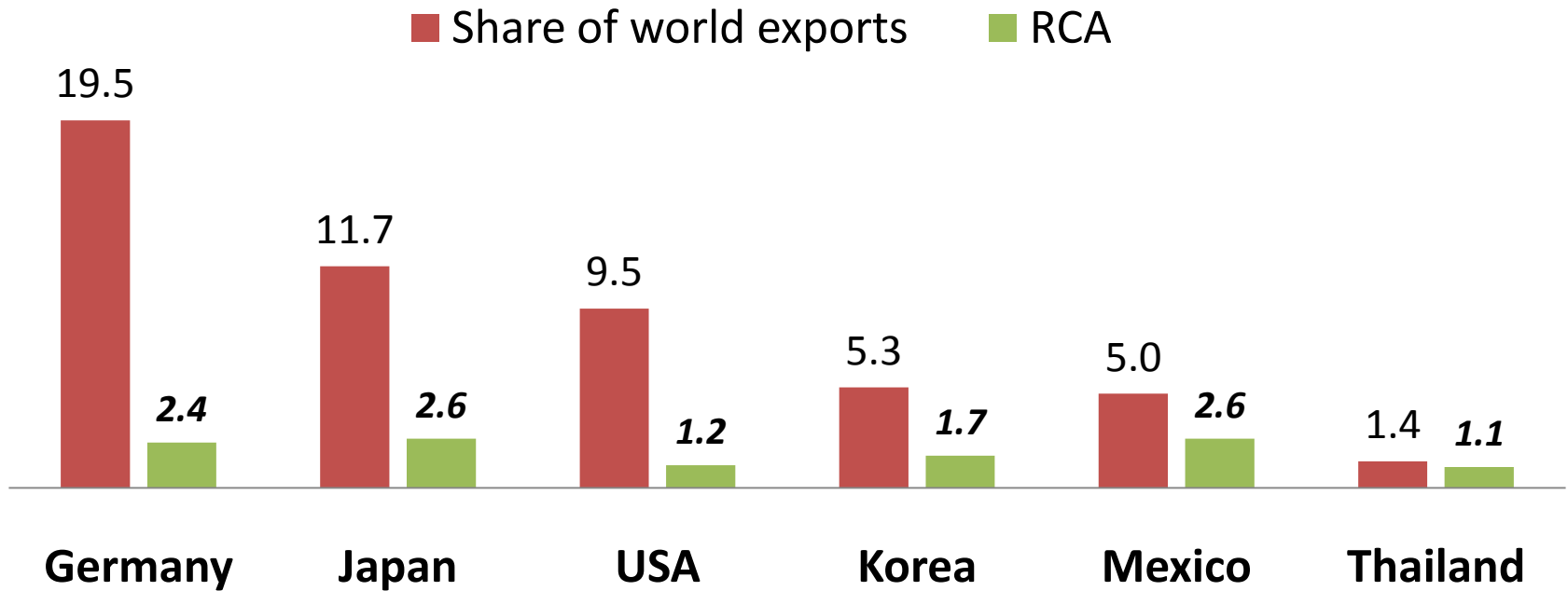
Thailand's annual auto production could reach 2.5 million to 3 million units within the next five to seven years, according to the Thailand Automotive Institute.

- Institute director Wallop Tiasiri said that despite the global economic recession, development of the Thai automobile industry was progressing in line with its second Master Plan (2007-2011).
- "Five auto-makers have applied for the eco-car project, while Ford has announced plans to build a compact-car assembly plant as well as the Ford-Mazda sub-compact plant," he said.
- An estimated 900,000 vehicles will be produced by these new projects.

- Summit Auto Body, a subsidiary of the Summit Group, plans to spend Bt2 billion to build a new factory, develop technology and increase production efficiency over the next two years.
- The company said Thai auto production would exceed 2 million units in 2012, due to increased demand as well as the increasing number of new models, covering every segment of the market.

Exports of Vehicles: 2011

Source: Trade Competitiveness Map

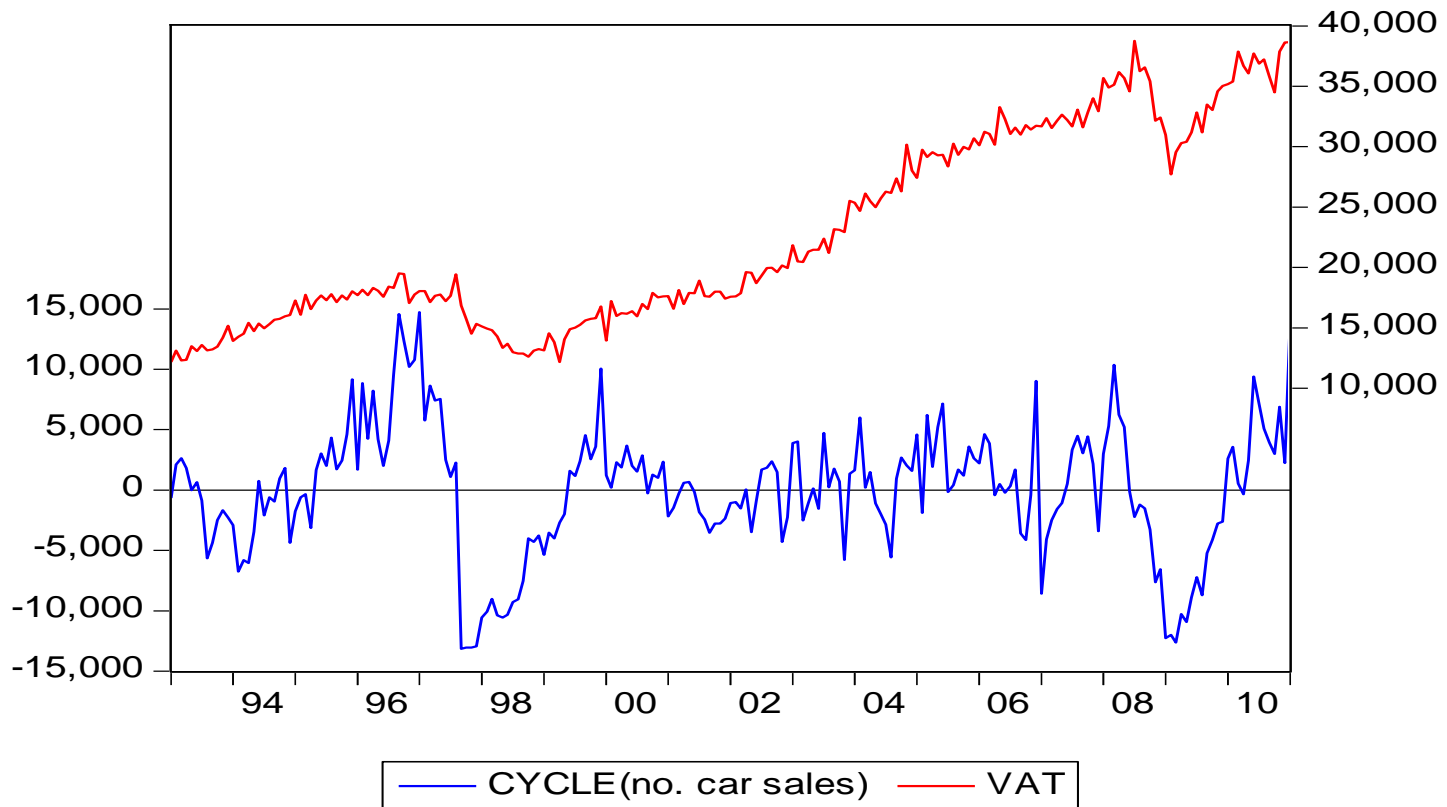


Toyota

- Toyota, Thailand's largest auto-maker, said that as well as the swift recovery of the domestic market, Thai auto producers were also enjoying increased exports thanks to the global economic recovery.
- Toyota Motor Thailand's senior vice president: Toyota had sold 134,959 vehicles on the domestic market in the first nine months of 2010. The company sold 27,000 vehicles in September

- There is now a one- to two-month back order for almost every Toyota model, due to growth in both the domestic and export markets,”
- "The back orders prove that the auto market will grow dramatically, and we are currently trying to reduce our production time, which will take some time to achieve,”

VAT (million baht) and deviation from trend of car sales



Concluding remarks

- Business sentiment and consumer confidence matters.
- 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.
- 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

*Exploitation of economies of scale
and scope*

*Competitive environment induces
efficiency improvement.*