

The automobile industry of Southeast Asia: Malaysia and Thailand

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1. Introduction

- The automobile industry was acknowledged as the **'the industry of industries'** in the twentieth century and is considered **one of the most globalised industries** today (Dicken 2007).
- The industry was dominated by **huge transnational and vertically integrated corporations** until the 1970s, deserving being characterised as **a producer-driven global value chain (PD-GVC)** .
- But since then a wave of restructuring and outsourcing of activities has been ongoing, turning the global industry to be **governed** in a more relational way **by lead assemblers (original equipment manufacturers or OEMs)**.

1. Introduction (cont'd)

- Automotive experts Graeme P. Maxton and John Wormald have recently argued that the global auto industry is **not a value-creating sector**.
- But **a value-destructing sector** beset with:
 - Over-capacity
 - Low profitability
 - Rigid production structures
 - Over-extended product ranges.
- They claim that a **fourth industrial revolution** of **'unbundling'** the resources and capabilities of the industry is urgent in order to **surpass the three former transformations** understood as :
 - Ford's assembly-line and standard mass production
 - Sloan/GM's broadening of the scope of models
 - Toyota's concept of lean manufacturing targeting relentless cost reduction and manufacturing perfection.

1. Introduction (cont'd)

Leaving a door open for the **survival of two or more Chinese automakers and one Indian** (Tata), Maxton and Wormald **do not give national automakers in Southeast Asia a chance:**

The peripheral Asian players seem unlikely to survive a Fourth Revolution. South Korea may not be able to support even one major carmaker. Daewoo, Samsung, Kia and Ssangyong have already been absorbed. Proton is an entirely artificial creation, living behind protectionist walls. Hyundai risks being squeezed between competitive pressures, a mature domestic market and the emerging power of the Chinese .

(Maxton and Wormald 2004, p. 262)

1. Introduction (cont'd)

- This pessimistic outlook for the establishment and success of national automobile projects in Asian developing countries is shared among many researchers subscribing to the global value chain (GVC) theory (Humphrey and Salerno 2000, Humphrey and Memedovic 2003), with the exception of countries with huge potential markets like China and India.
- The reasons are that the automobile industry is **not only a rather globalised industry but also** a **very capital** and **R&D-intensive** industry with **high entry barriers** and demanding **economies of scale, scope** and **speed**.
- **National automobile projects** are thereby deemed **futile endeavours** and a **waste of investment** of enormous proportions, which **could have been used** for **alternative** and **better purposes**.

2. Framing the ASEAN automobile industry theoretically between global/regional value chains

- In the GVC terminology, the automobile industry has been **considered a PD-GVC** in contrast to for example the **global garment value chain** which is considered to be a **buyer-driven global value chain (BD-GVC)** (Gereffi 1995).
- The motor vehicle manufacturers (the OEMs) have governed the value chain by way of **controlling core technologies** and **products** and used **different types of organisations** to govern the **upstream** and **downstream** processes (Wad 2008) :
 - Vertical integration (typically for American corporations in the past)
 - Vertical collaboration (typically for the Japanese keiretsu networks)
 - Horizontal collaboration (typically for continental Europe firms)

2. Framing the ASEAN automobile industry theoretically between global/regional value chains (cont'd)

- Japanese **successfully challenged** the Western dominance during the 1970s and 1980s and **triggered increased competition, trade wars** between Japan and the US and the EU and globalisation and transformation of the automobile industry.
- During this industrial warfare **Western OEMs abandoned Southeast Asia** and **Japanese OEMs came to dominate the regional automobile market.**

2. Framing the ASEAN automobile industry theoretically between global/regional value chains (cont'd)

- From a Japanese historical perspective, articulated by Akamatsu in the 1930s and elaborated by others (e.g. Mathews 2006), **Japan became the lead goose in a flying geese formation** (of auto-manufacturing neighbours).
- From a critical perspective the rise of domestic automobile industries was embedded into a **regionalised keiretsu production structure** turning Japanese automobile firms into (micro) **lead geese flying all over Southeast Asia** and followed by their Japanese suppliers.
- **Local firms chased the flock in order to link up** with the advanced automotive firms (Hatch and Yamamura 1996).
- **Regionalisation was as important to the evolution of Southeast Asian automobile industries** as the globalisation of the automobile sector.
- **The regional value chain** had been **driven** by **Japanese OEM producers** and their core suppliers since the 1970s

3. The post–1997 financial crisis trends of ASEAN-5 auto industries

3.1. Production structure, growth and sale

- Motor vehicle production of passenger cars and commercial vehicles improved among all countries from 2000 to 2007, but the **Thai industry leapfrogged** with nearly a **quadrupling of production** or an expansion of **285%** (Table 1).
- A **regional division of labour** had emerged between the ASEAN-5's auto industries in 2000, in which **Thailand** was the core site of **commercial vehicles**, while **Malaysia** was the core location of **passenger car** manufacturing, followed by Indonesia and Vietnam that also gave priority to passenger car production (Table 2).

3. The post–1997 financial crisis trends of ASEAN-5 auto industries

Table 1. ASEAN-5 motor vehicle production (in units) 2000–2007.

Country	2000	2002	2004	2006	2007	Change 2000–2007	Percentage of change
Malaysia	284,600	395,000	372,916	502,973	413,440	128,840	45
Thailand	325,888	595,649	927,981	1,193,903	1,238,460	912,572	280
Indonesia	292,710	299,257	408,311	296,008	419,040	126,330	43
The Philippines	41,840	53,683	70,728	41,603	42,000	160	0
Vietnam	6862	13,197	19,868	18,211	20,750	13,888	202

Note: All types of motor vehicles (passenger cars, light commercial vehicles, heavy trucks, busses). Changes 2000–2007 own calculation. The figures for Indonesia, the Philippines and Vietnam are estimates in certain years. Sources: OICA correspondents survey, various years. Available from: <http://www.OICA.net> [Accessed 5 June 2006 and 17 March 2008].

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Table 2. ASEAN-5 passenger car production (in units) 2000 and 2007.

Country	2000		2007		Change in % points
	Passenger cars	P.c. of total	Passenger cars	P.c. of total	
Malaysia	258,500	91	328,300	79	27
Thailand	135,888	42	308,500	25	127
Indonesia	257,058	88	304,300	73	18
The Philippines	15,540	37	33,000	79	112
Vietnam	5062	74	20,000	96	295

Note: All 2007 car figures are estimates.

Source: Same as Table 2. Percentage of passenger cars to total motor vehicle production based on Table 2.

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- During the following **seven years Thailand specialised further into commercial vehicles**, while the Philippines switched to passenger car production, and Vietnam deepened its focus on this automobile segment.
- Thailand's speciality became **the 1-ton pickup truck** that came to be **produced by foreign OEMs**, which transformed **Thailand** into **a hub of global pickup production outside the US** (Doner et al. 2006).
- However, due to the tremendous growth Thailand turned out as many passenger cars as Indonesia and Malaysia.
- If this trend continues **Thailand will be the undisputed centre of automobile production in the ASEAN**, and **Malaysia's option** to become the **passenger car hub** of Southeast Asia **may be gone**.

3. The post–1997 financial crisis trends of ASEAN-5 auto industries

- **Production** of motor vehicle was **lower than the domestic sales** of automobiles in Malaysia, Indonesia, the Philippines and Vietnam in 2000 and 2007, indicating a certain **degree of net import** (Table 3).
- In Thailand the **acceleration of export** made Thai automobile makers **less dependent on the local market**, and the hyper growth of **motor vehicle assembling** was **double** the **growth of motor vehicle sale**.
- In the Philippines **sales rose** while **production declined** after 2004, indicating e.g. more liberal international trade regulations of automobiles.
- Moreover, **second-hand car imports overtook** the sale of locally assembled new vehicles in 2000–2002 (Ofreneo 2008, p. 74).
- In total, **1.870 million motor vehicles** were **sold in the ASEAN-6** (including Singapore), and therefore the ASEAN motor vehicle market has scale when it is **fully integrated into a free trade area**.

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Table 3. ASEAN-5 motor vehicle sales (in units) 2000–2007.

Country	2000	2002	2004	2006	2007	Change 2000–2007	% change
Malaysia	343,173	433,840	487,605	490,768	487,176	144,003	42
Thailand	262,109	409,459	626,026	682,500	631,250	369,141	141
Indonesia	309,514	317,763	483,094	317,312	434,499	124,985	40
The Philippines	84,132	85,587	88,075	99,541	117,903	33,771	40
Vietnam	16,549	32,093	40,138	40,823	40,823	24,274	147

Source: www.just-auto.com. Available from (data 2000–2002): http://www.just-auto.com/images/features/feb03/0302asia783_02 [Accessed 13 March 2008]; (data 2004–2007) <http://www.just-auto.com/articleprint.aspx?ID=93863> [Accessed 13 February 2008].

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3.2. International trade

- Specialising in commercial vehicle manufacturing the **Thai automobile industry outperformed** the automobile industries in **the other four ASEAN-5 countries**.
- The Thai auto industry was **the only one of the ASEAN-5** industries that generated a **trade surplus** on both export and import of motor vehicles in 2000, 2004 and 2006, and this **surplus increased by 400%** during the period, surpassing the rise of automobile production (Table 4).
- All other ASEAN-5 countries ran **trade deficits** in motor vehicles.
- The Malaysian deficit was equal to the Thai surplus in 2000, but over the period 2000–2007 the **Malaysian deficit rose** nearly 50%, while the **Thai surplus increased dramatically**.
- The Philippines's deficit followed the reversed trends of automobile production: it decreased in 2000–2004 and increased again in 2004–2006.

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- The Thai surplus **was twice as high as the total deficit** of the **other four ASEAN-5 countries** together in 2007 (Vietnam excluded).
- Malaysia managed to **stop the rising deficit** in net international motor vehicle trading from 2004 to 2006.
- Indonesia started **reducing its deficit** from US\$790 million in 2004 to US\$600 million in 2006.
- Trade of auto **components and parts** is taken to be the **second trade performance indicator** of the auto industries in the ASEAN-5 countries post the crisis.
- While no comparable figures are available on auto component production, international trade figures provide an indication of the international performance of these industries (Table 5).

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Table 4. ASEAN-4 motor vehicles export and import (US\$ mio.) 2000 and 2004.

Country	2000			2004			2006		
	Export	Import	Surplus	Export	Import	Surplus	Export	Import	Surplus
Malaysia	105.8	1255.2	−1149.4	117.9	1683.0	−1570.1	209.4	1720.4	−1511.0
Thailand	1620.8	442.8	1178.0	3652.2	538.0	3114.2	6608.9	519.7	6089.2
Indonesia	22.4	352.6	−330.2	150.0	939.2	−789.2	411.4	1013.7	−602.3
The Philippines	5.4	622.6	−617.2	159.8	439.7	−279.9	91.9	705.6	−613.7
Vietnam	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Note: Calculation of surplus is done by author.

Source: UNCOMTRADE, HS 1992; motor vehicles 8702 and 8703 and 8704.

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Table 5. ASEAN-5 export and import (US\$ mio.) of automobile parts 2000 and 2004.

Country	2000			2004			2006		
	Export	Import	Surplus	Export	Import	Surplus	Export	Import	Surplus
Malaysia	134.8	298.3	–163.5	276.1	617.7	–341.6	424.7	985.7	–561.0
Thailand	503.7	1335.2	–831.5	1412.0	2944.3	–1532.3	2500.2	2558.6	–58.4
Indonesia	221.8	1120.3	–898.5	532.6	986.4	–453.8	908.5	904.2	4.3
The Philippines	568.4	230.8	337.6	1172.3	388.9	783.4	1400.3	353.5	1046.8
Vietnam	n.a.	n.a.	n.a.	54.2	32.2	22.0	n.a.	n.a.	n.a.

Note: Calculation of surplus is done by author.

Source: UNCOMTRADE, HS 1992; parts and accessories of motor vehicle 8708.

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Table 6. Export of motor vehicles and parts between Malaysia and Thailand and relevant ASEAN and Asian countries, 2000 and 2006 (US\$, in million).

To	Export from			
	Malaysia		Thailand	
	2000	2006	2000	2006
Malaysia	x	x	56.9	423.7
Thailand	16.0	97.6	x	x
Indonesia	1.2	23.3	39.0	554.2
Philippines	0.7	52.3	31.4	392.4
Vietnam	0.1	5.3	2.3	42.2
Japan	13.3	25.1	130.2	437.7
China	1.9	21.9	4.9	63.6
India	0.5	5.2	8.9	124.0

Note: Figures comprise motor vehicles and parts (HS92, 8702, 8703, 8704 and 8708).

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3.3. The political economy of automobile industries in the ASEAN-5

- The ASEAN-5 automobile industries **generate employment, turnover, investments** and **public revenues**, which have **socio-economic impacts** on their societies, but data on these matters are difficult to obtain for the ASEAN-5 countries.
- The Organisation Internationale des Constructeurs d'Automobiles (OICA) provides certain figures, which probably concern the year 2004 (or earlier years), probably provided by the motor vehicle manufacturers (and not the automobile parts firms) and covering the sector of motor vehicle manufacturing (Table 7).

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- The **Thai auto industry** is **outstanding** in terms of **employment generation** and **turnover**.
- Investment figures of Thailand and Indonesia are not directly comparable, and in terms of public revenue the OICA only discloses the data on Thailand.
- An estimate of the total ASEAN-4 employment in the early twenty-first century is between **200,000 and 300,000 persons** in **auto assembling** and an **additional 100,000 to 150,000** in **auto components and parts** (estimating components and parts manufacturing to be half of the employment in auto assembling), **in total 300,000 to 450,000 persons**.
- The International Metalworkers' Federation (IMF) informed in 2004 that the Japanese auto industry **employed 185,700** in auto **assembling** and **460,500** in **parts and accessories** in 2002.

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- Another important question is how autoworkers performed in terms of **income development**, e.g. **net hourly earnings** (in purchasing power).
- The IMF's purchasing power data in the automotive industry indicate that:
 - the **German** and **American** autoworkers earned **the most**;
 - the **Japanese**, **French** and **Korean** are in the **middle**;
 - Workers in **Thailand**, **Malaysia**, **Indonesia** and the **Philippines** are in the **lower group** (IMF 2007).

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Table 7. Key figures of the automotive industry in ASEAN-4, in the early twenty-first century (2004 or latest available figures).

	Employment (persons)	Turnover (mio. €)	Investments (mio. €)	Public revenue (mio. €)
Malaysia	47,000	6084	1263	n.a.
Thailand	182,300*	11,658 [#]	443	2871
Indonesia	64,000	3858	1071	n.a.
The Philippines	n.a	n.a	n.a	n.a
Vietnam	n.a	n.a	n.a	n.a

Note: [#]Gross production value instead of turnover. *IMF (2007) Auto Report 2006/2007, Table 3.2 provides figures about Thai employment in motor vehicle assembly (including engines and bodies), which say 101,700 persons in 2000. Doner *et al.* (2006; Country Case Studies, Thailand) state that the automobile industry employed in total around 8% of Thailand's workforce in 2006 – that is, 2.9 million of 36.3 million (ILO LABORSTA) and a much higher figure, but probably they meant the workforce in manufacturing.

Source: OICA (2006).

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Table 8. Purchasing power in motor vehicle industry, selected countries, 1997, 1999, 2001 and 2005.

Motor vehicle industry (LV and MHV)		Net hourly earnings local currency	Net hourly earnings (US\$ PP)	Hours and minutes	Hours and minutes, mid-sized auto
Country	Year				
Malaysia	1997	5.41 R	1.81	20 min	7460 h 57 min
	1999	n.a.	n.a.	n.a.	n.a.
	2001	3.56 R	0.94	41½ min	12,359 h 33 min
	2005	n.a.	n.a.	n.a.	n.a.
Thailand	1997	45.91 B	1.51	29 min	17,425 h 4½ min
	1999	n.a.	n.a.	n.a.	n.a.
	2001	n.a.	n.a.	n.a.	n.a.
	2005	91.20	2.22	20 min	6907 h 54 min
Philippines	1997	24.68 P	0.86	45 min	n.a.
	1999	48.32 P	1.24	33.5 min	10,347 h 41 min
	2001	42.52 P	0.86	28 min	14,110 h 28½ min
	2003!	42.24 P	0.76	31½ min	13,139 h 12½ min
Indonesia	1997	3500.00 R	0.76	25½ min	20,000 h 00 min
	1999	n.a.	n.a.	n.a.	n.a.
	2001	5275.34 R	0.51	42 min	25,590 h 46 min
	2005	10,994.62 R	1.12	20 min	24,557 h 24 min

Sources: IMF (1998, 2000, 2002, 2004, 2006).

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- The **changing wages relate to the diverging trends** of the respective auto industries, indicating that the **trajectories of the industries frame the changes of wages** (Table 8).
- In fact, **productivity** trends **correlate heavily with wage trends** in most industries.
- Summing up, the **Thai auto industry** is **specialising as a commercial motor vehicle production** site with expanding production and international trade in the early twenty-first century, **increasing trade surplus** in **motor vehicle** manufacturing, while **auto components and parts** trade are generating a **rising trade deficit**.
- Yet in combination the Thai auto industry makes a **trade surplus and contributes significantly** to **Thai employment, business turnover, investment and public revenue**.
- The **Malaysian auto industry** faced a **rising trade deficit** in both **motor vehicles** and auto **components and parts**.

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- **Malaysian** and **Thai automobile production** stood at the **same level** of production **at the outbreak** of the East **Asian financial crisis**.
- The two industries **performed very differently** in the wake of the crisis in the sense that **Thai** automobile industry **switched successfully to export-led growth**.
- The **Malaysian** national automobile industry **stalled and later declined** at the domestic market which again grew much slower.
- **Japanese-controlled** automobile makers captured **higher market shares** in Malaysia.
- This **post-crisis divergence** will sooner or **later impact employment conditions of autoworkers**.
- **Thai autoworkers** at least **regained and surpassed** the wage level of the **pre-crisis era** in 2005 (comparative data missing for Malaysia; Table 8).

4. Drivers of key ASEAN auto industries in the twenty-first century

4.1. The auto industrial regimes of the ASEAN-4

- Both Malaysia and Thailand pursued import-substitution industrialisation policies for the automobile industry from the late 1960s, but the **two countries diverged** in the 1980s when **Malaysia** started its **national automobile programme** while **Thailand** gave priority to **foreign MNCs** in the early 1990s.
- The **political dimension** of the ASEAN auto market has been **immanent since the inception of the ASEAN complementation** agreement in **1969**, the Brand of Brand Complementation (BCC) of 1988 and the cross-industry ASEAN Industrial Cooperation (AICO) of 1996 (Shimokawa n.d.).
- Between 1998 and 2001 ASEAN even pursued what has been **called ‘developmental regionalism’** (Nesadurai 2004) designed to **positively discriminate ASEAN capital against outside capital**.
- With the decline of FDI inflows to ASEAN and the concomitant acceleration of **FDI inflow to China** the ASEAN governments **abandoned this state-based capital regulation**.

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- **Malaysia's** dedication to **the National Auto Programme**, aiming for a full-fledged auto industry with production of a full range of passenger cars, vans, truck and buses together with motorcycles and auto components and parts, **succeeded at a protected domestic market** to the point at which national automakers held **90% of the market share**.
- However, the national champions **failed on export markets**, especially the UK market, and this **lack of international competitiveness** turned out to be a disaster when the **East Asian crisis undercut local demand** and forced **several ASEAN countries** to **increase export** by way of pursuing more **liberal policies** and basing their automobile
- The paradox is that Malaysian governments did the right things some of the time, but **failed** in respect to **two crucial matters**: (1) **mobilising** existing domestic automotive **business capabilities** and (2) tying state support to **performance criteria**.

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- In the early 1980s the government decided to go for **scale economies** in automobile production and lined up with the **weakest Japanese automaker, Mitsubishi Motors**, in a **majority controlled joint venture, Proton** (Jomo 1994, Machado 1994).
- The government **manipulated protections** and **subsidies** in such a way that Proton **easily gained** the **dominant market share** by the end of the 1980s.
- When an indigenous automobile entrepreneur emerged Proton was **restructured into a private company** with political-institutional backing.
- When Mitsubishi Motor Corporation (MMC) **resisted functional upgrading** and exporting based on Malaysian designs and brands Proton **obtained design capabilities** through the acquisition of the **UK based company Lotus**, which specialised in engineering sports cars and fancy designs.
- At the turn of the century Proton **launched its own designed model**, and a few years later it produced a model with **its own engine technology**.
- In sum, the Proton management and political supporters did something right, although the investment project **might be questioned** and was **criticized** from its very inception for neglecting alternative and better investment projects (Chee 1994).

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- The government relied on a new layer of industrialists and workers from the **Malay community**, and it **did not mobilise existing industrial capabilities (Chinese entrepreneurs)** for the national programme.
- Korea relied on its chaebol conglomerates which were owned or run by Korean entrepreneurs and managers.
- Korea had a lot of experienced businessmen and industrialists, while **Malaysia had few** when restricting **the pool to the Bumiputera community**.
- Korea supported technological imitation, learning and innovation on a massive scale, while **Malaysia did not invigorate a comprehensive automobile innovation system** (Kim 1997, Rasiah 1999).
- The Malaysian government **did not establish performance rating** and tied it to indicators of **international competitiveness** as the Koreans did.
- All these flaws can be attributed to the **overall political economy** of Malaysia and **its socio-ethnic-oriented New Economic Policy (NEP)** (see Henderson and Phillips 2007 regarding the electronics industry).

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- This is most obvious in Malaysia, where the NEP **aimed for creating a new Bumiputera business community** while **eradicating poverty**, and the **national automobile policy was used as one mechanism** to translate this development policy into practiced.
- In the name of NEP a new set of national companies and businessmen were constituted together with the **mobilization of a new Bumiputera labour force**, **marginalising** the existing automobile skills and capabilities among **Chinese businessmen and workers**.
- Yet **without building a new strong and supporting knowledge and innovation system** in general (Felker 1999, Rasiah 1999) or specifically for the national and non-national automobile industry besides **Bumiputera vendor and foreign–local linkage programmes** (Sadoi 2003, Rosli and Kari 2008), the national automakers were taken to be the drivers of the development of a national automobile industry.
- In the medium term the automobile industry was **concentrated and centralised**, creating at least one volume producers but **without international competitiveness** to make sustainable inroad into foreign markets and **without time to learn from past failures**, as the **Japanese** and **Korean automakers did** in the **1960s** and the **1980s** respectively.

4. Drivers of key ASEAN auto industries in the twenty-first century

- Unlike Malaysia Thailand did not follow state-led automobile industrialisation beyond trade protectionism (Abdulsomad 2003).
- **Thailand liberalised its automobile industry** from the early 1990s while adding programmes in support of the development of a Thai owned supplier base, e.g. Board of Investment Unit for Industrial Linkage Development (BUILD; Busser 2005).
- But until 1997 such an overall liberal and **market-driven policy did not generate comparative better results** than Malaysia's 'automobile nationalism', either in terms of industrial growth or in terms of export.
- The **only significant outcome** was the **specialisation into pickups in Thailand** due to **domestic demand** shaped partly by **tax privileges** for this segment.
- More than 60% of all vehicles made in Thailand in the 1990s were pickup vans, and this segment also came to dominate export when it took off after the East Asian financial crisis (Doner *et al.*, 2004, Takayasu and Mori 2004).
- Hence, it took a financial crisis to demonstrate the different potentials in the two industrial strategies.

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- When the Thaksin government took power in the early twenty-first century a **new industrial plan** for the automobile industry was announced in 2001.
- The goal was to **turn Thailand into the 'Detroit of the East'** (Busser 2005, p. 33), and the plan included several new initiatives.
- The linking of industry support to **export performance**, the establishment of the **Thai Automotive Institute** and an increased emphasis on public–private collaboration and consultation to the point of a corporatist model, 'Thailand Inc' (Doner et al. 2006).
- But **no massive investments were undertaken**.
- The Thai automobile industry **continued without much state support and strategic regulation**, and it was **predominantly driven by the MNC lead firms** (Abdulsomad 1999).