

# **Industrial Policy and the Development of the Automotive Industry in Thailand**

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## ABSTRACT

*It has been argued that restrictions on industrial policy implemented under World Trade Organization rules in the 2000s have greatly reduced the 'policy space' in which developing countries can promote industrialisation. This paper examines the case of Thailand's policies in developing one of the most successful automotive industries in the Southeast Asian region. We show that Thailand's use of local content requirements, later abolished under WTO rules, helped promote local suppliers and did not deter foreign investors. Substantial tariff protection of vehicles and components production did not deter exports, and has continued to the present, even under liberalisation policies. Supplementing tariff protection by various fiscal means to promote product champions in the automotive industry, Thailand has succeeded in retaining substantial policy freedom.*

## **1. Introduction**

How can developing countries conduct industrial policy in circumstances where current international trade rules – it has been argued - restrict their policy space? How far can they build further on earlier, more interventionist policies? This paper addresses these questions by examining the experience of the Thai motor industry since the 1960s. We focus on the role of local content (LC) requirements, now outlawed under World Trade Organization (WTO) rules, in relation to other policy measures.

Thailand has joined the major vehicle producers in the world in recent years. In 2010, Thailand accounted for over 1.6 million units of vehicle production, and was ranked the 12<sup>th</sup> largest producer in the world. In the past, the Thai government used industrial policy, based on LC requirements and protection for the local market for upgrading its

industry, while attracting inward foreign direct investment into vehicle and auto parts production. Since the abolition of LC requirements in Thailand under WTO rules, the government has been successfully adjusting to the new environment by shifting its policy orientation towards using effective fiscal policy with selective state intervention.

Unlike its neighbouring country of Malaysia, which created national champion *firms* in the automotive industry, Thailand does not have its national brand producer. Most recently, however, Thai auto policy has focused on selecting a national *product champion* (picking a winning model of vehicle), and by setting lower excise tax rates for it, the government helps to create a particular market demand by consumers. At the same time, the government provides tax exemptions, such as corporate tax, for attracting investors into national *product champion* production.

This article investigates how the Thai automotive industry has developed, with particular attention to industrial policy. We use a wide range of secondary and survey resources, including the Japanese literature, together with a programme of qualitative interviews undertaken in 2010 and 2011. Our next section sets out to examine the industrial policy debate under WTO trade rules and also discusses industrial upgrading. Section 3 overviews the Thai automotive industry. Section 4 examines the development of the Thai automotive industry over the period 1960-2010 by classifying into five phases: the import substitution period (1960-1970), the introduction of localisation policy (1971-1977), the strengthening localisation capacity (1978-1990), the liberalisation period (1991-1999) and creating international competitiveness (2000-2010). Section 5 concludes.

## **2. Industrial Policy and Industrial Upgrading in the Automotive Industry**

### *Industrial Policy under WTO Trade Rules*

In recent decades, the ‘development policy space’ (or policy options) for developing countries has diminished with the rise and continuing influence of the Washington Consensus and its accompanying neoliberal policy prescriptions (Wade 2003a). This has affected East Asian developmental states, whose industrial policies often have been taken as models for other developing countries to follow. In the past, East Asian countries were characterised by the interventionist role of a *plan-rational* strong state bureaucracy, conducting state-led industrialisation by introducing a series of industrial policies for economic development (Amsden 1989; Wade 2003b; Woo-Cumings 1999). Northeast Asian developmental states such as Japan, Korea and Taiwan successfully conducted upgrading of industry by taking a ‘picking winners’ strategy in order to facilitate national champion firms transforming into world-class exporters.

Although Southeast Asian countries have weaker state capacity as well as policy administrative capacity than Northeast Asian developmental states (Booth 1999; Park 2000), some scholars have claimed that Southeast Asian countries have common characteristics with Northeast Asia. For instance in the case of Thailand, Rock (2002) argued that in the period of the early import substitution industrial strategy in the 1960s through to the export-led industrialisation in the 1980s, industrial policies with selective government intervention in collaboration with foreign direct investment (FDI) were effective and successful.

The rise of neoliberal policies under globalisation in recent decades, particularly three international agreements under the World Trade Organization (WTO) following the Uruguay Round trade negotiations (1986-1994), limits the use of the sorts of industrial policy that Northeast Asian developmental states adopted in the past (Rasiah 2005).

Outlawed under current WTO rules are:

- Infringements of the Trade-Related Intellectual Property Rights (TRIPs) measure, which protects copyright and patents;
- Trade-Related Investment Measures (TRIMs), which ban performance requirements, such as those related to local content, trade balance obligations, and export requirements; and
- Infringements of the General Agreement on Trade in Services (GATS), which restricts government intervention in the market and the regulation on the behaviour of multinational corporations operating in their country.

Some scholars including Lee and Han (2006) and Moon and Rhyu (2000) have claimed that neoliberal reform resulted in the end of East Asian-style developmental states. In opposition to this view, others such as Shin (2005) and Pereira (2008), have argued that the role of the state, particularly man-made location-specific factors<sup>1</sup> such as policy, institutions and infrastructure have helped in the creation of business environments that are conducive to development as the pace of globalisation accelerates. However, even under the WTO rules, it is still possible for developing nations to promote particular industries, thus creating ‘winners’, but employing a narrower range of policy options.<sup>2</sup>

In the case of Thai automotive development, it has been the discontinuation of the right to use LC requirements under TRIMs that has been the main factor of interest. Following the start of operations of the WTO in January 1995, TRIMs-style requirements were to be abolished within a five year period for developing country WTO-members.<sup>3</sup> Thailand complied with this provision, ending LC requirements in 2000. Instead, the Thai government has started to introduce industrial policies by using discretionary power in selecting particular models and functions to be developed in the automotive industry.

### *Industrial Upgrading*

Industrial upgrading is a key focus of our study and is most often associated with global value chain (GVC) analysis. As is now well known, the basic concept of the GVC emphasises the sequential and interconnected structures of economic activities, with each link or element in the chain adding value to the process. GVCs normally are classified as either *producer-driven* or *buyer-driven* chains. The former are characterised by capital- and technology-intensive industries including automobiles, computers, aircraft, and electrical machinery. The latter, which are not our focus here, are characterised by labour-intensive consumer goods industries like garments and footwear, in which large global buyers play a central role in establishing decentralised and dispersed production linkages across various countries (Gereffi 1994).

In the automotive industry – an archetypal producer-driven GVC - vehicle assemblers have been governing the highly capital and technology intensive value chains by controlling core technologies, production processes, and research and development

(R&D), human resources, finance, and marketing from upstream to downstream operations through their supplier networks (Barnes and Morris 2008; Wad 2008 and 2009). Typically, automobile assemblers have created three-tier suppliers networks (e.g. see figure 1).<sup>4</sup>

Industrial upgrading in GVC analysis emphasises how producing firms can improve their position within the chain by obtaining greater value-added functions through the production process, leading to industrial development (Humphrey and Schmitz 2002). The GVC literature usefully categorises upgrading within a GVC into three broad areas:

- *Product upgrading* enables producers to move up value chains by producing from low-end products to sophisticated products;
- *Process upgrading* enables producers to learn how to improve their production processes such as quality control and shortening lead time (or delivery) by reorganising the production system or introducing new technology; and
- *Functional upgrading* enables producers to acquire new functions in value chains by specialising activity, which increase the overall skill content of activity.

In the case of a producer-driven GVC, lead firms such as major automobile producing multinationals like Toyota, and also major international component suppliers such as Denso, already have such capabilities. The upgrading questions then relate more to what activities are (re-)located in Thailand, and how far domestic component suppliers can upgrade.

This study examines five stages of industrial upgrading in the automotive industry in Thailand in the period of 1960-2010 (see table 1). Although the GVC approach views economic development from the perspective of industrial upgrading in relation to the global market within the global chain, it seems, however, to pay little attention to industrial policy. This is our focus here, and in that sense we complement the GVC approach.

< *Insert Table 1* >

### **3. Overview of the Automotive Industry in Thailand**

#### *Thailand in the Global Automotive Industry*

In the last decade, the geographical location of the vehicle production has been shifting from developed to developing countries, both in a search for lower production costs and in response to rising (particularly Asian) demand relative to the saturated car markets of Europe and North America (Athukorala and Kohpaiboon, c2010, pp.11-12). Asian industrialising countries have increased their global share. China rapidly increased its vehicle production from 2 million units (3.5 percent of world output), ranked 8<sup>th</sup> in 2000, to 18.2 million units (23.5 percent) in 2010, becoming the largest automobile producer in the world. Thailand, taking advantage of these trends, also improved its position from 19<sup>th</sup> in 2000 to 12<sup>th</sup> in 2010. During this period, production volume in Thailand rose approximately fourfold, overtaking several developed countries such as the UK and Italy. It accounted for 1.6 million units, 2.1 percent of global vehicle production in 2010 (see Table 2). During this period of expansion, Thailand was helped in its ability to attract inward direct investment by having the largest domestic market for vehicles in

Southeast Asia, the industry being subject to large economies of scale both in vehicle and (often even more so) in some auto parts production (Yoshimatsu 2002a, pp.130-132).

< *Insert Table 2* >

#### *Characteristics of the Thai Automotive Industry*

According to Fourin (2011), the Thai automotive industry accounted for 1,645,304 units of production, 800,357 units of domestic sales, and 895,855 units of export in 2010. These can be compared to a probable minimum efficient scale for vehicle production of about 200,000 units per year (Yoshimatsu 2002a, p.132), although production is split between sixteen automobile and seven motorcycle assemblers (see figure 1). Unlike neighbouring Malaysia, Thailand has not tried to create its own automotive producers, depending rather on automobile multinational assemblers in collaboration with local capital as joint ventures (JVs).

< *Insert Figure 1* >

With regards to Tier 1 suppliers (690 companies), 47 percent are foreign majority JV companies, 30 percent are Thai majority JV companies and 23 percent are pure Thai companies. In addition, there are also approximately 1,700 Tier 2 and 3 suppliers, which are locally owned small and medium enterprises (SMEs). The Thai Automotive Industry Association (TAIA) estimated that the automotive industry generates approximately 700,000 jobs in Thailand - automobile assemblers employ approximately 50,000

workers, auto part producers 350,000 workers, car distribution networks (e.g. dealers) 200,000 workers, and raw material suppliers 100,000 employees.

Japanese automobile producers have been playing an important role, accounting for 80-90 percent in production, domestic sales and export activities in Thailand (see figures 2-4). Toyota alone accounted for 38 percent of production, 41 percent of domestic sales and 37 percent of exports. Those Japanese automobile producers generally entered the Thai market in the early stages of the import substitution era (1960s) and successfully adjusted their business in response to the government policies in Thailand. Japanese auto manufacturers too have been very active in schemes across the Association of Southeast Asian Nations (ASEAN), to develop efficient regional production networks based on regional trade preferences: first the Brand to Brand Complementation (BBC) scheme up to 1995, and then the ASEAN Industrial Cooperation (AICO) scheme implemented in 1998 prior to the more general removal of trade barriers under the ASEAN Free Trade Area (AFTA) (Yoshimatsu 2002a).

*<Insert Figure 2, 3 and 4>*

Commercial vehicles (CVs), particularly pick-up trucks, are the main products in Thailand. Of total domestic vehicle sales in 2010, CVs accounted for 57 percent and passenger vehicles (PVs) 43 percent. In Thailand, market demand for CVs has been much higher since the 1960s (see figure 11-13), and Thailand has constituted the largest one-ton pick-up truck market in the world. This is partly because CVs are highly suitable for conditions in Thailand, particularly in rural areas. Also, however, business

or excise taxes on CVs have been set much at lower rates than on PVs since the 1960s (see figure 10).

With regards to exports, CVs accounted for 67 percent (see figure 5). However, due to Thailand's new automobile development scheme, the 'Eco Car' project, the export of Eco Cars emerged for the first time in 2010, accounting for 5 percent. This trend is expected to increase in the near future (see section 4). With regards to vehicle and automobile parts combined, Thai exports were approximately US\$ 8.4 billion in 2010.

*<Insert Figure 5>*

As Figure 6 shows, Australia is the largest export destination, followed by ASEAN countries such as Indonesia and Malaysia. Exports to Australia are a direct consequence of the Thailand - Australian Free Trade Agreement of 2005. Exports to Australia have 4.3 fold from 2004 to 2010. Exports to ASEAN have been facilitated by tariff reductions in ASEAN countries under AFTA, which came into full effect in 2003, reducing tariffs to between 0 and 5 per cent, although Malaysia postponed many of its automotive tariff reductions until 2008 (Athukorala and Kohpaiboon c2010, pp. 20, 26).<sup>5</sup> For automobile parts export (HS 8704 part/access 8701-8705) alone, Japan is the largest export destination, accounting for US\$ 587.7 million, followed by Indonesia (US\$ 534.9 million) and Malaysia (529.2 million) in 2010 (World Atlas Database).

*<Insert Figure 6>*

## **4. The Development of the Automotive Industry in Thailand**

### *Initial Overview of Policies*

Figures 7 to 10 offer summaries of the main policy measures used by Thailand to develop its motor industry. During the early period (1960-70), when automotive development was part of a more general import substituting industrialisation (ISI) policy, import tariffs on CBU vehicles rose to over 50 per cent for trucks, and higher for passenger vehicles (see figure 7). Import tariffs on CKD kits rose substantially too, though not as high as on vehicles (see figure 8), thus generating effective protection on vehicle production (that is, protection on value-added) over and above the nominal protection indicated by the CBUs' tariff rate.<sup>6</sup> LC requirements were implemented from 1975 (though mooted earlier) and progressively raised, particularly on pick-up trucks, up to the early 1990s, as part of an industry-specific policy to localise production (see figure 9). A ban on passenger car imports was imposed from 1978 to 1991. Even when tariffs were cut sharply on both CBU vehicles and CKD kits under policies of trade liberalisation in the 1990s, LC requirements were maintained (though subject to some local criticism). With the end of LC requirements in 2000, tariffs were retained on both cars and pick-up trucks, with lower rates on CKD kits, though much lower than the very high levels of the 1980s. LC requirements having to a considerable extent succeeded in raising local content, policy since 2000 has shifted to strongly supplementing trade policy with tax policy (see figure 10) with a view to promoting particular types of vehicle as national product champions. We now examine these policy phases in more detail.

*<Insert Figure 7, 8, 9, 10>*

### ***Import Substitution (1960-1970)***

The automotive industry in Thailand up to 1960 was based on the repair business, with CBU vehicles all being imported. The country's first industrial policy, covering the automotive industry but not exclusive to it, was introduced by the Board of Investment (BOI) in the form of the 'Industrial Investment Promotion Act' in 1960, later revised in 1962. This plan provided incentives for investors such as temporary corporate tax exemptions; tariff reductions and exemptions on imports of inputs and machinery; reduction in export tax; and deregulation of land ownership and of invitation of technical experts (Adachi 1987). In response to this ISI policy, the first Thai automobile company, Thai Motor Industry (a JV between Ford, UK and Anglo Thai Motor) was established in 1961 in order to conduct local assembly operations for the importation of CKD kits (TAI 2008). In order to stimulate production of the domestic market at that time, tariff rates on CKDs were set at 30 percent for PVs, 20 percent for CVs, while CBUs duties were 60 and 40 percent, respectively in 1962 (see figures 7 and 8).<sup>7</sup> By 1969, six major foreign automobile companies had established JVs with Thai capital. During this period, the number of vehicles produced in Thailand rose from a mere 525 vehicles in 1961 to over 10,000 units for the first time in 1965. However, the sales of domestically manufactured vehicles accounted for only 18.5% of the total vehicle sales in 1969 (see figure 11).

*<Insert Figure 11>*

### *The introduction of localisation policy (1971-1977)*

Although the Ministry of Industry (MOI) established the Automobile Development Committee in 1969 and tried to facilitate localisation of parts production by providing special tax incentives for particular parts production such as tires, batteries, radiators and leaf springs (TAI 2008), the Federation of Thai Industries (FTI) criticized the tax policies and incentives, and the failure to develop a long-term industrial development strategy. It particularly emphasised heavy dependence on assembly operations for imported CKD kits that created serious balance of trade and payment deficits by the late 1960s (Doner 1991).

In response to these problems, the government introduced Thailand's first specific industrial policy for the automotive industry in 1971, consisting of the following three measures:

- to set limits on the number of models and series in order to achieve economies of scale;
- to impose an LC requirement of 25 percent,<sup>8</sup> which would become effective in 1973; and
- to require as conditions for new market entry over 0.2 million baht for investment (except for land) and production capacity of 30 units per day (Adachi 1987, Kaosa-ard 1993).

However, due to political change and pressure from new automobile assembly companies, the plan was revised so as not to limit the number of models, series, production capacity and new entry (Higashi 2000). In terms of the likely economic

efficiency of new import-substituting production in an industry characterised by large economies of scale, these revisions hardly can be seen as desirable changes. LC requirements came to be implemented only from 1975 (see figure 9).

As a result of the policy changes in 1972, an additional eight automobile assemblers entered the Thai market over the period of 1972-1977, including Bangchan General Assembly (General Motors, GM) in 1972 and Ford Motor Thailand in 1974. Furthermore, multinational components producers, particularly from Japan (such as Denso), established JVs in Thailand in order to supply locally produced components to assemblers to correspond to the LC requirements (Terdudomthan 2004).

Although the LC level increased to close to 25 percent, automobile prices remained high and quality in general was low in the industry. Furthermore, political instability in the cabinet prevented the government from implementing an effective automobile development policy (Doner 1991). However, during the period 1971 to 1977, domestic vehicle production rose more than four-fold, and accounted for 65 percent of total vehicle sales in 1977 (see figure 11), but trade deficits in the automotive industry increasingly worsened. (Kaosa-ard 1993, p.14).

### ***Strengthening Localisation Capacity (1978-1990)***

In 1978, the Thai government introduced several industrial policies in response to issues of trade deficits and to achieve further localisation. Firstly, the Ministry of Commerce imposed an import ban on CBU PVs in January 1978, and at the same time, the

Ministry of Finance increased the tariff rates on CBUs and CKD kits (Abbot 2003, Higashi 2000).

More importantly, a more explicit localisation policy for the automotive industry was introduced in 1978 after extensive negotiations among government officers, FTI, assemblers and Thai parts firms. Local parts manufacturers became a powerful lobby and established the Thai Automotive Parts Manufacturer's Association (TAPMA) in 1972 (Doner 1991, Higashi 2000).<sup>9</sup> As a result of strong influence from TAPMA, MOI implemented the following two localisation measurements in 1978:

- an additional LC requirement for passenger cars was to revised from 25 percent to 35 percent in the first 2 years and then to rise by 5 percent every year until 1983, eventually reaching 50 percent (see figure 9), and for CVs with windshields from 20 percent to 45 percent (Higashi 2000, Kaosa-ard 1993); and
- to force assemblers to localise specific parts production by introducing a 'mandatory deletion' scheme, targeting specific parts such as brake drums and exhaust systems, which were deemed able to be produced locally (Doner 1991).

This protection for local assembly firms stimulated local assemblers to increase investment in components production (Busser 2008). The policy also resulted in a split in the automobile assemblers in the market. Large automobile assemblers such as Toyota and Nissan were able to increase their local contents ratio. By contrast, smaller assemblers such as Hillman, Simca, and Dodge failed to meet the requirement and were eventually eliminated from the market in the late 1970s (Doner 1991), thus helping to reduce the multiplicity of models and sub-optimal production runs often associated in

the automotive industry with import substitution in protected markets. In addition, however, two American giant automobile producers - Ford and GM - also withdrew from the Thai market due to sales slumps in 1976 and 1977, respectively (Adachi 1987).

In 1984, the LC requirement reached 50 percent for PVs and 45 percent for CVs; which were eventually raised to 54 percent for PVs and 51 percent for CVs in 1987. Furthermore, MOI began to regulate the series and models of domestically assembled PVs by limiting to 42 series and two models for each series in 1984 (Higashi 1995, 2000). In 1986, the Thai government specified locally manufactured components for PVs and also decided to commence localisation of diesel engines. The government in 1989 mandated assemblers to use locally-made diesel engines for their pick-up trucks production. This aimed to set an initial 20 percent localisation rate for engine parts and eventually to increase to or 60 percent for BOI projects and 80 percent for MOI projects by 1995 (Ueda 2007, p.98).<sup>10</sup>

#### *Enhancement of Export Capacity*

From the late 1970s, particularly in the 4<sup>th</sup> (1977-1981) and 5<sup>th</sup> (1982-1986) National Economic and Social Development Board Plans, the Thai government emphasised enhancement of the export capacity of the automotive industry (TAI 2008). The first vehicle exports in 1987 consisted of 488 PVs and 40 buses sold to Canada by MMC Sittipol. This was followed by components exports including safety glass, ignition coils, wiring harness, air and oil filters (Abdulsomad 1999). Automobile exports from Thailand grew to 12,950 units by 1988.

When vehicles exports started in the late 1980s, the Thai automotive industry was still highly protected. For instance, import of CBU PVs under 2,300 cc were still banned and over 2,300 cc were imposed on 300 percent of tariff,<sup>11</sup> while the import tariff on CKD PV kits was 112 percent in the late 1980s (Kaosa-ard 1993).

During this time, the Thai economy grew at an average rate of 10 percent between 1987 and 1990, and automobile demand continued to expand rapidly (Abbott 2003). Furthermore, the domestic vehicle production exceeded total domestic sales for the first time in 1988 (see figure 12).

<Insert Figure 12>

### ***The Start of Liberalisation (1991-1999)***

Up to the end of the 1980s, then, Thailand's automotive development had followed a typical 'East Asian' pattern, expanding exports while keeping the domestic market highly protected (Chang 2002).<sup>12</sup> A turning point in Thailand's automobile industrialisation policies was associated with the establishment of the Anand Panyarachun government after a military coup in February 1991. The new government for the first time introduced liberalisation policies in the automotive industry, lifting the ban on imports of CBUs and substantially reducing tariffs on both CBUs and CKDs (see figures 7 and 8). Investments for new establishments of assembly plants for PVs were approved. Foreign ownership in the automobile assembly industry was deregulated, allowing 100 percent foreign ownership in place of the earlier limitation to less than 49 percent (enacted in 1979), provided they exported 60 percent of their total production – a measure also to be outlawed under the WTO TRIMs agreement. In 1994, the

government also introduced a tax exemption measurement for export activities (Yoshimatsu 2002b, p.130; Foruin 2000, p.35).

Liberalisation policies in the first half of 1990s had several purposes, one of which was to lower domestic automobile prices and increase domestic competition. The Thai government expected that foreign investments from non-Japanese automobile assemblers would increase. During this time, all assemblers except for Thai Swedish Assembly (Volvo affiliation), were associated with Japanese capital and enjoyed oligopolistic advantages in the market. Indeed, the Vice Minister of MOI, Vira Susangkarahan criticised the LC requirement policy on the grounds that it did not facilitate the growth of automobile industry in Thailand, but just created higher automobile prices. In short, it was argued that the automobile industry had received a lot of protection, while consumer received no benefits. The Japanese affiliated assemblers were viewed as receiving excessive rents under a virtual cartel with government protection (Ikemoto 1994, p.173). Nevertheless, in 1994, the LC requirement was raised to 60 percent for pick-up trucks with gasoline engines and to 72 percent for those with diesel engines (see figure 9). But, finally, in 1996 the government announced the abolition of the LC requirements by July 1998 (Terdudomthan 2004, pp.39-40; Fourin 2000, p.35). That is, they were to be abolished prior to the WTO target date, though eventually the abolition was extended to 2000.

In response to liberalisation policies, the American big three assemblers - Ford, Chrysler and GM - decided to establish their own assembly plants in Thailand as regional hubs in Asia (Abbot 2003). In particular, Auto Alliance (a JV between Ford and Mazda) and

GM relocated into the newly developed Eastern Seaboard Industrial Estate. Japanese producers, such as Toyota and Honda, decided to expand their production capacity in the suburbs of Bangkok by establishing new plants in the 1990s. In addition, American components suppliers such as Dana, Visteon and Delphi also followed the American assemblers in Thailand (Terdudomtham 2004).

*Impacts of the 1997 Asian currency crisis*

Although the Thai automotive industry had developed rapidly with the liberalisation policies since 1991, the Asian currency crisis in 1997 had a significant impact. The number of vehicles sold in Thailand fell rapidly (see figure 13). As a result, 600 local firms either went bankrupt or were taken over by foreign firms by 20,000 jobs were lost in the industry in the period 1997-1999 (Abbot 2003, p. 143).

<Insert Figure 13>

In response to the crisis and the ensuing sales slump, automobile producers shifted from domestic sales to exports. In addition, they increased their equity share in their JVs and also assisted their parts suppliers by providing various kinds of financial support (UNCTAD 2001). The Thai government also changed the investment regulations in 1997, allowing foreign majority ownership in joint ventures in order to encourage foreign investment. At the same time, the government introduced new tax policies to reduce the budget deficit, increasing VAT and adding 5 percent excise tax on vehicles (see figure 10). The Thai government also sharply increased tariffs on CBU vehicles (see figures 7 and 8), which resulted in a large reduction of imports into the Thai market

from 16,000 units in 1997 to 2,549 units in 1998 (Fourin 2000, p.42). Also, in order to enhance institutional (policy) and research capacity in the automobile industry, the MOI established the Thailand Automobile Institute (TAI) in 1998.

In response to the crisis, the government also announced in 1997 the postponement to January 2000 of the abolition of LC requirements. In its LC policy, the government had set the highest rate of 72 percent for pick-up trucks with diesel engines, and 54 percent for PVs in 1994 (see figure 9). Before the abolition, some vehicle models were able to reach these requirements. In the case of, Toyota, for example, their strategic PV in the ASEAN market, the Soluna model, and their most popular pick-up truck, the Hilux model had achieved over 70 percent local content in 1999 (Fourin 2000, p. 34).<sup>13</sup>

### ***Creating International Competitiveness and 'Product Champions' (2000-2010)***

At the same time as the Thai government lifted the LC requirement in response to WTO rules in 2000, it began to employ various fiscal policies tactically to foster the industry:

- increasing the tariff rate on CKD from 20 percent to 33 percent, thus both increasing protection for vehicle parts production while decreasing effective protection for assemblers; and
- reducing excise tax on double-cab pick-up truck from 35-48 percent to 12 percent, on other pick-up trucks down to 3-5 percent, and on passenger vehicles (less than 2400 cc) from 37.5 percent to 35 percent (Fourin 2000, p.36).

Excise tax was reduced in order to alleviate the burden on consumers of increased import tariffs on CKD parts. With its tax policy, the Thai government deliberately

created a market demand for the pick-up trucks, particularly double-cab pick-up trucks. Corporate tax exemption was provided for a period of 3-8 years<sup>14</sup> for foreign investment projects of over 10 billion baht. At the same time, tax reduction was provided for imported machinery and materials.

In addition, the Thai government introduced selective industrial policy by picking its *product champions*, linking with various fiscal policies. In January 2002, BOI introduced a ‘New Automotive Investment Policy’, which aimed to develop Thailand into a regional centre of the automotive industry in Southeast Asia. It targeted both pick-up truck production and related components industries as the first *product champion*. The scheme provided exemption of import tariffs on machinery, and three years corporate tax exemption for related components producers in the case of comprehensive projects of over 10 billion baht, including suppliers (Fourin 2002, pp.214-215). Furthermore, the BOI also aimed at functional upgrading by providing various tax incentives for the establishment of R&D and regional operating headquarter (ROH) functions.

In response to the government policies, Toyota, for example, decided to relocate its global pick-up truck production base from Japan to Thailand, accessing Thailand’s large pick-up truck market, commencing with its “IMV (Innovative International Multipurpose Vehicle)” project in 2002.<sup>15</sup> It aimed to use Thailand as a global production base for its Hilux-level small size multipurpose vehicles, started producing two million units<sup>16</sup> and exporting CBUs to over 90 countries, and CKD parts to 9 countries in 2004 (Shimokawa 2010, pp.254-256). In parallel to this, Toyota chose

Thailand not only as a production base, but also as a product development base for the IMV project. In 2005, Toyota established in Thailand its first R&D centre outside of North America and Europe (Staples 2008, p. 209). Furthermore, Toyota also relocated most of its regional operating functions from Singapore to Thailand by establishing Toyota Motor Asia Pacific Engineering & Manufacturing (TMAP-EM) in 2007.

By the same token, Isuzu relocated its entire pick-up truck (D-MAX) production from Japan to Thailand in 2002, and started exporting to over 130 countries in 2003. It eventually also relocated its entire R&D function for pick-up trucks to Thailand in 2010.<sup>17</sup> Auto Alliance also started exporting pick-up trucks (SUV Everest) to over 50 countries in 2005. Honda established an R&D centre to develop local parts procurement and vehicles by investing 2.4 billion baht in 2005 (Fourin 2006, p.120). As a result of the automobile producers' expansion of production capacity in Thailand, over 70 Japanese automobile parts suppliers made investments there in 2005, of which four companies such as NSK established R&D centres in Thailand (ibid, p.176).

The government advocated a further automobile development plan in early 2004, the so-called, 'Detroit of Asia', later renamed the 'Production of Asia', plan. This plan aimed for Thailand to act as a regional hub for automobile exports in Southeast Asia by targeting 2.5 million units of CBU vehicle production, and to become one of the top ten automobile producers in the world by 2016.<sup>18</sup>

The Thai government takes the view that automobile demand will shift from the pick-up truck to the passenger vehicle market in the long term, as the size of the middle class in

the country grows. Government policy is encouraging this trend (Fourin 2011). Furthermore, in order to meet the targets of the 'Production of Asia' plan by 2016, the government's first *product champion*, the pick-up truck, by itself is not enough. Thus the Thai government targeted the development of small, economical, ecological passenger vehicle production. To attract additional foreign investment from automobile producers, it introduced the 'Eco Car' project as the second *product champion* in 2007 (see Table 3).<sup>19</sup> One of the most important features of this project is to use both excise and corporate tax policy effectively linked to localisation of the automobile components industry, particularly facilitating the growth of local industrial capacity of engine production.<sup>20</sup> Under this scheme, the Thai government carefully selected which technology should be localised, and encouraged *local production* by offering several favourable tax incentives.

<Insert Table 3>

In response to the announcement of the Eco Car project in early 2007, initially seven companies: five Japanese producers - Nissan, Honda, Suzuki, Mitsubishi and Toyota - and two others - Volkswagen and Tata Motors - showed their interest and obtained approval from BOI. However, eventually, only the Japanese producers decided to engage in the project,<sup>21</sup> whose total total production capacity exceeded 620,000 units (see table 4). For instance, Nissan decided to create a new regional division of labour between Japan and Thailand for relatively small and inexpensive automobile production by employing the 'Eco Car' scheme. Nissan closed its production lines for the March (Micra) model in Japan and relocated the capacity to Thailand, aiming to export a 'Thai-Made March' to the Japanese market.<sup>22</sup> Nissan commenced their first Eco Car

production in March 2010, accounting for 59,441 units in production and 42,328 units in export (mostly to the Japanese market) in the same year (Fourin 2011).

*<Insert Table 4>*

With regards to human resource development, the Thai government in association with the Japanese government introduced a public-private collaborative human resource development programme for automobile components suppliers, the so-called “Automotive Human Resource Development Project (AHRDP)” in 2006. This was to enhance the local technological capacity of 2<sup>nd</sup> and 3<sup>rd</sup> tier suppliers.<sup>23</sup> Under this scheme, four Japanese companies - Toyota, Nisan, Honda, and Denso - trained over 300 master trainers from for 2<sup>nd</sup> and 3<sup>rd</sup> tier suppliers in Phase 1 (2006-2007). In turn, those master trainers trained over 4,000 workers within their company in Phase 2 (2008-2010).<sup>24</sup>

As a result of the Thai government’s industrial policy in the automobile industry, many components suppliers have also made substantial investments in Thailand. Investment in the automobile components industry accounted for 104 cases and over 33 billion baht (on an approval basis) in 2010, of which approximately 60 percent in both numbers and value were from Japan (Fourin 2011, p. 212-213). In addition, the development of the automobile supporting industry is providing additional opportunities for the industry. For instance, Ford decided to relocate their Focus production from the Philippines to Thailand in order to enjoy the highly developed automobile cluster in the country. The

BOI estimates that Thailand has over 2,300 part suppliers in comparison with Malaysia with 700 suppliers and Indonesia with 500 suppliers.<sup>25</sup>

In the case of Toyota, Toyota Motor Thailand (TMT) sourced their components from 203 first tier suppliers under OEM contracts, and 95 percent of these suppliers were located in Thailand (see table 5). In relation to local procurement in TMT, the average procurement ratio accounted for slightly lower than 90 percent within Thailand and over 90 percent including ASEAN contents in 2010.<sup>26</sup> Furthermore, Toyota is expected to achieve 100 percent local procurement within ASEAN in the near future (Fourin 2011).

*<Insert Table 5>*

## **5. Conclusions**

This paper has traced the development of industrial policy towards the Thai auto industry over the past five decades. Encouraged as part of a general policy of import substitution, the industry initially developed in the 1960s as an assembly activity based on the import of CKD kits, with heavy effective protection. Oriented to the domestic market, with a multiplicity of models, the industry's high import content and resulting balance of payments deficits were seen as a problem to be solved by the localisation of auto parts production. Local content requirements became a central part of the first auto industry-specific policies introduced in the early 1970s, although proposals to limit the number of models of vehicle were withdrawn after industry opposition. One positive impact of the progressive raising of LC requirements was the withdrawal of several smaller auto assemblers who could not comply, which gave scope for existing producers

better to achieve economies of scale. Localisation was achieved, especially by the Japanese-owned assemblers, both by encouraging their component suppliers to locate in Thailand, and by encouraging lower tiers of domestic Thai suppliers.

Although the Thai economy has one of the largest domestic vehicle markets in the ASEAN region, exports are important to an industry subject to large economies of scale both in finished vehicles and some major auto parts. Thai government policy moved towards the strengthening of export capacity in the 1980s, and exports started in 1987. Exports, both of vehicles and parts, continued into the 1990s. They were encouraged by exporting conditions imposed on foreign investment – another TRIMs-unfriendly measure - but their main initial stimulus came with the temporary collapse of the domestic market following the 1997 Asian crisis.

As in many East Asian countries, there was little contradiction between expanding exports and keeping the domestic market protected, despite the supposed anti-export bias generated by protection: even protected markets can soon be saturated! Import protection on vehicles and parts, which was maintained during the 1970s, was increased during the 1980s, and indeed there was a ban on the import of passenger cars from 1978 to 1991. Even when tariffs were lowered in the 1990s, there were left at quite high levels, with effective protection kept higher than nominal protection as parts had lower tariffs.

Whilst the import substitution policy had achieved a rapid expansion of Thai auto production, and even some exports by the end of the 1980s, the world trend towards

liberalisation caused a major policy shift with a change of government in 1991. The ban on imports of passenger vehicles was removed and tariffs reduced, while ownership rules in relation to export requirements were relaxed. LC requirements had been strengthened in the 1980s, and were retained throughout the liberalisation of the 1990s until the WTO target date for their removal. One particular issue driving liberalisation was the belief that continued protection has allowed an apparent cartel of (particularly) Japanese vehicle assemblers to keep domestic prices high to the detriment of consumers. A consequence of the ownership policy changes was that major US motor manufacturers were attracted back to Thailand, increasing competition, and their LC requirements could be met as US parts suppliers also established themselves.

A success of the liberalisation years has been the expansion of exports both of vehicles and parts. This owes much to Thai industrial policy being attractive to foreign investors, particularly Japanese, but also American, who then have been willing to use Thailand as a regional base to develop both regional exports and parts sourcing. What is also interesting, though, is that this attractiveness has been compatible with maintaining tariff protection and with quite a directive industrial policy. Developments after 2000 suggest that the Thai government has been able to maintain considerable policy space to foster the auto industry. Even with the moves to economic liberalisation started in the 1990s, it seems that there has been more continuity than structural break in Thai policies towards the auto industry. Not only has import protection been retained, but LC requirements, though abandoned under WTO rules, had already generated high domestic content. The selective industrial policy -the *product champion* scheme - based

on foreign investment, has been stimulated by fiscal incentives, as has the newer development of the Eco car.

It would seem too that the Thai auto industry has achieved substantial upgrading, with the establishment of Thailand as a regional base by major auto companies and component makers, even for R&D development.

Although the LC policy has sometimes been criticised, and its abolition treated as a substantial inducement to automotive development in Thailand, it was administered pragmatically in response to industry suggestions,<sup>27</sup> and did indeed succeed in providing a basis for the further localisations that took place subsequently. Later industrialising countries, however, if they abide by current WTO rules on TRIMs, would not be able to follow Thailand and base the initial deepening of their industrial structure on the use of LC requirements. The ladder would have been kicked away.<sup>28</sup>

## TABLES AND FIGURES

Table 1. Industrial Upgrading in the Automotive Industry in Thailand

Stage	Production Activity
1	Repairing of imported CBU (completely built up) vehicles
2	Assembly of imported completely knocked down (CKD) kits
3	Localisation of components production, based on original equipment manufacturing (OEM) of lower value-added parts
4	Localisation components production of relatively higher value-added OEM parts, and higher rate of local procurement
5	R&D activity (Product Development and Design); Regional Headquarters functions

Table 2. Global Production Volume of Vehicles by Country in 2010 and 2000

Rank in 2010	Country	No. of Vehicles in 2010	Share in 2010	Rank in 2000	No. of Vehicles in 2000	Share in 2000
1	China	18,264,667	23.5%	8	2,069,069	3.5%
2	Japan	9,625,940	12.4%	2	10,140,796	17.4%
3	USA	7,761,443	10.0%	1	12,799,875	21.9%
4	Germany	5,905,985	7.6%	3	5,526,615	9.5%
5	South Korea	4,271,941	5.5%	5	3,114,998	5.3%
6	Brazil	3,648,358	4.7%	12	1,681,517	2.9%
7	India	3,536,783	4.5%	15	801,360	1.4%
8	Spain	2,387,900	3.1%	6	3,032,874	5.2%
9	Mexico	2,345,124	3.0%	9	1,935,527	3.3%
10	France	2,227,742	2.9%	4	3,348,361	5.7%
11	Canada	2,071,026	2.7%	7	2,961,636	5.1%
12	Thailand	1,644,513	2.1%	19	411,721	0.7%
13	Iran	1,599,454	2.1%	27	277,985	0.5%
14	Russia	1,403,244	1.8%	13	1,205,581	2.1%
15	UK	1,393,463	1.8%	10	1,813,894	3.1%
	Others	9,770,122	12.5%		7,252,353	12.4%
	Total	77,857,705	100.0%	Total	58,374,162	100.0%

Source: Data Compiled from the website of OICA (International Organization of Motor Vehicle Manufacturers: <http://oica.net/category/production-statistics/> accessed on the 18<sup>th</sup> August 2011)

Table 3. Overview of the Eco Car Project

1. Requirements	
Engine size	Diesel engine - under 1,400 cc / Gasoline engine - under 1,300 cc
Mileage	Over 20 km per litter
Environmental standard	Meeting Euro 4 exhaust gas standard and under 120 g of CO2 emission per 1 km mileage
Safety standard	Meeting UN/ECE regulation article 94 and 95
Investment	Over 5 billion baht investment
Local production requirement	Local production requirements for vehicles and engines and for 4 out of 5 component items (cylinder head, cylinder block, crankshaft, camshaft, connecting rod). Additional requirement for local machine work for 3 items (cylinder head, cylinder block, crankshaft)
Production Volume	Over 100,000 units of production after 5 years the project commences
2. Benefits	
Excise tax	17% (the rate of under 2,000 cc and 220 hp engine vehicle is 30%)
Corporate tax	Maximum of 8 years tax exemption for Eco Car project, but the amount of tax exemption should not exceed investment amounts
Tariffs	Import tariff exemption for all production equipment and machineries, and maximum of 90% of tariff exemption for input materials for 2years

Source: Fourin (2011, p.191)

Table 4. Participants in Eco Car Project

Company	Investment (baht)	Production (units)	Starting Year	Note
Nissan	5.51 billion	120,000	2010,3	New March/Micra model (1200cc) majority is export to Japan, local procurement ratio of 90%
Honda	6.7 billion	120,000	2011,2	Brio model (1200cc), 50% for domestic market and 50% for export
Suzuki	9.5 billion	138,000	2012,3	Swift model (1200cc), 26,000 units for domestic market, the rest are for export
Mitsubishi	16 billion	150,000	2012,3	Global Small model (1000-1200cc) export to ASEAN countries and Japan
Toyota	6.64 billion	100,000	2012	New Vios/Yaris model, 50% for export to ASEAN countries

Source: Fourin (2011, p.191)

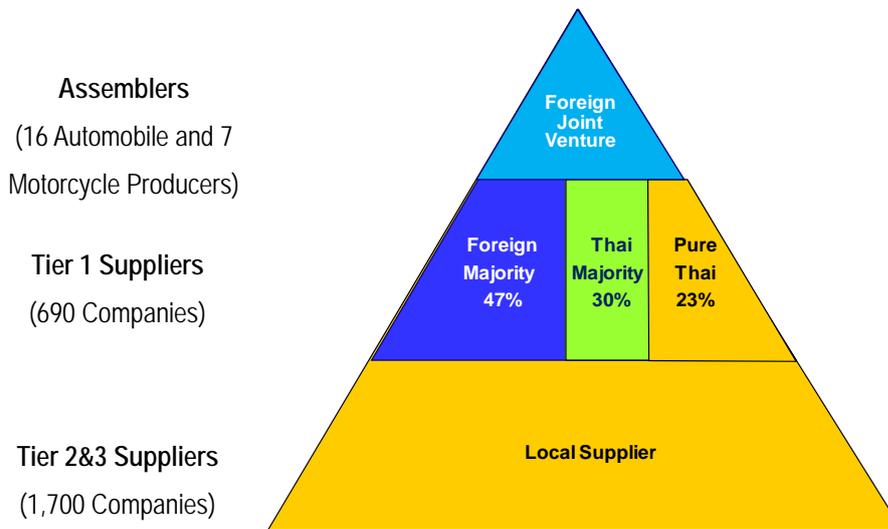
Table 5. Procurement in Toyota Motor Thailand in 2010

Type of Firm	Number	Percent
Japanese firms (including JV) in Thailand	129	64%
Local (Thai) firms	51	25%
EU & US firms (including JV) in Thailand	12	5%
Imports: from 10 countries (11 Toyota firms)	11	5%
Total	203	100%

Source: Presentation Document at TMAP-EM

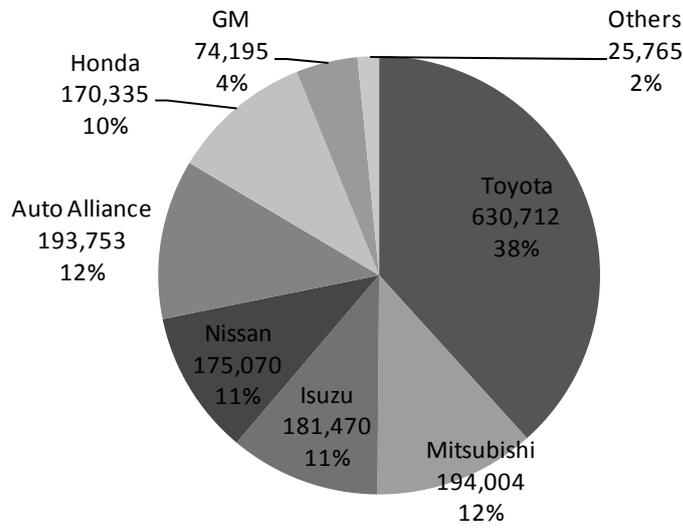
*Figures*

Figure 1. Structure of the Thai Automobile Industry in 2010



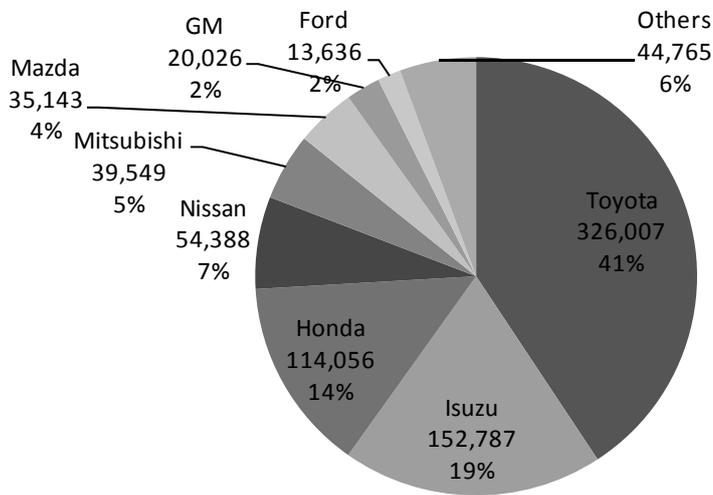
Source: TAIA

Figure 2. Production Share of Automobile Producers in Thailand in 2010



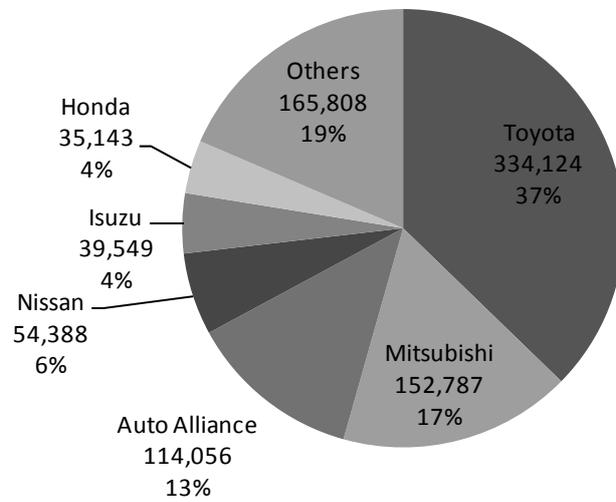
Source: Data Compiled from Fourin (2011)

Figure 3. Sales Share of Automobile Producers in Thailand in 2010



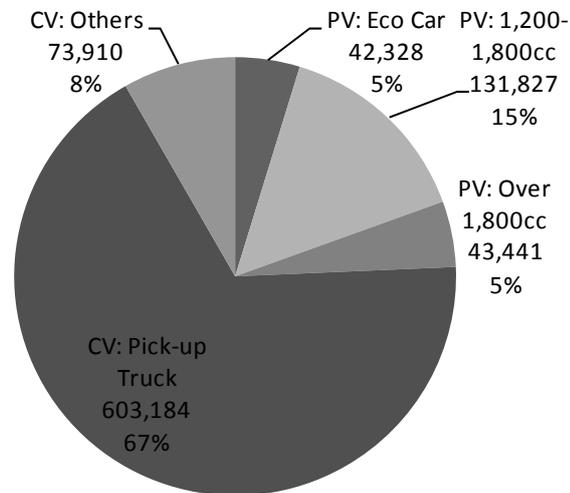
Source: Data Compiled from Fourin (2011)

Figure 4. Export Share of Automobile Producers in Thailand in 2010



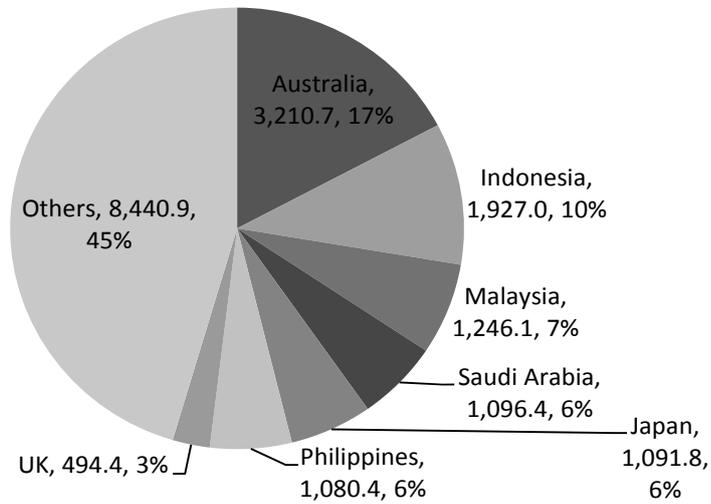
Source: Data Compiled from Fourin (2011)

Figure 5. Export Share of Vehicle Types in Thailand in 2010



Source: Data Compiled from Fourin (2011)

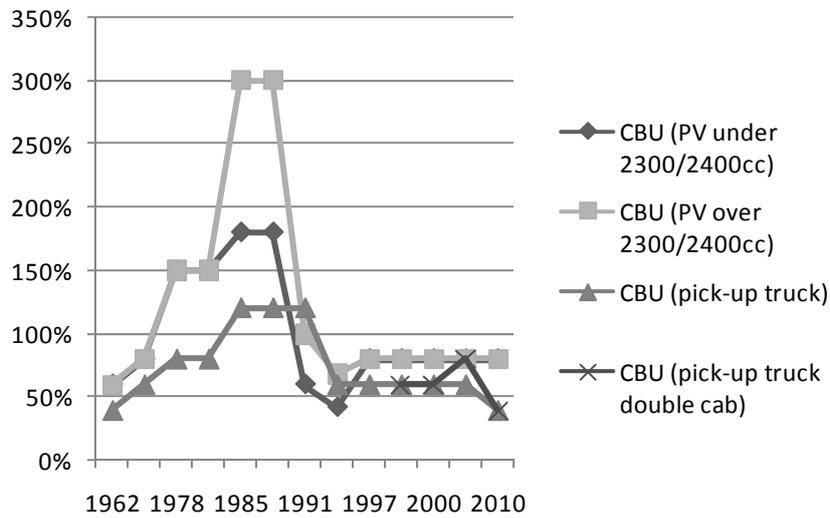
Figure 6. Major Export Destination of Vehicles and Parts from Thailand in 2010



Note: Unit: US\$ million; HS87 Vehicles, not Railway

Source: World Atlas Database

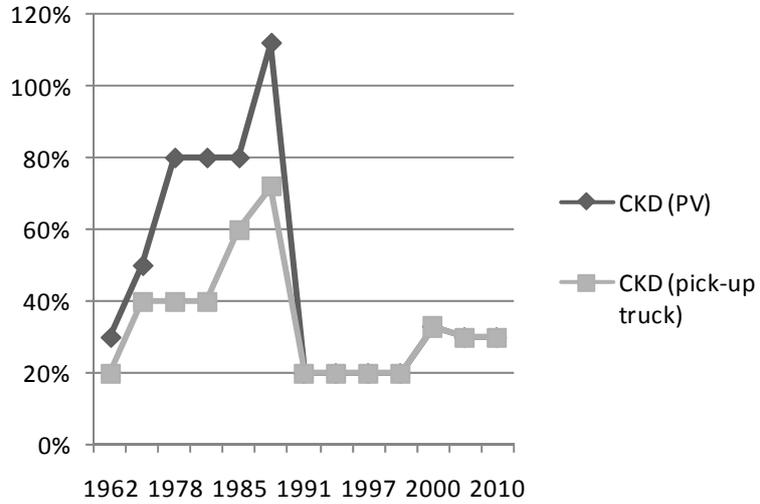
Figure 7 Tariffs on CBU vehicles in Thailand, 1962-2010



Note: Vehicle categories changed from 2300cc to 2400cc in 1992 and later in 2005 into 4 categories such as under 2000cc; 2001cc-2500cc; 2501cc- 3000cc; and over 3000cc

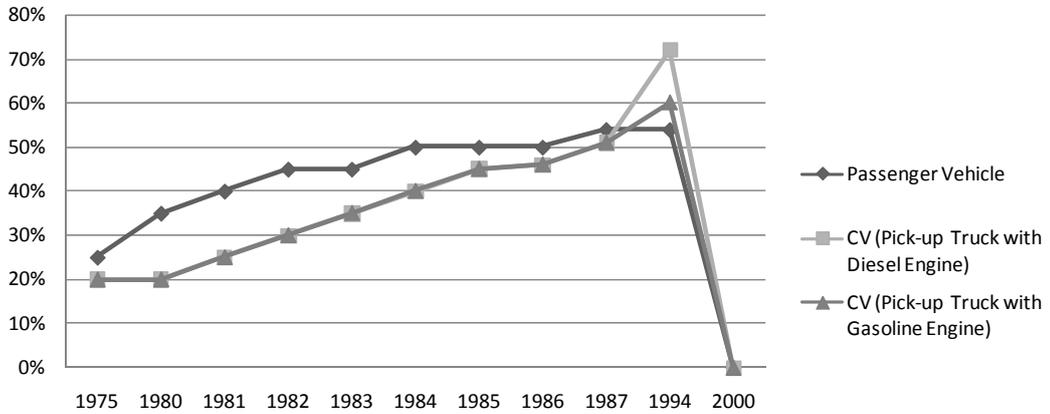
Source: Data Compiled from Komura (2000), Fourin (2000, 2002, 2008, 2010)

Figure 8 Tariff on CKD vehicles in Thailand, 1962-2010



Source: Compiled data from Komura (2000), Fourin (2000, 2002, 2008, 2010)

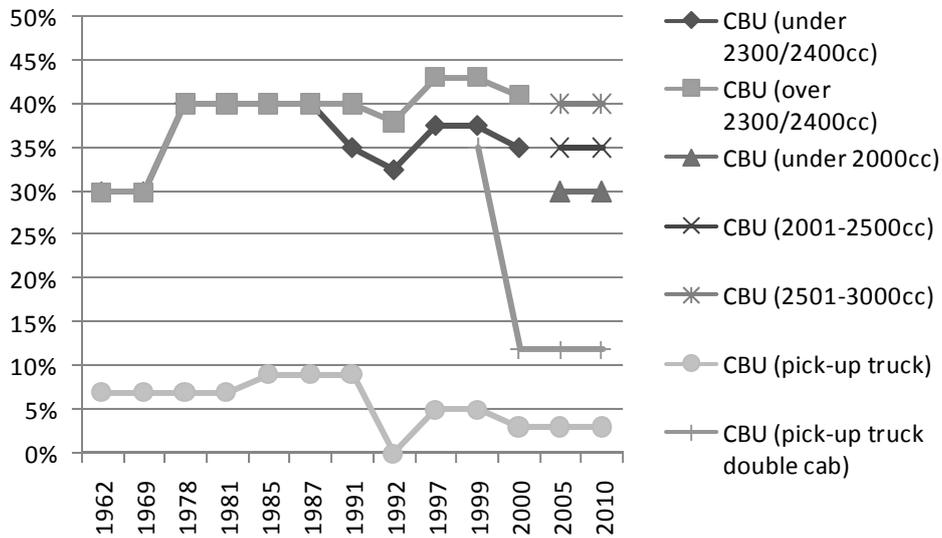
Figure 9 Rates of Local Content Requirements for Vehicles in Thailand



Note: CV: Commercial Vehicles,

Source: Data Compiled from Higashi (2000), Terdudomthan (2004) and Fourin (2000, 2002)

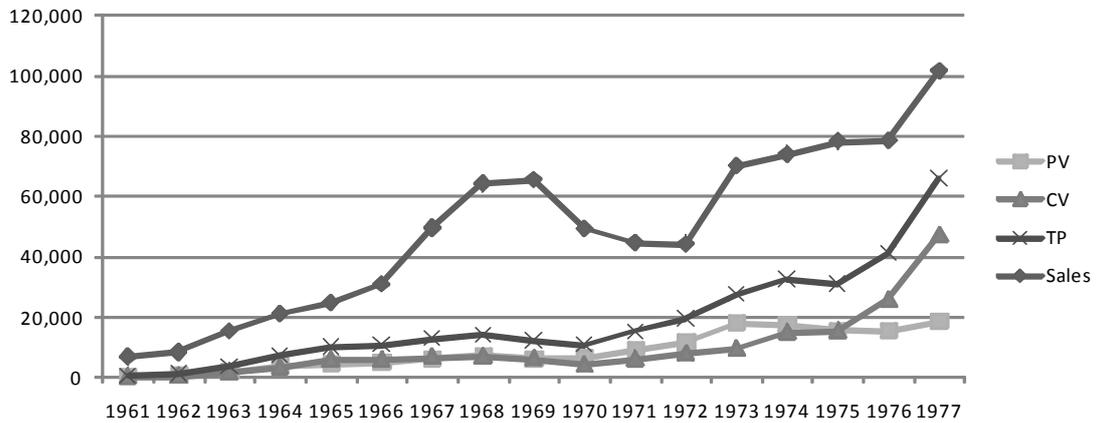
Figure 10 Business Tax (1962-1991) and Excise Tax (1992-2010)



Note CBU (pick-up truck double cab) in 1999 is between 35 and 48 percent.

Source: Data Compiled from Komura (2000), Fourin (2000, 2002, 2008, 2010)

Figure 11 Total Number of Production and Sales of Vehicles in Thailand, 1961-1977

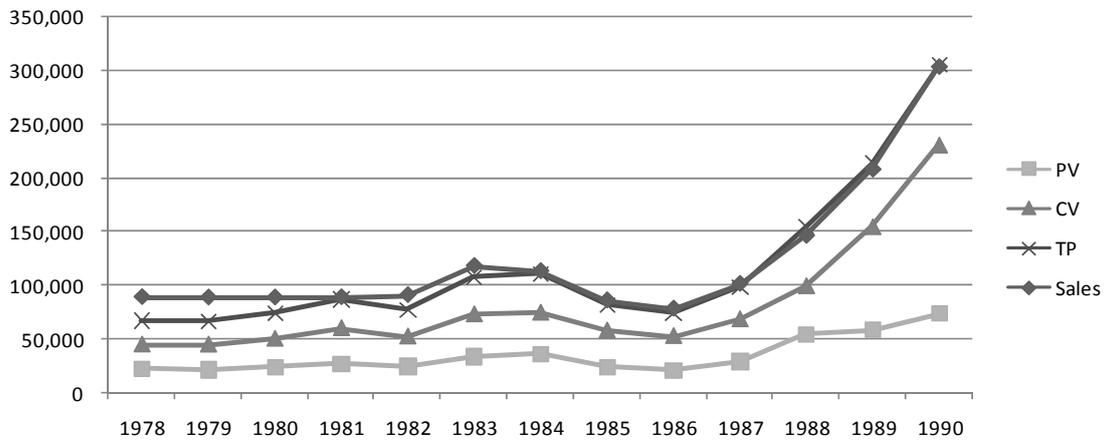


Note: PV: Passenger Vehicles, CV: Commercial Vehicles, TP: Total Production,

Unit: number of Vehicle

Source: Data Compiled from Higashi (2000, p. 146)

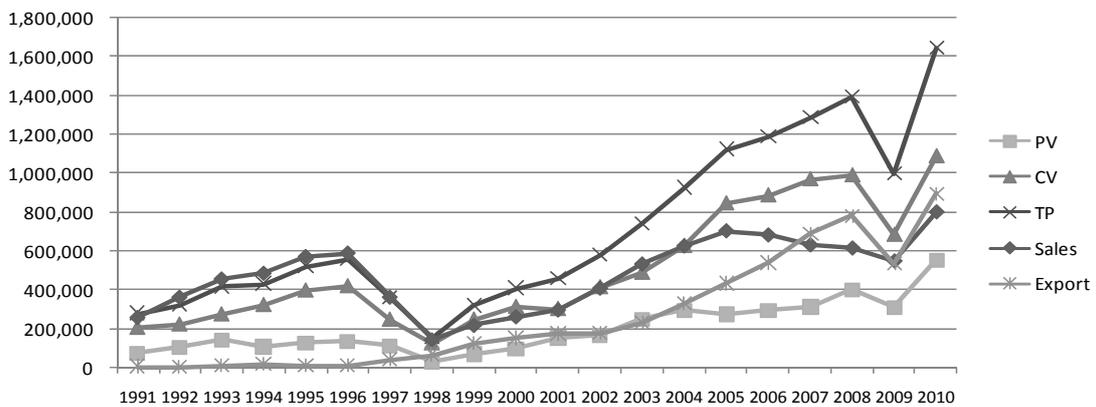
Figure 12 Total Number of Production and Sales of Vehicles in Thailand, 1978-1990



Note: PV: Passenger Vehicles, CV: Commercial Vehicles, TP: Total Production,  
Unit: Number of Vehicles

Source: Data Compiled from Higashi (2000, p. 146) and Fourin (2011, p.189)

Figure 13 Total Number of Production, Sales and Exports of Vehicles in Thailand, 1991-2010



Note: PV: Passenger Vehicles, CV: Commercial Vehicles, TP: Total Production,  
Unit: Number of Vehicles

Source: Data Compiled from Fourin (2011, p.189)

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## NOTES

<sup>1</sup> In comparison with non-man-made factors such as natural resources and geographic locations.

<sup>2</sup> The WTO agreements still allow developing governments to select strategic industries or particular operations/functions (such as R&D, regional headquarters) for industrial development. This can be done by employing discretionary power in promoting science and technology activities, particularly subsidising private and public R&D and providing fiscal incentives (Di Mario 2009).

<sup>3</sup> Seven years for least developed countries (see [www.wto.org](http://www.wto.org))

<sup>4</sup> For further discussion of the subcontracting layers in the automobile industry, see Thoburn and Takashima (1992: ch.5)

<sup>5</sup> It also, of course, exposes Thailand to import competition, although the direction of sales is heavily influenced by the sales and location policies of the key Japanese motor multinationals.

<sup>6</sup> On the difference between nominal and effective protection, see the classic paper by Max Corden (1966).

<sup>7</sup> In 1969, tariff rates were risen at 50 percent for CKD PVs and 40 percent for CKD CVs, and CBU PVs for 80 percent and CBU CVs for 40 percent due to trade deficits (Higashi 2000).

<sup>8</sup> LC requirements were further revised to 20 percent for CVs with windshields (effective in 1975) in 1974 (Higashi 2000).

<sup>9</sup> FTI was under the strong influence of assemblers, particular Japanese corporations, which were opposed to localisation policies. By contrast, TAPMA was formed by local parts suppliers, who supported localisation policies (Higashi 2000).

<sup>10</sup> Toyota, Nissan and Isuzu started the project under BOI, and Mitsubishi was under MOI.

<sup>11</sup> To be precise, an import duty of 200 percent + surcharge of 100 percent were imposed (Ikemoto 1994).

<sup>12</sup> This is despite the apparent anti-export bias generated by tariff protection of the domestic market: since exporting strengthens economies of scale and avoids saturation of the domestic market. For discussion of a similar phenomenon in another successful Asian exporter, Vietnam, see Thoburn (2004, pp. 127, 144).

<sup>13</sup> This ratio includes 9 percent of ASEAN content.

<sup>14</sup> Depending on the location of investment – Zone 1 (Bangkok and the surrounding 5 provinces) for 3 years; Zone 2 (12 provinces outside of Zone 1) for 5 years; and Zone 3 (except for Zone 1 and 2) for 8 years.

<sup>15</sup> JETRO BSCT Report (October 2003).

<sup>16</sup> IMV production in 2010 accounted for approximately 350,000 units (Fourin 2011).

<sup>17</sup> Isuzu Website: [www.isuzu.co.jp/press/2010/3\\_26pup.html](http://www.isuzu.co.jp/press/2010/3_26pup.html) (accessed 5th August 2010).

<sup>18</sup> Interview with the President of TAIA on the 23<sup>rd</sup> August 2011.

<sup>19</sup> Ibid.

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<sup>20</sup> The Thai government requests 4 out of 5 most important engine components (see the table 3.)

<sup>21</sup> According to the president of TAIA, VW does not own well established supplier networks in comparison with Japanese competitors and became difficult to meet the Eco Car's requirements, and TATA produces only LNG engine vehicles, so they could not meet the requirements.

<sup>22</sup> According to the president of TAIA (also vice president of Nissan), the major reason of the relocation was a concern of continuous appreciation of yen after the global financial crisis.

<sup>23</sup> Thai side involved MOI and FTI and Japanese side involved Ministry of Economy, Trade and Industry (METI), Japan External Trade Organization (JETRO), Japan Chamber of Commerce of Bangkok.

<sup>24</sup> Training fields, Toyota: Toyota Production System, Nissan: Skill Certification System, Honda: Die & Mould, Denso: Production Technology. Interview with the Vice President of TMAP-EM on the 5<sup>th</sup> March 2010.

<sup>25</sup> Interview with Deputy Secretary General at BOI on 15<sup>th</sup> February 2011.

<sup>26</sup> Interview with the Vice President of TMAP-EM on the 5<sup>th</sup> March 2010.

<sup>27</sup> Both these points are strongly made by Athukorala and Kohpaiboon (c2010), although they seem to us to be contradictory to some extent.

<sup>28</sup> Although this metaphor is widely associated with Ha-Joon Chang's well-known work (Chang 2002), as Wade (2003a, p.632) notes, it was originally coined in 1885 by the German writer on protectionism, Friedrich List.

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