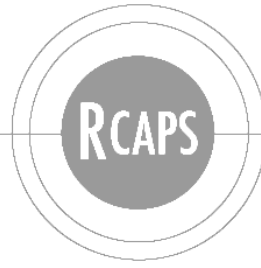


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*How to conduct effective industrial policy:
a comparison of automotive development in the Philippines and
Indonesia*

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ABSTRACT

Compared to the recent successes of Indonesia, Philippines vehicle production has faced severe problems of lack of economies of scale and a weak domestic supply base, as well as strong import competition, including from illegally imported used cars. Although at first sight there have been many similarities in industrial policies towards the automotive industry in the two countries, we identify various inconsistencies and problems of implementation in the Philippines, which, unlike Indonesia since the late 1990s –at the time considered a failure - has not succeeded in developing vehicle exports. Although now the Philippines is starting to see the sort of growth in vehicle ownership that is currently well underway in Indonesia, it will have to struggle under its new CARS policy to stop the growth in the market simply being met by more imports.

KEY WORDS: Philippines, Indonesia, motor industry, automotive, industrial policy

JEL CLASSIFICATION: F13, F23, L62, O25

1. Introduction

In the early years after the Second World War, active industrial policy – in the sense of government intervention to promote dynamic structural change faster than market forces alone would do (Rodrik 2004; UNIDO 2013, ch.7) - was widely accepted as necessary for national

economic development. Later, in the 1980s and 1990s, industrial policy fell out of favour during the dominance of neoliberal ‘Washington consensus’ ideas of free market fundamentalism. Industrial policy now is ‘back on the agenda’ (Weiss 2016), and was given a boost by the need for policy interventions following the 2008-9 world recession (Stiglitz et al 2013), with debates about how far static comparative advantage should be defied in the interests of long-run development (Chang 2013). The automotive industry has been widely regarded by governments of developing countries as a desirable progression from more traditional, labour-intensive industries such as textile production towards activities incorporating higher technology and more advanced labour skills. In this sense it is an example of developing countries following a pattern of structural change mapped out by already more developed countries (Altenburg and Lütkenhorst 2015, 178). However, as Chang (2013: 40-42) has noted with regard to the Korean and Japanese automotive industries, the success of industrial policy may depend more on its detailed provisions than on the extent to which the promoted industry deviates from the country’s comparative advantage.

To examine the impacts of industrial policy, we take the case of two countries whose automotive industries were seen to have serious problems in the 1990s, but where one (Indonesia) appears to have surmounted many of its difficulties, whereas the other (the Philippines) has not, although it has had some success in developing exports of components. Our focus here is on ‘hard’ industrial policies such as local content requirements as part of ISI, rather than ‘soft’ ones like those relating to science and technology or human capital development.¹

The Philippines’ economy has been widely seen as less successful than those of neighbouring countries like Malaysia and Thailand, as their *per capita* income statistics suggest (Table 1). After several centuries of Spanish colonial rule, Philippines is sometimes perceived as an

‘honorary’ Latin American country that happens to be located in South East Asia. Fforde (2009, 161) has described the economy’s overall policy performance as ‘intention without success’; although its recent growth rates have not been lagging behind its Southeast Asian neighbours’ (Table 1).

Indonesia has had its problems too: not only is its national income *per capita* broadly similar to that of the Philippines, but also the Indonesian motor industry up to the late 1990s was described in an influential paper as an example of ‘how not to industrialize’ (Aswicahyono, Basri, and Hill 2000). Since the late 1990s, though, the Indonesian motor industry has been expanding fast. Now (2016 figures), the physical total vehicle output of Indonesia is almost nine times higher than that of the Philippines, even though Indonesia’s total market size (in terms of national income) is only 2.4 fold more than the Philippines’ (at market exchange rates) or only three-fold more real purchasing power (national income at purchasing power parity exchange rates) (Tables 1 and 2).

Yet back in the mid-1970s the Philippines had as large a vehicle output as Malaysia (each around 51,000 vehicles), and larger than Thailand’s (31,981 in 1975). The Philippine’s output was only two thirds that of Indonesia (75,570 in 1976), although that is unsurprising given Indonesia’s much larger population.

Why has Indonesia’s automotive industry been so much more successful in recent years than that of the Philippines? What have been the differences in industrial policies between the two countries, both in design and implementation, and what can we learn of industrial policy making from these experiences? What other circumstances have made the Indonesian automotive industry grow faster and export more, while the Philippines has lost much of its

domestic market to imports? To answer these questions this paper will trace automotive developments from their early phases of import-substituting industrialisation (ISI) to the later liberalisations, both before and after the WTO's (World Trade Organization) post-2000 restrictions on trade-related industrial policy measures. Like most developing countries except the two with the largest potential domestic markets² – India and China - both the Philippines and Indonesia have automotive sectors dominated by transnational automotive assemblers. These assemblers, in the case of both Indonesia and (to an only slightly lesser extent) the Philippines, are now overwhelmingly Japanese. Industrial policy, then, has to work in a context where a principal aim has to be to influence the activities of these multinational assemblers, and also their major component suppliers, often themselves large multinationals.

This paper is based on fieldwork in Indonesia in 2013 and in the Philippines in 2014 and 2015, supplemented and updated by a wide variety of sources both in English and in Japanese. The comparison follows on from our country studies of Thailand (Natsuda and Thoburn 2013), Malaysia (eg Natsuda et al 2013), Indonesia (Natsuda et al 2015) and the Philippines (Natsuda and Thoburn forthcoming), and our comparison of policies in Thailand and Malaysia (Natsuda and Thoburn 2014).

[Tables 1 and 2 about here]

2. Automotive industrialization policy issues

Changing policy frameworks

In the early post-war period, ISI policies typically were used to promote automotive production in developing countries. Although as much a trade policy as an industrial policy, ISI policies were seen as more effective than direct industrial intervention (eg by offering subsidies to desirable activities) because they seemed easy to apply and generated tax revenue rather than incurring governments expenditure (Thoburn 2016). Both the Philippines and Indonesia, like most developing countries, started their automotive industrialisation with assembly, importing kits of components (CKD – *completely knocked down* kits) and assembling these CKDs into CBUs (*completely built-up* vehicles).

Starting with vehicle assembly while importing components avoids one of the main market failures in developing countries – *coordination failure* - where the private sector finds it difficult to set up many necessarily complementary activities simultaneously (Altenburg and Lütkenhorst 2015, 6-7). It has the advantage too that countries gradually can substitute local production of components in place of imports, and since vehicles typically have thousands of individual parts, there is a wide choice of where to start. In this way, the local content (LC) of production can be increased. ISI policies in the past often have been accompanied by explicit LC requirements (LCRs), sometimes backed by policies of mandatory deletion (MD) - where specified components must be *deleted* from imported CKD kits so that local production can take the components' place. In other words, vehicle assembly can be a rich source of *backward linkages*, although such linkages, when promoted by policy, do not necessarily become internationally competitive (Thoburn 1973). However, since the early 2000s, *trade-related investment measures* (TRIMS) such as LCRs and MD provisions have been banned under WTO rules, though some countries, such as Thailand, have found ways of legally circumventing them to maintain some 'policy space' in which to operate (Natsuda and Thoburn 2014).

Component production may not necessarily be undertaken by local firms but by inward foreign investors, often global ‘mega-suppliers’ (Humphrey and Memedovic 2003). These suppliers, as originally in Japan (Thoburn and Takashima, 1992, ch.5), help to organize the production of suppliers in the lower tiers, and nowadays supply modular parts (eg car seat assemblies rather than just the seats), which increases their power over lower tiers. Particularly with Japanese assemblers, there is a pattern of ‘follow sourcing’, whereby first tier suppliers follow the assemblers to new locations. As Wad (2010, 5) notes, when large suppliers of components move into a developing country, they may push such existing locally owned first tier suppliers as there are down into lower tiers, or out of business altogether.

The Automotive Global Value Chain, and the position of ASEAN

Global value chains (GVCs) refer to the organization of an industry from production to final consumption, with particular stress on who controls (exercises ‘governance’ over) them and how that control is organised. GVCs are now a widely familiar concept – set out more fully in several of our earlier papers on the automotive sector - but still very useful as the theoretical background for our purposes.³ In a recent contribution, indeed, Milberg et al (2014) argue that ‘managing’ the GVCs through which much of developing countries’ exporting takes place is one of the major tasks of industrial policy, particularly with respect to the upgrading of local firms.

In the automotive industry, the GVC is normally seen as ‘producer-driven’, with governance coming from the giant multinational motor companies like Toyota or Volkswagen who dominate the industry, although the multinational component mega-suppliers like Denso from Japan or Bosch from Germany also exercise governance over lower tiers of suppliers, as indicated above, in association with the needs of the multinational assemblers.

The other principal concern of GVC studies – the upgrading of products, processes and functions – is of less interest in automotive assembly in the sense that the multinational motor companies who dominate, and a high proportion of the first-tier suppliers, already embody world best-practice. In practice their main concern is how to achieve economies of scale, the main driver of costs in the industry.⁴ Assemblers and mega-suppliers do, however, need to adapt to the environment of developing countries and grow their supply chains, helping domestic lower-tier firms to upgrade, especially in the context of LC requirements and MD policies.

Events in the automotive industries in the Philippines and Indonesia need to be viewed in the context of changes in the automotive GVC, particularly as they affect ASEAN – the Association of South East Asian Nations - and other Asian countries. The relocation of automotive production from developed countries to developing and transitional economies can be seen in Table 2, particularly the dramatic increases in output in China and India since 2000. In ASEAN, production by Thailand rose almost five-fold and in Indonesia by four-fold. Malaysia, ASEAN’s least successful automotive performer (Natsuda, Segawa and Thoburn 2013) besides the Philippines,⁵ still had an output in 2016 almost four times more than that of the Philippines. Japan’s domestic output has stagnated, but production has been located to other Asian countries, with foreign investment by Japanese companies being the principal driver of

ASEAN's increased automotive output. In 2012 the production volume of Japanese automotive companies operating overseas was about 1.5 times greater than their output within Japan (Aoki 2015, 83).

Underlying the global relocation of vehicle production is the slow growth in demand in the USA, Japan, and the richer parts of Western Europe resulting from the maturity of their markets, where vehicle ownership per unit of population is already high (Table 3) and the main source of sales is replacement purchases. Producers have sought to move production to countries where demand is growing, and where lower wages are an added attraction.⁶

[Table 3 about here]

3. Overview of relative automotive performance and structure in the Philippines and Indonesia

Production and Sales

Figures 1 and 2 show the performance of the two countries in terms of output, with Indonesia's total output some fifteen times more in 2014. Falls in Indonesian automotive output and sales in 2014-15 due to the ending of fuel subsidies and some general growth slowdown,⁷ while the Philippines output was growing, reduced the difference to ten-fold in 2015.⁸ The excess of Indonesian production over that of the Philippines is quite long-standing: by 1990 Indonesia's annual output had risen to over 200,000 vehicles, while that of the Philippines was below 150,000 even at its all-time peak in 1996.

[Figures 1 and 2 about here]

In the Philippines, Toyota alone accounts for nearly half of total output, and other assemblers include Nissan, Mitsubishi and Honda. Ford used to produce in the Philippines but left in 2012 relocating to Thailand. In Indonesia, Toyota together with its associated company Daihatsu holds over half of production (Figure 3).⁹

[Figure 3 about here]

In terms of sales in Indonesia, major Japanese brands account for around 90%, while in the Philippines the Korean brand Hyundai and also Ford have significant minority shares (Figures 4 and 5).

[Figures 4 and 5 about here]

Import Penetration

A clearly observable feature of the Philippines performance in Figure 1 is the stagnation of total vehicle production below 100,000 units on the graph from 1997, below its 1996 peak before the 1997 Asian crisis, from which production never fully recovered. In contrast to production, sales in the Philippines recovered fairly quickly after the crisis, and the growing excess of vehicle sales over production indicates growing net imports.¹⁰ In the case of Indonesia (Figure 2), growth in sales is matched by growth in total production; this does not mean, though, that all domestic production is consumed locally – rather that vehicle imports and exports are balanced.

Export Performance

Figure 6 shows the Philippines' exports since 1997. While passenger vehicle exports (HS 8703) are very small, and commercial vehicle exports (HS 8704) are negligible, exports of parts and accessories (HS 8708) in 2016 were about \$1.3 billion, making up almost the whole of the country's total automotive exports (HS 87), though wiring harnesses (HS 854430) – classified under electrical (HS85) rather than automotive (HS87) in the trade data - were an additional \$2 billion.¹¹ The Indonesian export picture is rather different (Figure 7). In 2016 Indonesia's exports of parts and accessories (HS8708) of about \$1.5 billion were a little larger as those of the Philippines and it also had wiring harness exports of almost \$0.8 billion, but its passenger vehicle exports were even larger - generating total automotive exports (including wiring harnesses) of nearly \$7 billion

[Figures 6 and 7 about here]

Structure of the automotive industries

Table 4 shows the number of assemblers and parts suppliers, together with total employment. While the number of assemblers in the Philippines¹² is the same as Malaysia, and fewer than Thailand, Indonesia or Vietnam, it is telling that the Philippines's automotive output, as we have seen, is so much lower than the other main producers in ASEAN (i.e. excluding Vietnam), indicating the Philippines' problems of achieving economies of scale in production.

Interestingly, although the Philippines has some successful exporters of parts and accessories, the number of automotive suppliers is less than all of the other ASEAN automotive producers, and strikingly less than Thailand's. Also, one interviewee in Manila commented that the structure of suppliers is unlike the pyramidal shape of the other main ASEAN producers (eg

Thailand's – see Natsuda and Thoburn 2013, 418), in that the third tier of suppliers is relatively underdeveloped.¹³

[Table 4 about here]

4. The origins of automotive industrialisation policies in the Philippines and Indonesia

This section traces the development of policies in the two countries using the 1997 Asian financial crisis as a watershed, which had particularly severe effects in Indonesia. Significant policy changes also occurred in both countries under the post-2000 new WTO policy regime, covered in the next section.¹⁴

Drivers of policy change

While policies are partly driven by outside changes in development thinking – particularly the later moves from ISI towards economic liberalisation – they also can be driven by local political forces and special interests. Interestingly, both in the Philippines particularly under the Marcos regime (1966 - 1986) and in Indonesia particularly under President Soeharto's 'New Order' (1967-1998), an apparently disinterested group of technocrats was politically influential in shaping policy, although subject to periodic opposition (Fforde 2009, ch.11; Hill 2000). Different ministries too may have different policy agendas. Fforde (2009, ch.11) is of the opinion that the policy agenda in the Philippines had little interaction with local politics, being driven mainly from the outside, but that state capacity was weak and policy makers were unable to learn pragmatically from mistakes. For Indonesia, Hill (2000, 98) argues that the effectiveness of the state under Soeharto was considerable, not only in terms of fiscal authority

but in terms of regulatory reach. Corruption and nepotism in Indonesia, most particularly among the Soeharto family, was a problem, as we shall see, affecting the automotive industry in the failed national car project. There was also spectacular corruption and nepotism under Marcos, but effects on the motor industry were less obvious.

*Import substitution and partial liberalisation in the Philippines before the 1997 crisis*¹⁵

Like Malaysia and Thailand (Natsuda and Thoburn 2014), the automotive industry in the Philippines was set up as part of ISI policies in the 1950s designed in part to save foreign exchange. A ban on the commercial import of CBU vehicles was imposed.¹⁶ A variety of assemblers, including some joint ventures between local firms and foreign multinationals, established themselves. By 1968 there were 29 assemblers for a domestic market of only around 10,000 vehicles, and some sixty models were being produced (Aldaba 1997, 3) - a situation where it was virtually impossible for any assembler to achieve economies of scale.

The country's first explicit, comprehensive policy relating to the automotive industry dates from 1971 with the Progressive Car Manufacturing Programme (PCMP). This continued the ban on CBU imports, and introduced LCRs hoping to achieve 60% local content by the mid-1970s. To tackle the overcrowding in the industry, the right to import CKD kits was limited to five assemblers. Programmes for the local manufacture of trucks and truck engines were also initiated (Natsuda and Thoburn forthcoming). Interestingly, and importantly, the PCMP also included requirements for assemblers to generate some of the foreign exchange necessary for them to import CKD kits. This policy - later to be banned (along with LCRs) under WTO's TRIMS - saw the beginnings of the Philippines' main automotive success, the exports of vehicle components. Major assemblers in the Philippines including Toyota, Mitsubishi, Nissan and Ford established component production, particularly of transmissions, for export on a

regional basis. This was a time when there was some degree of instability in other countries in the region, including the war in Vietnam; the Philippines seemed relatively more attractive than it does now.¹⁷

In terms of the encouragement of LC, Aldaba argues that the PCMP policy was a failure: although LC rose from 34 % in 1978 to 43% in 1983, the indirect import content was extremely high, much component production was undertaken in-house by the assemblers, and there were few purchases from local component manufacturers (Aldaba 1997, 4). However, the number of parts manufacturers did rise somewhat over the 1970s (Ofreneo 2008, 69).

Automotive policy in the early 1980s was sharply interrupted by recession associated with the international debt crisis following the OPEC oil price rises in 1978-79, and severe shortages of foreign exchange. The period 1983-86 also saw political upheaval in the Philippines, culminating in the departure from power of President Ferdinand Marcos. Following the assassination of the major political opposition figure Benigno Aquino in August 1983, widely blamed on Marcos, it is said that several foreign motor companies took fright: Ford, GM and Toyota left the Philippines, with only Mitsubishi and Nissan among the major manufacturers remaining,¹⁸ though Toyota mothballed its plant (Ofreneo 2008, 70) but subsequently returned. By the end of the recession local car annual production and sales has fallen to less than 4,000 units (Figure 1).

Under the new Aquino government, policy to boost the industry after the recession was set out in the 1987 Car Development Programme (CDP). The ban on CBU imports was continued. There was a limitation of the assemblers in the industry to only three – joint ventures involving Mitsubishi, Nissan and Toyota. CDP also required participants to earn 50% of their own foreign

exchange needs for CKD imports, continuing the incentive to export components produced under the country's LCRs. LCRs and foreign exchange earning requirements were also a part of the subsequent and short-lived People's Car programme started in 1990, for production of small, low-priced cars. CDP participants had to produce small cars before being allowed to enter into the production of larger vehicles. Limitations on the number of assemblers were lifted as part of the Foreign Investment Act of 1991 (Ofreneo 2008, 71).

Liberalisation of a sort started in the industry in the mid-1990s, when the ban on the commercial importation of CBU vehicles was finally lifted in 1995. However, the tariff then applied on CBUs was 40%, which, though the lowest tariff on vehicles in ASEAN (Aldaba 1997, 33), when combined with a mere 3% on CKD imports, gave higher *effective rates of protection* (protection on value added).¹⁹ Indeed, Aldaba's (1997, 22-23) calculations of ERPs for four major (unnamed) assemblers indicated that the value-added generated by local assembly was negative when valued at world prices. That is, it cost more to import and assemble the components than it would have cost to have imported the complete vehicle. For a sample of car and commercial vehicles it was estimated that in 1995 the cost of locally produced passenger cars and light commercial vehicles ranged from between 2.37 and 3.68 times more than the same vehicle could be imported from Japan (Aldaba 1997, 24) – at such levels of cost, even a nominal tariff of 40% would not have been effective at discouraging imports. Later work by Aldaba (2008, 22) comparing costs in Philippines and Thailand, suggested that costs (net of tariffs and taxes) in the Philippines were approximately 1.4 times higher than in Thailand.

Underlying the Philippines' low level of efficiency were two main factors: low scales of production and the high cost of local inputs. Of the 11 assemblers in the mid-1990s, only four

had capacities of over 10,000 units annually. Local components included some produced by multinational assemblers or their offshoots, and some other Japanese suppliers, but in the lower tiers of production there were many small and medium enterprises (SMEs) with low levels of technology and efficiency (Aldaba 2000,1; Aldaba 2007, 41).

In these circumstances, the government's plan – before the 1997 financial crisis came on to the horizon – was to implement in 2004 a uniform 4% tariff (in the event, 5%) on both CKD kits and CBU vehicles under the ASEAN Free Trade Area (AFTA), which would greatly reduce the assemblers' effective protection. This was viewed by the industry with foreboding. There was a sense that the major multinational assemblers might think it might be better to work towards importing more of their vehicles to sell locally, not producing them in the Philippines (Aldaba 1997, 27, 34).

Import substitution and partial liberalisation in Indonesia before the 1997 crisis

Notionally the assembly of vehicles in Indonesia dates back to long before the Second World War, when US General Motors started production in 1928 assembling kits. However, the 'kits' simply were vehicles split into two parts, hardly 'assembly' in the normal sense of the word. Annual output by GM in its 1928 venture was only 6,000 vehicles (Sato 1992), and proper assembly of CKD kits did not start until after the Second World War (Witoelar 1983, 18).

After the Second World War, and political independence in 1949 under the nationalist government of President Sukarno, the GM plant was taken over by a state company, with GM leaving the country in 1955. Subsequently the GM plant was bought by a private company, but in the 1960s production was only around 2,000 vehicles (Hansen 1971). Production expanded

after the military takeover in 1967 by General Soeharto, which opened the economy to foreign investment. Local (often ethnic Chinese) businesses formed joint ventures with multinational automotive companies, including Toyota (Doner 1991). Import substitution policies started with a progressive ban on CBU imports, region by region, from 1969, which had become nationwide by 1974 (Sato 1992, 340-341). In 1976, a MD policy was introduced to increase LC for commercial vehicles (Aswicahyono et al 2000, 215). Japanese producers made investments in local component production, such as engines, but the smaller number of European and American producers found it more difficult to comply (Chalmers 1994).

As in the Philippines, some liberalisation occurred in the 1990s. The ban on importing CBUs was lifted in 1993 as part of policy deregulation measures which also gave tax and import tariff incentives for increased localisation of components. The MD programme was abandoned and, instead, assemblers had choice about what to localise (Aswicahyono et al 2000).

The 1990s also saw Indonesia attempting to establish a short-lived and unsuccessful programme to produce a national car, as a joint venture involving a company of a son of President Soeharto and the Korean automotive producer Kia (Hale 2001). To start, the 'national car' was imported from Kia in Korea, given a Timor brand name and, with its tax and tariff exemptions, sold for about half of the price of a similar Toyota model. As a result, there were protests to the WTO by Japan, the EU, and the US under TRIMs and SCMs (Subsidies and Countervailing Measures) provisions (Nomura 2003, 47, 54–55). The national car company, then ordered by the government to repay its tax and tariff exemptions, went bankrupt in 2001.

*The 1997 and 2008 financial crises and the automotive industries of the Philippines and Indonesia*²⁰

As shown in Figures 1 and 2, the 1997 Asian financial crisis hit both countries' automotive production very hard, especially Indonesia, as it also did in Thailand where the crisis originated (Natsuda and Thoburn 2013). In the Philippines vehicle sales between 1996 and 1998 more than halved, and vehicle production fell to less than a third. In Indonesia, both sales and production in 1998 were less than a fifth of their 1996 level. In the Philippines sales recovered gradually, not reaching the 1996 peak until the end of the 2000s, and production fluctuated around only half of the country's 1996 peak production as import penetration rose steeply in the 2000s. What is also striking from the diagrams is that Indonesia's production and sales had both recovered by the early 2000s and then – apart from relatively small troughs in 2006 and again after the 2008 financial crisis - grew rapidly in tandem, indicating no rise in net imports.

As Figure 6 shows, the Philippines' automotive exports, consisting almost entirely of components, rose steadily from around \$500 million in 1997 to over \$2 billion by 2008 at the 2008 world financial crisis. though with a substantial short-term dip thereafter. After a brief recovery they were down to \$1.3 billion in 2015-16. However, exports of wiring harnesses - mainly for vehicles but classified in the trade data, as noted earlier, as *electrical* rather than *automotive* products - rose through the 2010s reaching \$2 billion.

Stimulated originally by the Philippines government's requirements for assemblers to earn part of their own foreign exchange for component imports, automotive component exports continued to increase despite these requirements being outlawed by the WTO from the 2000s (see next section). Exports of vehicles, though, remained negligible.

In Indonesia (Figure 7), in contrast, total automotive exports rise to about \$1 billion for the first time in 2004, and the total had reached the almost \$6 billion level by 2016 (or not far below

7\$ billion if wiring harnesses are included). Vehicle exports (mainly passenger cars) generated nearly half the total automotive export earnings (excluding wiring harnesses). If wiring harnesses are added, total vehicle component exports from the Philippines (\$3.3 billion) were a little larger than Indonesia's (\$2.8 billion), although ordinary automotive component exports (HS 8708) from the Philippines have fallen somewhat in the 2010s.

While the Philippines automotive components exports (HS8708) rose steadily in the period between the 1997 and 2008 crises, the exports of both components and vehicles from Indonesia appear to grow only following the post-2004 implementation of AFTA tariff cutting in the member countries. In Indonesia, despite a massive depreciation of the Indonesian *rupiah* during the 1997 crisis, it is hard to see any sharp stimulus to exporting of the sort experienced in Thailand when Thailand's producers faced a depressed domestic market after 1997 (Natsuda and Thoburn 2013, 427).

5. Trade liberalisation under the WTO and AFTA in the 2000s and beyond

In the Philippines, tariffs²¹ on passenger vehicles were reduced from 40% in the early 1990s to 30% in 2000, and were still at 30% in 2004 when the tariff applying to intra-ASEAN trade under AFTA was reduced to 5%, and to zero in 2010. LCRs were abandoned in 2003 under WTO-TRIMs (Aldaba 2008, 6) and foreign exchange balancing requirements – the requirements in the Philippines for assemblers to earn part of their own foreign exchange to import CKD kits – had also been abolished by then (Natsuda and Thoburn forthcoming). In 2002 the Philippines' tariffs both on passenger cars, commercial vehicles and on their CKD kits were already the lowest (with one minor exception)²² among the four main ASEAN automotive producers (Ofreneo 2008, 73). Nevertheless, as Figure 1 clearly shows, the gap

between total sales and total production of vehicles - indicating net imports – only started to widen sharply from 2004, when the tariff on intra-ASEAN trade was reduced to 5%, and to widen still further once AFTA tariffs fell to zero in 2010.

Indonesia also reduced its import duties on imports from ASEAN to between zero and 5% in 2003-2004 (Natsuda et al 2015a, 65), whilst maintaining MFN tariffs of 45-80% on passenger cars and 40- 45% on commercial vehicles (Ofreneo 2008, 73). However, unlike the Philippines after the onset of the AFTA tariff reductions, net vehicle imports into Indonesia did not rise and in most years were zero (with imports matching exports), while when domestic sales fell in 2014, production rose to generate net exports (Figure 2). These differences in relative trade performance do not appear to have been driven by any changes in the two countries' relative exchange rates.²³ Under pressure from the International Monetary Fund (IMF) after borrowing from them following the 1997 financial crisis, Indonesia abandoned its LCRs.

6. Escaping from difficulties

The difficulties

The widely-cited study by Aswicahyono et al (2000) of Indonesian automotive development up to the late 1990s as an example of 'how not to industrialize' focuses on several features of the industry. These included the large number of assemblers and models in relation to the then size of the market, with the resulting failure to achieve economies of scale. They contrast this with the country's more efficient motorcycle industry based on a larger market and much smaller number of assemblers. They also highlight the high levels of trade protection - Hill (2000, 114) cites ERPs on motor vehicles in Indonesia in the late 1980s of between 499% and 600% - with its associated rent-seeking, political influence and corruption in the years up to the 1997 crisis. They comment unfavourably that the industry has exhibited what they call

‘back to front’ industrialisation. That is, assemblers have set up in business using largely imported components, whereas a better way, they say, would have been to develop component production first and delay assembly until there was a better supplier base. Most of these criticisms also could be applied to the Philippines – many assemblers and models in a small market, high levels of protection at various stages in the industry’s development, and a ‘back to front’ starting method.

With regard to the ‘back to front’ approach of both countries - and leaving aside that this is how most developing countries have started their motor industries - a ‘components first’ approach has some problems. Although the local production of some components, such as tyres or batteries, could be started for the replacement market for imported vehicles, most major components are not usually replaced during a vehicle’s life. Some components, such as engines, have even larger economies of scale than assembly (Natsuda et al 2015a, 48), and so must rely on exports, although there are many components which are not subject to large economies of scale (Rasiah 2007, 65). Both Indonesia and the Philippines have developed component exports. In the Philippines case their output is far too large to be absorbed by the motor industry, whose production has remained small. For example, the wiring harnesses produced by Yazaki-Torres, founded in 1973, are said to be enough for nearly a million vehicles, and only about 5% of this output is sold within the Philippines.²⁴ Successful production of a limited range of components is no guarantee of developing a successful automotive assembly industry. Thus, Taiwan, one of the Asia’s most successful exporters of components, has small and stagnating vehicle production (Table 2). In 2016 Taiwan exported components (HS 8708) of US\$3.9 billion, but passenger vehicles (HS 8703) of only \$873 million and commercial vehicles (HS 8704) of only \$23 million.²⁵

In our interviews in the Philippines a striking feature was the widespread belief that the Philippines had liberalized its trade regime prematurely, while other ASEAN countries had maintained protection on their automotive sectors and resisted the degree of import penetration experienced by the Philippines. This point also has been put forcibly with regard to the Philippines economy as a whole by Ofreneo (2015). He argues that the Philippines switched from ISI policies towards export oriented one during the period from the late 1970s to the 1990s under pressure from the International Monetary Fund and from the World Bank's structural adjustment programmes (SAPs); though Fford (2009, 165) claims this was resisted in the late 1970s by the Filipino technocrats. Ofreneo also criticises the Philippines for opening its economy without making serious attempts at industrial upgrading, although some authors argue there has been little upgrading even in Thailand, ASEAN's most successful automotive exporter (Doner and Wad 2014; Lauridsen 2009).

What evidence is there that the Philippines opened its automotive economy prematurely to imports? Ofreneo says that liberalisation began with the SAP in 1979-80 agreed with the World Bank and the International Monetary Fund. Under SAP, automotive tariffs were reduced, with car tariffs reduced to 70% (Ofreneo 2008, 71-72). However, since commercial imports of CBUs were banned until 1995, these tariffs only applied to small numbers of personal imports.²⁶ Focussing on tariffs after the ban on imported vehicles was lifted in 1995, when tariffs stood at 40%, there was an immediate but small surge in net imports, as Figure 1 shows. This small gap between domestic sales and production continued but did not increase much until intra-ASEAN tariffs fell to 5% in 2004 under AFTA. The smallness of the gap perhaps reflects the fall in domestic costs implied by the difference between Aldaba's 1997 estimate, mentioned earlier, of a differential between local vehicles and imports from Japan of 2.37 to 3.68 fold, and her 2008 estimate of a 1.14 fold excess in cost of a Philippines-produced vehicle

compared to one imported from Thailand.²⁷ But when the intra-ASEAN tariff fell to only 5% in 2004 under the implementation of AFTA, a major and continually increasing surge in net imports occurred, with domestic production actually falling to around 50,000 and thereafter not increasing to much above its 2004 level.

The Philippines has had an additional kind of import competition too – from second hand vehicles, principally from Japan and Korea.²⁸ Such vehicles have been transferred illegally from the countries Freeports, principally Subic Bay, into the domestic economy. Attempts by the government to legislate against this problem encountered opposition from powerful sectional interests (Ofreneo 2016) and such imports remained a problem – a clear example of state failure - with perhaps some 20% of registered vehicles in the mid-2010s being illegally imported.

Other policy issues

One major difference between the Philippines and more successful producers, particularly Thailand but to some extent Indonesia, is that the Philippines has not tried to use tax policy (particularly differential excise taxes) to promote local demand for locally popular kinds of models like Thailand's famous 'product champions', the one-ton pick-up truck and the eco-car or Indonesia's Low-Cost Green Car. Indonesia exempted its LCGC from luxury tax, although it did not give incentives to investors in the way that Thailand did (Natsuda and Thoburn 2013; Natsuda et al 2015a, 65); by 2016 five Japanese manufacturers were producing LCGCs taking 20% of vehicle sales in Indonesia and with high local content (Fourin 2017;63-65) This aspect of automotive policy failure in the Philippines is not due to lack of opportunity. The Commercial Vehicle Development Program in 1987 had as one of its aims to promote the so-

called Asian Utility Vehicle (AUV), a low cost, Philippines-designed light commercial vehicle which could be used to transport passengers. Producers had to achieve a certain LC and to generate a quarter of their own foreign exchange needs. In 1999 Toyota's AUV was the best-selling vehicle in the Philippines, with sales almost double that of its nearest rival, a Honda passenger car. After initially exempting AUVs from excise tax, in 2003 the government imposed an excise tax (Aldaba 2000, 3-4, 11, 21). In the view of two industry key informants in Manila, the rise in excise duty on AUVs in the 2000s by a government short of revenue and seeing the demand for AUVs was high, foolishly choked off demand for the AUV at the same time as other ASEAN countries were developing similar vehicles, which also could be used as taxis. Some manufacturers in the Philippines transferred production to Thailand.²⁹ The problem of lack of incentives of the demand side continues in the new CARS policy. In this regard the Philippines has failed to utilize the 'policy space' still available to automotive producers under the post-2000 WTO trade regime.

The number of assemblers compared to the size of the market in the Philippines is a problem that remains. In 2014 in discussions about a 'roadmap' for automotive development with the government, a figure of 40,000 vehicles annually was mooted by the government as a qualification for getting a \$1,000 subsidy per vehicle (against estimated differences of \$800 - \$2,000 in the cost of local models compared to imports). At that time the largest producer, Toyota, was said to be producing annually two models totalling 30,000 together and working at full capacity, although full-capacity operation did not characterise most of the other assemblers. With 15,000 per model, it was thought difficult to expand production to 40,000 unless several models could be produced with a common platform.³⁰ Low production volumes also made it difficult for assemblers in the Philippines to encourage their Japanese component suppliers to establish production in the country (JETRO, Manila, interview 5 February 2015).

The Philippines' CARS Comprehensive Automotive Resurgence Strategy was announced in 2015 following the earlier government-industry 'road map' discussions.¹ Under this plan, by 2022 the aim is to reach annual domestic production of approximately 500,000 vehicles, 350,000 of which will be for the domestic market and about 150,000 for export. This would raise the domestic market share of local production to 70% (Llanto and Ortiz 2015, Ofreneo 2016, Sturgeon et al 2016). CARS is confined to three models – with a range of fiscal incentives and measures including regulatory reform and the streamlining of registration.³¹ These measures under CARS do not include Thai or Indonesian-style use of tax policy to stimulate local demand. However, a senior official of the Department of Trade and Industry in Manila indicated that their Ministry hopes to change the system for excise tax approval under CARS away from the present need to secure Congressional permission to one where changes can be made by Executive Order.³² Clearly the likely success of CARS depends heavily on how the existing assemblers in the Philippines, predominantly Japanese, respond in terms of their division between production for the domestic market, importing their own models from countries such as Thailand, or, ultimately, exporting. In this context, there are some signs of the assemblers' increasing commitments to the Philippines as a result of CARS (Natsuda and Thoburn forthcoming), including by Mitsubishi's production start in 2017, and Toyota's new production plan in 2018 (Fourin 2017: 104).

7. Conclusions

The Philippines automotive production has lagged behind Indonesia' to an extent that cannot be explained by differences in market size. Although Indonesian automotive policy in the 1990s was criticised as inappropriate (Aswicahyono et al 2000), by the end of the 1990s

Indonesia was developing vehicle exports – a key indicator of international competitiveness - while the Philippines suffered from substantial net import penetration from the early 2000s. Both countries, however, did develop substantial exports of automotive components.

What role did industrial policy, including trade-related industrial policy, play in these outcomes?

In terms of import protection, many industry sources we have interviewed in the Philippines believe that the country opened its economy prematurely - automotive tariffs in the Philippines in the 1990s and early 2000s were generally lower than in other ASEAN producers. Yet the big surge in imports into the Philippines did not occur until the dropping of the intra-ASEAN tariff to 5% in 2004 under AFTA (and to zero in 2010). Since the increase in (official) imports from the end of the vehicle import ban in 1995 until 2004 was not large and did not continually increase, it does not suggest that tariffs were dangerously low - although the problem of illegal second hand car imports lurked in the background, aggravated by the Philippine's weak state capacity to implement its own policies.

What were the other differences in policy? The policies between the Philippines and Indonesia, and indeed compared to other ASEAN producers, were broadly similar in the sense that the industries started with import substitution backed by import bans, and later high effective rates of tariff protection when bans were removed, together with LCRs and MD policies to encourage local component production. In both countries there were attempts at liberalisation in the 1990s, and by the 2000s LCRs and MD policies had been abandoned under pressure from the WTO.³³ The Philippines' foreign exchange earning requirements placed on assemblers can be seen as one of the country's few automotive policy successes, leading to component exports, particularly of transmissions, which continued even after the requirements were abandoned, along with LCRs, as TRIMs-non-compliant. Wiring harness exports from the

Philippines, though, seem less to do with those foreign exchange earning requirements and more to do with basic labour-intensity and locally-available skills; and unlike the intra-regional exports of transmissions, they are mainly to developed countries outside ASEAN.³⁴ Component exports (if wiring harnesses, an electrical item, are included), however, are only slightly larger than Indonesia's (\$3.3 billion compared to \$2.8 billion), while Indonesia also exports vehicles in significant numbers, which the Philippines does not. The Philippines started an Automotive Export Program in 2003 but Ford was the only participant, and Ford subsequently quit the Philippines in 2012, shifting its production to Thailand.

Unlike Indonesia, the Philippines did not attempt to develop a national car, but Indonesia had to abandon its attempt very quickly under international pressure. For neither country, then, has a national car project been the sort of drag on automotive development that it has been in Malaysia (Natsuda et al 2013).³⁵

Although, as Rasiah (2009, 152) notes, Indonesia in the 2000s 'abandoned' industrial policy in the sense of trade-related investment measures under the WTO, other policy differences affected automotive industrialisation. An important difference is that, unlike Indonesia with its Low Cost Green Car (and certainly compared to Thailand's 'product champion' policies for one-ton pick-up trucks and eco-cars), the Philippines did not use demand-side (excise tax) incentives to promote chosen classes of vehicles; incentives were confined to producers. Worse, the Philippines in the early 2000s had the chance to use its Asian Utility Vehicle, selling well domestically, as a local 'product champion' but instead chose to use it to raise additional tax revenue, thus failing to use the 'policy space' still available under the WTO (Natsuda and Thoburn 2014).

Differences in performance, though, cannot simply be traced to differences in industrial policy. Interviews in Indonesia with Japanese automotive assemblers revealed that they see policy incentives as less important than market size and market growth, although, of course, very negative policies towards foreign assemblers – which they see in Malaysia in its attempts to promote its national car Proton in relation to foreign vehicles – can be important as a disincentive. However, and as we have observed, while recent market growth in Indonesia has not been accompanied by significant rises in net imports, the Philippines shows a well-established trend – perhaps now difficult to break - of market growth being met by imports. Indeed, Indonesia has already started to export its LCGC models to the Philippines (Natsuda et al 2015b), feeding the lower middle class market. Even these assemblers who argued that market growth was more important than preferential policies in inducing them to expand, also commented unfavourably on the lack of stability in the Philippines policy towards the automotive industry, particularly if policies changed over the life of a new model (which is 6 – 8 years).

Nevertheless, the issue of *policies vs market growth* is an important caveat to the idea that industrial policies, more coherently organized and more effectively implemented, can deliver a measure of success. Fforde's (2009) arguments that similar policies, even if consistently applied, may have different effects in different countries according to their economic and social inheritances – and that policy 'blueprints' are dangerous - are worth remembering too.

TABLES AND FIGURES

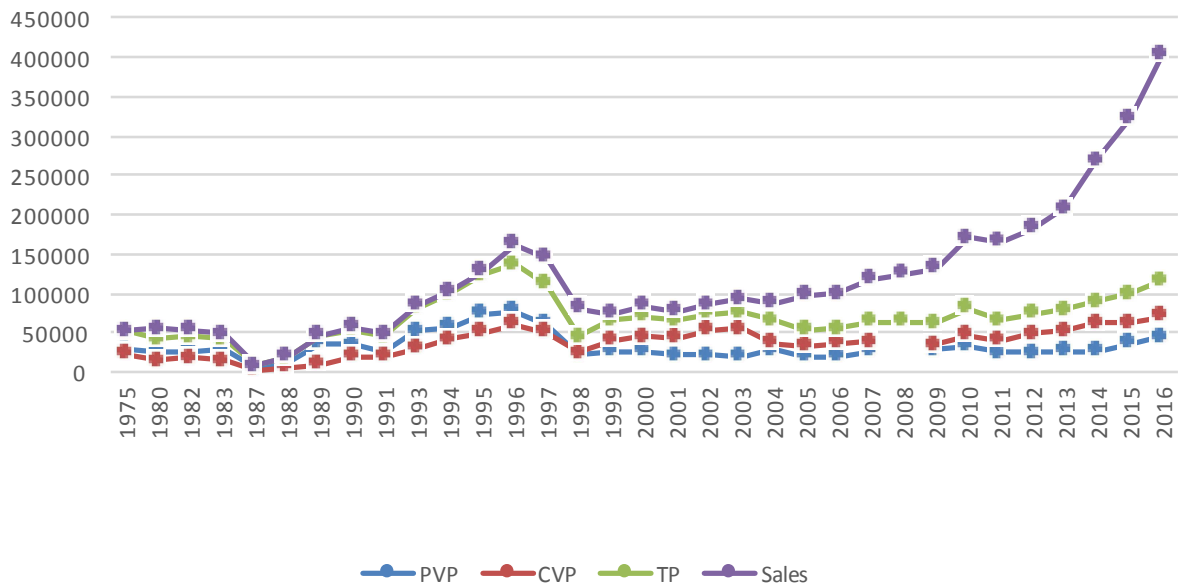
Table 1 Incomes per head, population, and growth in ASEAN Automotive Producers, 2016							
	Total GNI		Population	GNI per capita		2015	2016
	<i>US\$</i>	<i>US\$</i>	<i>(million)</i>	<i>US\$</i>	<i>US\$</i>	<i>GDP growth</i>	<i>GDP growth</i>
	<i>(billion)</i>	<i>(billion, PPP)</i>			<i>(PPP)</i>	<i>% per capita</i>	<i>% per capita</i>
Indonesia	889	2,929	261.1	3,400	11,220	3.5%	3.8%
Philippines	370	971	103.3	3,580	9,400	4.3%	5.3%
Thailand	388	1,107	68.9	5,640	16,070	2.5%	2.9%
Malaysia	307	839	31.2	9,850	26,900	3.5%	2.7%
Vietnam	191	561	92.7	2,050	6,050	5.5%	5.1%
Source: wdi.worldbank.org/table/WV.1, accessed 14 July 2017							

Table 2 Total Vehicle Production, 2000 and 2016					
	2000	2016	2016/2000	2014-5	2015-6
	numbers of vehicles		ratio	growth	growth
Indonesia	292,710	1,177,389	4.02	-15.4%	7.2%
Philippines	41,840	135,840	3.25	5.2%	20.8%
<i>ASEAN Comparators</i>					
Thailand	411,721	1,944,417	4.72	1.9%	1.8%
Malaysia	282,830	513,445	1.82	3.3%	-16.5%
Vietnam	6,862	66,030	9.62	2.3%	32.1%
<i>Other Comparators</i>					
UK	1,813,894	1,816,622	1.00	5.2%	8.0%
Germany	5,526,615	6,062,562	1.10	2.1%	0.5%
USA	12,799,857	8,263,780	0.65	3.8%	0.8%
Japan	10,140,796	9,204,590	0.91	-5.1%	-0.8%
South Korea	3,114,998	4,228,509	1.36	0.7%	-7.2%
Taiwan	372,613	309,531	0.83	-7.4%	-11.8%
India	801,360	4,488,965	5.60	7.3%	7.9%
China	2,069,069	28,118,794	13.59	3.3%	14.5%
World	58,374,162	94,976,569	1.63	1.1%	4.5%
Sources and Notes : OICA Production stats (except Philippines and Vietnam) from http://www.oica.net/category/production-statistics/ ,					
Philippines and Vietnam from http://www.oica.net/wp-content/uploads//Total-2016.pdf ,					
both accessed 15 July 2017					
'World' statistics exclude some commercial vehicle production for a small number of non-reporting countries and a few makes of cars are excluded from the country statistics. Philippines 2014-5 growth rate is based on a 2014 output of 106,938 units; this figure is contentious, however. The OICA website also gives a figure of 77,628 units for 2014. There is also a figure for 2014 of 86,218 from Philippines Chamber of Automotive Manufacturers					
(interview 6 February 2015), and 86,218 is cited for 2014 by Fourin (2015)					

Indonesia	87
Philippines	38
ASEAN Comparators	
Thailand	228
Malaysia	439
Vietnam	23
Other Comparators	
UK	587
Germany	593
USA	821
Japan	609
South Korea	417
Taiwan	373
India	22
China	118
World	182
Source : http://www.oica.net/wp-content/uploads//total-inuse-2015.pdf accessed 14 July 2017	

	Number of assembly plants	Number of parts suppliers	Employment in Assembly and Parts
Indonesia	20	1550	445,000
Philippines	11 (16)	256	66,800
ASEAN comparators			
Thailand	16	2390	525,000
Malaysia	11	550	250,000
Vietnam	20	300+	n/a
Sources and Notes : from Fourin (2015) and CAMPI for the Philippines; Vietnam data from interviews, 2015 According to the Department of Trade and Industry, Manila, interviewed 13 February 2015, there are 16 assemblers in terms of licencing but not all are active Fourin (2017) gives only comparable updated figures for Thailand , which increase assemblers numbers to 18, decrease parts suppliers to 1599 and leave employment the same. Fourin's (2017) figures for Malaysia included motor bicycles and are not comparabe			

Figure 1 Vehicle Production and Sales, Philippines, 1975-2016

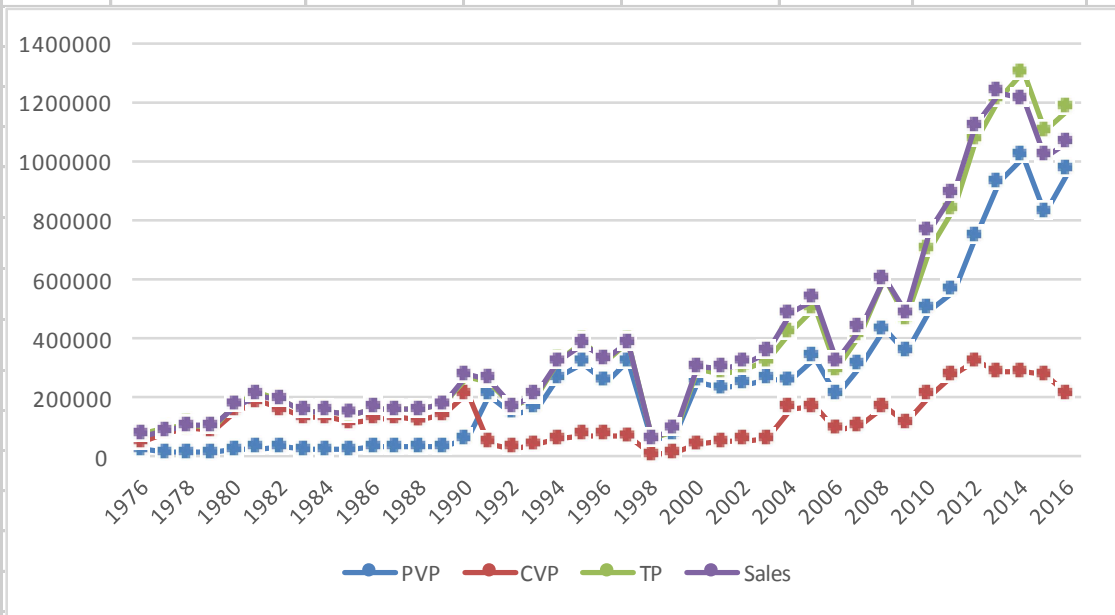


Source: data from Fourin (various years)

Notes: PVP = passenger vehicles production; CVP = commercial vehicles production; TP = total Production; Sales = total domestic sales. Units are numbers of vehicles.

Figures for 1976-9 missing, so we include 1975

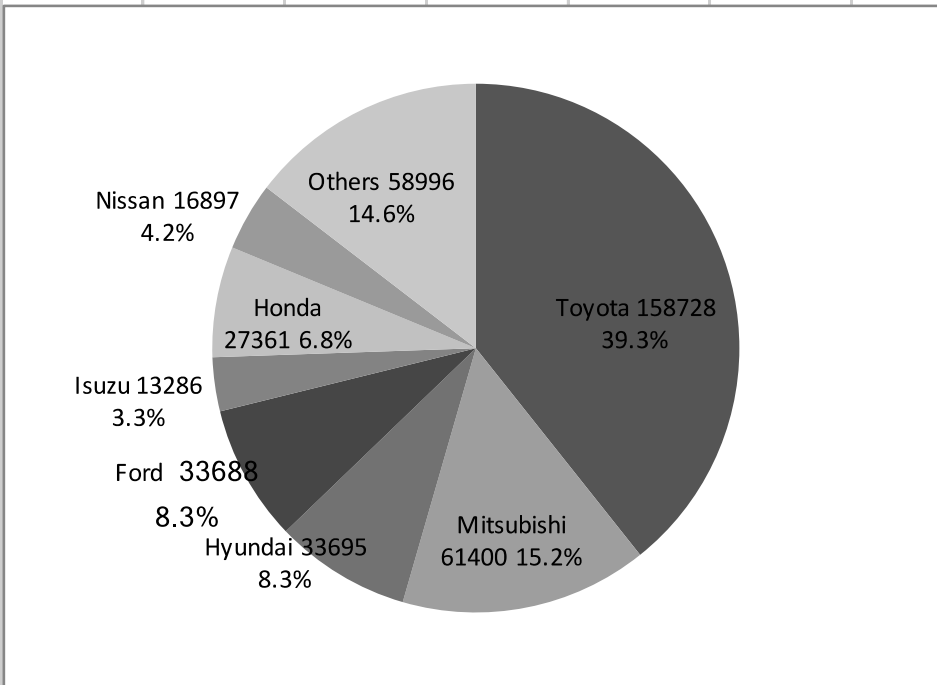
Figure 2 Vehicle Production and Sales, Indonesia, 1976-2016



Source : Fourin (various years)

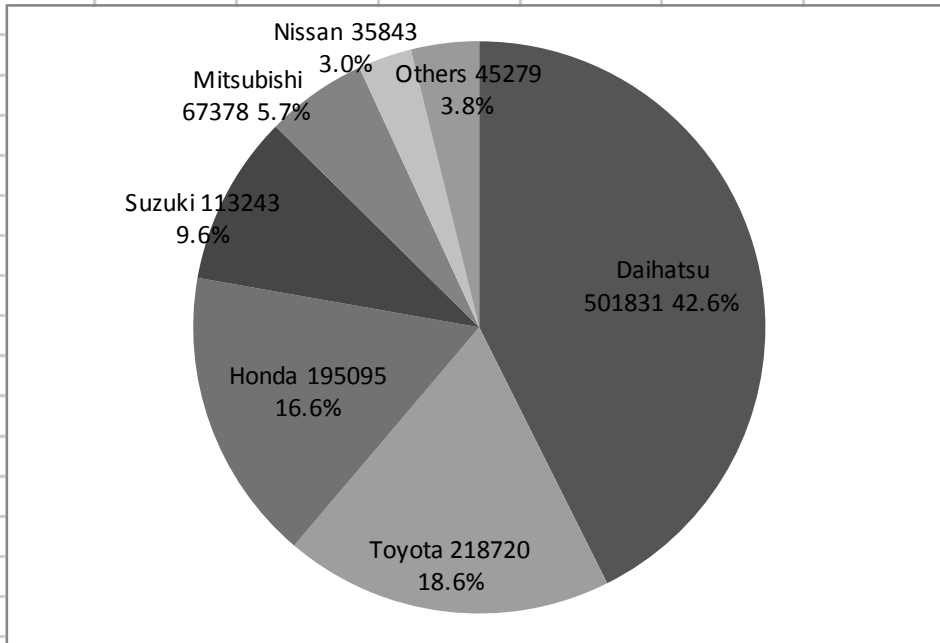
Notes : PVP = passenger vehicles production; CVP = commercial vehicles production; TP = total Production; Sales = total domestic sales. Units are numbers of vehicles.

Figure 3 Sales Shares of Major Automotive Brands in the Philippines



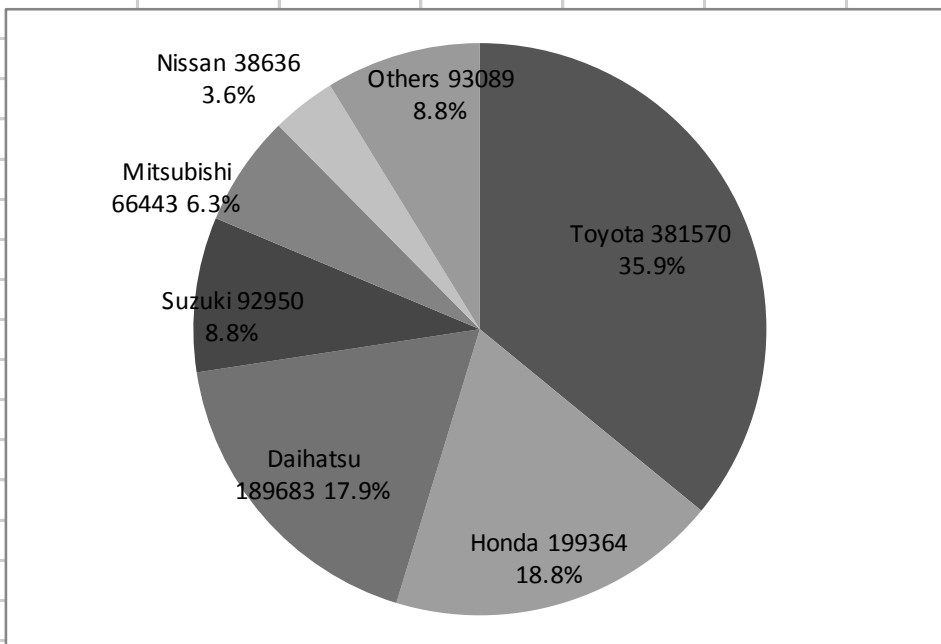
Sources and Notes : data from Fourin (2017). Shares are in terms of numbers

Figure 4 Production Shares of Major Assemblers, Indonesia, 2016



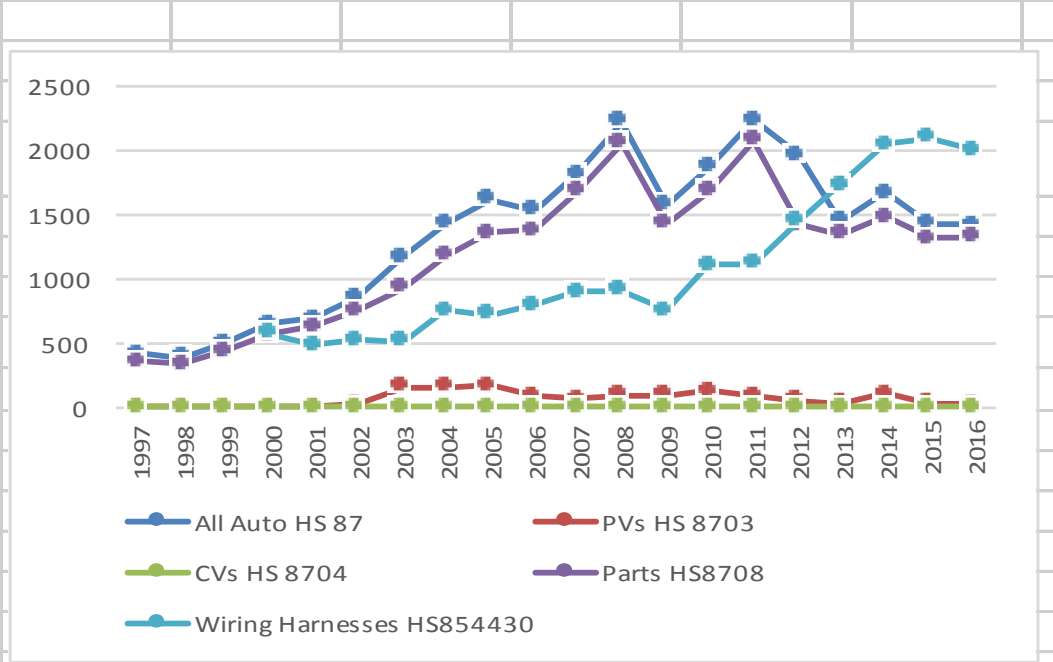
Source and Notes : data from Fourin (2017). Shares are in terms of numbers of vehicles

Figure 5 Sales Shares of Major Automotive Brands, Indonesia, 2016



Sources and Notes : data from Fourin (2017). Shares are of numbers of vehicles

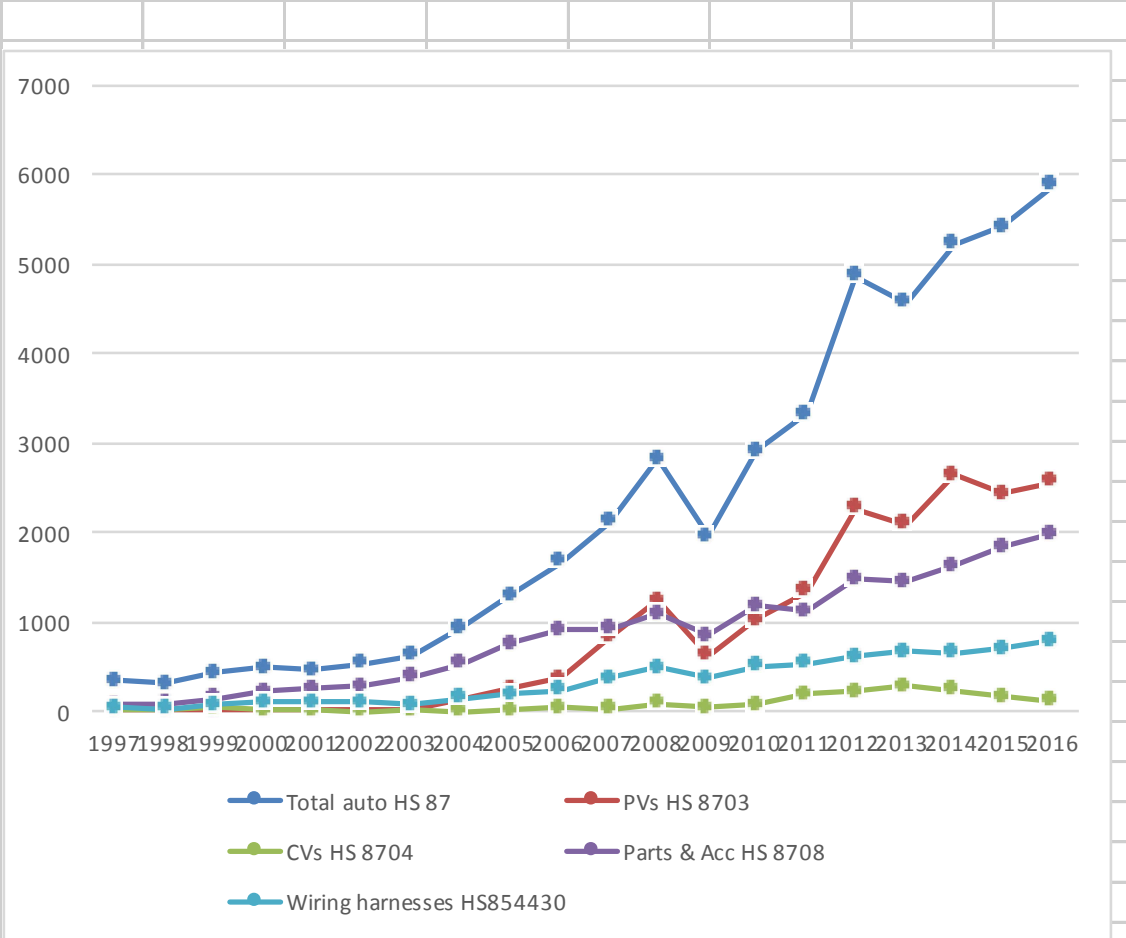
Figure 6 Philippines Automotive Exports and Wiring Harnesses (\$mil)



Source : from Global Trade Atlas Database

Note s: United Nations Harmonized System (HS) codes – HS 87 all automotive; HS 8703 passenger vehicles except buses; HS 8704 commercial vehicles; HS 8708 automotive parts and accessories
HS 854430 are wiring harnesses for vehicles, ships and aircraft

Figure 7 Indonesian Automotive Exports and Wiring Harnesses (\$mil)



Source : Global Trade Atlas Database

Notes : United Nations Harmonized System (HS) codes – HS 87 all automotive; and accessories

HS 8703 passenger vehicles except buses; HS 8704 commercial vehicles;

HS 8708 automotive parts and accessories

HS854430 are wiring harnesses for vehicles, ships and aircraft

¹ It is worth noting here, though, that Rasiah (2007, 58-9) records that in 2001 the ‘embedded infrastructure’ that forms a background to enhance domestic technological capacity was slightly stronger in the Philippines than Indonesia in terms of basic technological infrastructure (including literacy and telephone network density as proxies), and much stronger than Indonesia’s (and almost as good as Thailand’s) in high-tech infrastructure (mainly R&D activities and support). These factors do not appear to have had a strongly positive effect on automotive development in the Philippines.

² And also the special case of Malaysia (Natsuda et al 2013).

³ See, for example, Natsuda, Otsuka and Thoburn, (2015a, 49-51) and Natsuda and Thoburn, (forthcoming); also Gereffi, (2014).

⁴ Economies of scale are associated with the minimum efficient size of *plant*. This can vary according to the degree of vertical integration, though that now is usually very low, with perhaps 30% of the value of a car represented by assembly. MES usually is thought to vary from about 40,000 vehicles a year to 2-300,000, and is considerably larger for some components like engines, see for example Natsuda et al (2015a, 48, 61); Wells (2015, 212); and on car manufacturing processes more generally Nieuwenhuis (2015). The minimum size of *firm* is much larger than that of an assembly plant because of the economies of scope needed for the massive R&D costs of developing new models. Nolan(2012, 25) puts it as high as 5 million vehicles a year for a global mass market assembler.

⁵ A case could be made that Vietnam, in terms of its current output, is less successful than the Philippines. However, Vietnam only started to reform its economy in the late 1980s and since then it has expanded its automotive production very rapidly from a low base. See Hansen 2016) and Thoburn and Natsuda (2017).

⁶ Such relocations have also been motivated by a need to avoid trade disputes, eg past Japanese relocations to the USA) and to get inside trade barriers, eg by companies to get inside high tariff walls in ASEAN and China).

⁷ *Jakarta Post*, 14 July 2016 , <http://www.thejakartapost.com/news/2016/01/27/indonesia-see-limited-growth-car-sales-industry-association.html> (accessed 14 July 2016), and <http://www.indonesia-investments.com/business/industries-sectors/automotive-industry/item6047?> (accessed 6 March 2017).

⁸ Remember, though, as indicated in the Notes to Table 2, that the 2014 output figures for the Philippines are cited quite differently in different sources.

⁹ Although the data are available for Indonesia, production data by each assembler are not available in Fourin (2015) for the Philippines, so a pie chart for the Philippines production could not be made.

¹⁰ Since domestic sales = domestic production + imports – exports, then domestic sales – domestic production = imports – exports (that is, net imports).

¹¹ Exports of other HS 87 subcategories are negligible and are not shown on the diagram.

¹² According to an interview with the Department of Trade and Industry in the Philippines, 13 February 2015), there are actually 16 assemblers licenced to operate, but a smaller number, (11) actually do so, (see Table 4).

¹³ Interview with Philippines Chamber of Automotive Manufacturers of the Philippines, (CAMPI), 22 February 2014

¹⁴ However, for expositional convenience, we discuss in this section the effects of the 2008 global financial crisis in comparison with the 1997 Asian crisis.

¹⁵ This subsection, and our later discussions of the Philippines' automotive history, draw heavily on four papers by Rafaelita Aldaba (1997, 2000, 2007, and 2008). Also very useful is Ofreneo (2008).

¹⁶ It is worth commenting here on the apparently paradoxical fact that while the CBU import ban was in force from 1950 to 1995 tariff rates on CBUs were still posted. This arose because the ban was only on *commercial* imports of CBUs. Some special categories of personal imports of vehicles – for example on behalf of Filipinos working overseas – were allowed, and were liable for tariffs (Aldaba 1997, 18-19).

¹⁷ Interview with Motor Vehicle Parts Association of the Philippines (MVPMAP), 26 February 2014.

¹⁸ Interview with Motor Vehicle Parts Manufacturers Association of the Philippines (MVPMAP), 26 February 2014

¹⁹ On ERP, see Greenaway and Milner (1993,79-80)

²⁰ For more on the crises, see Doner and Wad (2014).

²¹ See Aldaba (2008, 6) for a table listing all the automotive tariffs, both MFN and AFTA from 1988 to 2004.

²² With the one exception that the Malaysian tariff on commercial vehicle CKDs was zero while the Philippines' was 3%.

²³ The real effective exchange rate of the Philippines appreciated from the early 2000s but that of Indonesia appreciated more. See <http://data.isdb.org/pxfdrcg/world-bank-development-indicators-wdi-2017-idb-aggregates?tsId=1121020>, accessed 21 July 2017

²⁴ Interview with PACCI, 18 February 2014

²⁵ For Taiwan trade statistics, which are not shown in the UN Comtrade data base, see <http://cus93.trade.gov.tw/>.

²⁶ Figures cited in Aldaba (1997, 19) show that total annual imports of passenger cars from 1990 to 1994 were only in the range of approximately 4,000 to 6,000 units.

²⁷ A major Japanese motor manufacturer interviewed in the Philippines in February 2014 thought the cost of locally assembled vehicles was still about 10% higher than imports.

²⁸ For more details, see Natsuda and Thoburn (forthcoming).

²⁹ Interview with MVPMAP, 26 February 2014; with Philippines Automotive Competitiveness Council (PACCI), 18 February 2014

³⁰ Interview with CAMPI, 22 February 2014

³¹ For more details on CARS, see Natsuda and Thoburn (forthcoming).

³² Interview 13 February 2015.

³³ Note, though, that since much of both countries' automotive trade is within ASEAN, LC rules have been reintroduced in the sense that trade preferences under AFTA are subject to ASEAN rules of origin requirements, specifying a minimum ASEAN content of 40%, (Ofreneo 2008, 78).

³⁴ In 2016, 41% of exports of HS 854430 (mainly wiring harnesses) were to Japan, 44% to North America, and only 5% to Thailand, the largest ASEAN destination. (comtrade.un.org/db, accessed 26 July 2017).

³⁵ Although there have been signs that Indonesia's new president wants to try again (Natsuda et al 2015b)

References

Aldaba, Rafaelita, 1997. *Micro Studies: Philippine Car Assembly Sector*, Discussion Paper Series No.97-21, Philippine Institute for Development Studies.

Aldaba, Rafaelita, 2000. *Increasing Globalization and AFTA in 2003: What are the Prospects for the Philippine Automotive Industry?*, Discussion Paper Series No.2000-42, Philippine Institute for Development Studies.

Aldaba, Rafaelita, 2007. *Assessing the Competitiveness of the Philippine Auto Parts Industry*, Discussion Paper Series No.2007-14, Philippine Institute for Development Studies.

Aldaba, Rafaelita, 2008. *Globalization and the Need for Strategic Government-Industry Cooperation in the Philippine Automotive Industry*, Discussion Paper Series No.2008-21, Philippine Institute for Development Studies.

Altenburg, Thomas, and Wilfried Lütkenhorst, 2015. *Industrial Policy in Developing Countries: Failing Markets, Weak States*, London: Elgar

Aoki, Katsuki, 2015. 'Labour Relations and HRM in the Automotive Industry: Japanese Impacts', in Paul Nieuwenhuis, and Peter Wells, (eds), *The Global Automotive Industry*, Chichester: Wiley 83-94

Aswicahyono, H, M.C. Basri, and Hal Hill, 2000. 'How Not to Industrialise? Indonesia's Automotive Industry', *Bulletin of Indonesian Economic Studies*, 36(1), 209-241.

Chalmers, Ian, 1994. 'Domestic Capital in the Evolution of Nationalist Auto Development Policy in Indonesia: From Instrumental to Structural Power', Perth: Murdoch University Press, Asia Research Centre Working Paper 30

Chang, Ha-Joon, 2013. 'Comment on 'Comparative Advantage: the Silver Bullet of Industrial Policy' ', in Stiglitz, Joseph E, and Justin Y. Lin (eds). *The Industrial Policy Revolution I: The Role of Government Beyond Ideology*, London: Palgrave Macmillan, 39-43

Doner, Richard, 1991. *Driving a Bargain: Automobile Industrialization and Japanese Firms in Southeast Asia*. Berkeley, CA: University of California Press.

Doner, Richard, and Peter Wad, 2014. 'Financial Crises and Automotive Industry Development in Southeast Asia', *Journal of Contemporary Asia*, 44(4), 664-687.

Fforde, Adam, 2009. *Coping with Facts: A Skeptic's Guide to the Problem of Development*, Sterling VA: Kumarian Press

Fourin, 1994, 1999, 2008, 2011. *Ajia Jidosha Sangyo*, Asian Automotive Industry. Nagoya: Fourin.

Fourin, 2015, 2017. *ASEAN Jidosha Sangyo*, (ASEAN Automotive Industry), Nagoya: Fourin.

Gereffi, G., 2014. 'Global Value Chain Analysis in a Post-Washington Consensus World', *Review of International Political Economy*, 21(1), 9-37.

Greenaway, David and Chris Milner, 1993. *Trade and Industrial Policy in Developing Countries*, London: Macmillan.

Hansen, Arve, 2016. 'Driving Development? The Problems and Promises of the Car in Vietnam', *Journal of Contemporary Asia*, 46(4), 551-569.

Hansen, John R., 1971) 'The Motor Vehicle Industry', *Bulletin of Indonesian Economic Studies* 7, 2), 38-69.

Hill, Hal, 2000) *The Indonesian Economy*, Cambridge: Cambridge University Press, second ed..

Humphrey, John and Olga Memedovic, 2003. *The Global Automotive Industry Value Chain: What Prospects for Upgrading by Developing Countries*, Vienna: United Nations Industrial

Lauridsen, Laurids S., 2009. 'The Policies and Politics of Industrial Upgrading in Thailand During the Thaksin Era, 2001–2006)', *Asian Politics and Policy*, 1(3). 409–434.

Llanto, Gilberto and Ma Kristina Ortiz, 2015. *Industrial Policies and Implementation: Philippine Automotive Manufacturing as a Lens*, Discussion Paper Series No.2015-39, Philippine Institute for Development Studies.

Milberg, William, Xiao Jiang, and Gary Gereffi, 2014. 'Industrial policy in the era of vertically specialized industrialization', in José M. Salazar-Xirinachs, Irmgard Nübler and Richard Kozul-Wright (eds), *Transforming economies: Making industrial policy work for growth, jobs and development*, Geneva: International Labour Office, 151-178

Natsuda, Kaoru, and John Thoburn, 2013. 'Industrial Policy and the Development of the Automotive Industry in Thailand', *Journal of the Asia Pacific Economy*, 18(3), 413-437.

Natsuda, Kaoru, and John Thoburn, 2014. 'How Much Policy Space Still Exists Under the WTO? A Comparative Study of the Automotive Industry in Thailand and Malaysia', *Review of International Political Economy*, 21(6), 1346-1377.

Natsuda, Kaoru, and John Thoburn, forthcoming. 'Industrial Policy and the Development of the Automotive Industry in the Philippines', *Canadian Journal of Development Studies*

Natsuda, Kaoru, Kozo Otsuka and John Thoburn, 2015a. 'Dawn of Industrialization: the Indonesian Automotive Industry', *Bulletin of Indonesian Economic Studies*, 51(1), 47-68.

Natsuda, Kaoru, Kozo Otsuka and John Thoburn, 2015b. 'Indonesia's Automotive Industry Shifts up a Gear', <http://www.eastasiaforum.org>, 22 May 2015.

-
- Natsuda, Kaoru, Noriyuki Segawa and John Thoburn, 2013. 'Liberalization, Industrial Nationalism, and the Malaysian Automotive Industry', *Global Economic Review*, 42(2), 113-134.
- Nieuwenhuis, Paul, 2015. 'Car Manufacturing', in Paul Nieuwenhuis and Peter Wells, (eds), *The Global Automotive Industry*, Chichester: Wiley, 41-45
- Nolan, Peter, 2012. *Is China Buying the World?* London: Polity Press
- Nomura, Toshio, 2003. Indonesia Jidosha Sangyo no Kaihokatei, Liberalisation Process of the Indonesian Automotive Industry), *ShoKei Ronshu*, 53, 1-64.
- Ofreneo, Rene E., 2008. 'Arrested Development: Multinationals, TRIMs and the Philippines' Automotive Industry', *Asia Pacific Business Review*, 14(1), 65-84.
- Ofreneo, Rene E., 2015. 'Growth and Employment in de-Industrializing Philippines', *Journal of the Asia Pacific Economy*, 20(1), 111-129.
- Ofreneo, Rene, 2016. Auto and Car Parts Production: Can the Philippines Catch Up with Asia?, *Asia Pacific Business Review*, 22(1), 48-64.
- Rasiah, Rajah, 2007. 'Export-orientation and Technological Intensities in Auto Parts Firms in East and Southeast Asia: Does Ownership Matter?' *Asian Economic Papers* 6 (2):55–76.
- Rasiah, Rajah, 2009. 'Technological capabilities of automotive firms in Indonesia and Malaysia', *Asian Economic Papers*, 8(1): 151168.
- Rodrik, Dani, 2004. 'Industrial Policy for the Twenty-First Century', available at <http://www.hks.harvard.edu/fs/drodrik/Research%20papers/UNIDOSep.pdf>
- Sato, Yuri, 1992. 'The Automotive Industry', in *Indonesia no kogyoka* [Industrialization in Indonesia], edited by Norio Mihara and Yuri Sato, 336–61. Tokyo: Institute of Developing

Economies.

Stiglitz, Joseph E., Justin Y. Lin and Célestin Monga, 2013. 'Introduction: the Rejuvenation of Industrial Policy', in Stiglitz, Joseph E, and Justin Y. Lin, (eds), *The Industrial Policy Revolution 1: The Role of Government Beyond Ideology*, London: Palgrave Macmillan, 1-18

Sturgeon, Timothy, Jack Daly Stacey Frederick, Penny Barber and Gary Gereffi, 2016. *The Philippines in the Automotive Global Value Chain*, Technical Report for USAID, final draft for review), May, Duke University, USA,

[http://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/12484/2016-](http://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/12484/2016-05_Duke%20CGGC%20study_Philippines_Automotive%20GVC.pdf?sequence=1)

[05_Duke%20CGGC%20study_Philippines_Automotive%20GVC.pdf?sequence=1](http://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/12484/2016-05_Duke%20CGGC%20study_Philippines_Automotive%20GVC.pdf?sequence=1), accessed 8 July 2016

Thoburn, John T., 1973. 'Exports and the Malaysian Engineering Industry: A Case Study of Backward Linkage', *Oxford Bulletin of Economics and Statistics*, 35(2), 91-117.

Thoburn, John T., 2016. 'Trade and Industrial Policy for Development', in Mustafa Erdoğan and Bryan Christiansen, eds), *Comparative Economic Perspectives on Europe and the MENA Region*, Hershey, PA: IGI Global, 25-35.

Thoburn, John, and Kaoru Natsuda, 2017. 'Comparative Policies for Automotive Development in Southeast Asia' in Arve Hansen and Kenneth Bo Nielsen, eds), *Cars, Automobility and Development in Asia: Wheels of Change*, London: Routledge, 17-36

Thoburn, John T., and Makoto Takashima, 1992. *Industrial Subcontracting in the United Kingdom and Japan*, Aldershot: Avebury.

UNIDO, 2013. *Industrial Development Report 2013: Sustaining Employment Growth: the Role of Manufacturing and Structural Change*. Vienna: United Nations Industrial Development Organization.

Wad, Peter, 2010. 'Impact of the Global Economic and Financial Crisis over the Automotive Industry in Developing Countries', Vienna: United Nations Industrial Development Organization, Research and Statistics Branch, Working Paper 16/2009, http://www.unido.org/fileadmin/user_media/Publications/Research_and_statistics/Branch_publications/Research_and_Policy/Files/Working_Papers/2009/WP%2016%20Impact%20of%20the%20Global%20Economic%20and%20Financial%20Crisis%20over%20the%20Automotive%20Industry%20in%20Developing%20Countries.pdf

Weiss, John, 2016. 'Industrial Policy: Back on the Agenda', in John Weiss and Michael Tribe, (eds), *Routledge Handbook of Industry and Development*, London: Routledge, 135-150.

Wells, Peter, 2015. 'New Business Models and the Automotive Industry', in Paul Nieuwenhuis and Peter Wells, (eds), *The Global Automotive Industry*, Chichester: Wiley, 209-217

Witoelar, Wirnar, 1983. 'Ancillary Firm Development in the Motor Vehicle Industry in Indonesia', in Konosuke Odaka, (ed) *The Motor Vehicle Industry in Asia: A Study of Ancillary Firm Development*, Manila: Council of Asian Manpower Studies, 17-84.