

ECONOMICS WORKING PAPER

Global Trends and Malaysia's Automotive Sector: Ambitions vs. Reality

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Abstract

The paper seeks to examine the development of the Malaysian automotive sector in the midst of rapid global changes in technology, consumer preferences and sustainability concerns. The sector represents a case of infant industry protection which includes, among its objectives, the state's aspiration to nurture Bumiputera entrepreneurs as national champions for the sector. Despite close to three decades of protection, the two national car projects continue to depend on foreign partners for technology support. The National Automotive Policies (NAPs) strive to push the sector towards the technology frontier with foreign and domestic investments while seeking to be a regional hub and grooming national Bumiputera champions. The inherent conflicts in these objectives create disincentives for investments while the domestic market is held captive to the national car producers. Although policies continue to espouse grand visions, the reality is that Malaysia's car makers continue to be inward-looking and exporting remains insignificant.

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1. Introduction

The use of state intervention for development has been espoused in theory and practice in many countries. The World Bank (1993) study on the East Asian miracle economies is often attributed to illustrate the success of state intervention in industrial policy. However, the study itself cautions that the use of industrial policy needs to be supported with good fundamental policies, evaluation and monitoring of the support given. Although the range of policy instruments used for the conduct of industrial policy is varied and have changed with time, tariffs or production subsidies are traditionally used to rectify different types of market failures, be it externalities or missing markets (Bora et al., 2000). Infant industry protection is one of the most common form of intervention for fostering manufacturing development. In theory, infant industries require some kind of protection until they acquire similar economies of scale as their competitors. Tariff protection is commonly used to protect these industries until they reach the lower cost of production as enjoyed by their economic rivals at a higher scale of production. But, there are conditions attached to foster the maturation of infants. Cherif and Hasanov (2019)'s study, for example, identifies three conditions for the success of the Asian Miracles, namely, support of domestic producers in sophisticated industries beyond the initial comparative advantage; export-orientation, and the pursuit of fierce competition with strict accountability.

In Malaysia, one of the clearest case of infant industry protection is the automotive sector as it has been targeted as a strategic sector for development since 1983. But it is not a simple case of infant industry protection; it is instead infant industry protection-plus, as it has embedded within it, the ambition to develop not just national champions but specifically Bumiputera automotive champions. This ambition is also implemented within a political economy framework that has nurtured a rentier class (Suffian 2018) that interferes with the conditions for success such as competitive forces and accountability as stipulated in Cherif and Hasanov (2019). It also does not help that Malaysia's domestic market is relatively smaller than its ASEAN neighbors that harbor the same automotive ambitions as Malaysia, albeit without the

extra conditions of cultivating national champions, what more a specific class of ethnic champions.

At the same time, the global automotive sector is also undergoing tremendous dynamic changes on all fronts, be it in terms of technology, consumer preferences, and sustainability concerns. Policy interventions in Malaysia have to struggle to catch up with the rapid changes in this sector with conflicting internal demands. This paper seeks to examine the development of the automotive sector, including the policies used to foster its development, its achievements and outstanding challenges. The paper is divided into six sections. Following the introduction in section 1, a brief overview of Malaysia's automotive sector is provided in section 2. Section 3 compares the shifts in policies over time, while Section 4 highlights the achievements. The challenges are analysed in section 5 while the conclusion in section 6 summarises the key findings of this paper.

2. Malaysia's Automotive Sector

In 2006, Malaysia's automotive industry was a relatively small sector in 2006 with four passenger and commercial vehicle manufacturers, nine assemblers, and 343 motor vehicle components and parts manufacturers (MITI 2006) to 27 vehicle manufacturers (OEMs) producing cars as well as two-wheelers and commercial vehicles and about 800 parts and components suppliers in 2018 (MIDA 2019). The automotive industry contributed an estimated 4.3 per cent to Malaysia's gross domestic product (GDP) in 2019.

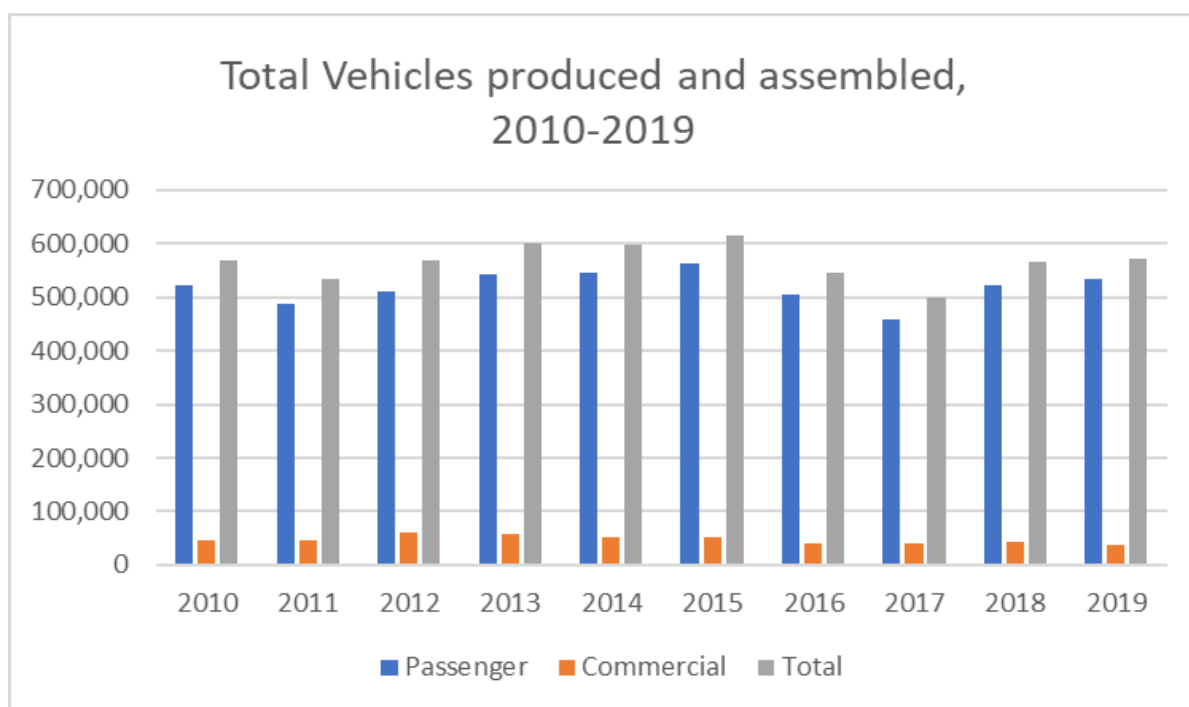
By 2015, based on the Economic Census 2016 for the manufacturing sector (DOS 2016), there were 33 and 45 establishments, respectively, in the manufacture of passenger cars and commercial vehicles. There were also 139 establishments in the manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers. The manufacture of parts and accessories for motor vehicles had the largest number of establishments, totaling 525. Nevertheless, in terms of value added, the total for the manufacture of passenger cars (RM6.2 billion) was bigger than that produced by the manufacture of parts and accessories for motor vehicles (RM5.3 billion). The total value added of this sector accounted for 4.6 percent of total manufacturing value added in 2015. The domestic orientation of these manufacturers could be clearly seen as only 22 percent of the establishments in the manufacture of motor vehicles were exporting with exports accounting for a mere 11.5 percent of their total sales value. In the case

of parts and accessories for motor vehicles, 32 percent of the establishments were exporting with a share of export to total sales value of 28 percent (DOS, 2016).

Passenger vehicles dominate production, with only a small contribution from commercial vehicles (Figure 1). Production and assembly peaked in 2015 before trending downwards for three consecutive years. Although it has since picked up, the total number of vehicles produced in 2019 (604, 287) was still slightly lower than the total in 2010 (605,156) due mainly to the fall in commercial vehicle production and assembly.

Within ASEAN, Malaysia is the third largest producer for passenger vehicles, after Indonesia and Thailand (ASEAN Automotive Federation 2019). It is the fifth largest for the production of commercial vehicles, after Thailand, Indonesia, Vietnam, and the Philippines.

Figure 1. Total Vehicles Produced and Assembled in Malaysia, 2010-2019

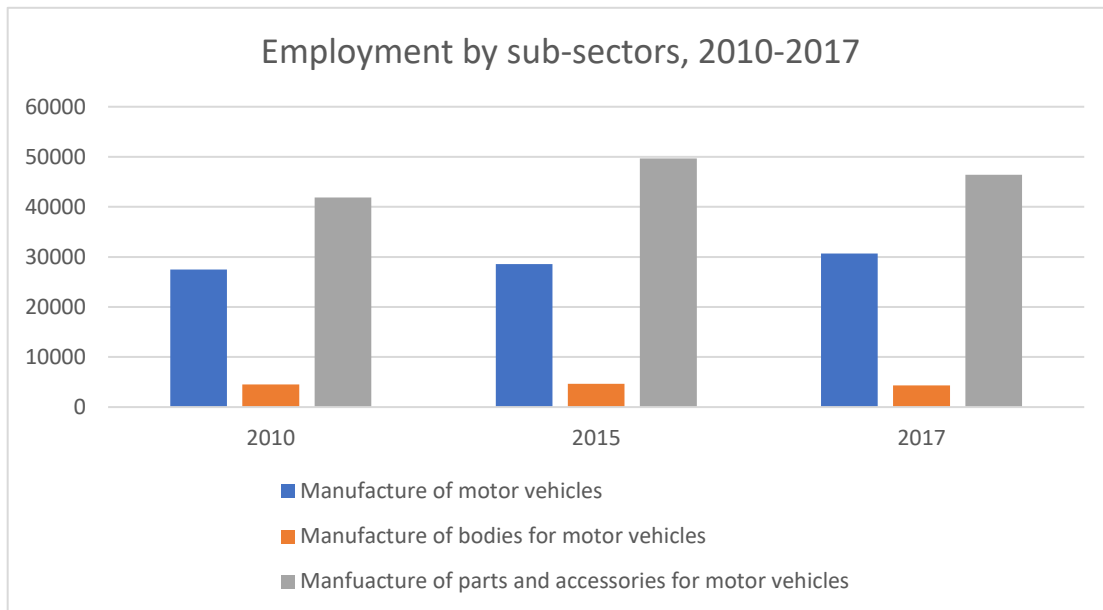


Source: Malaysian Automotive Association (<http://www.maa.org.my/statistics.html>)

Total employment is highest in the manufacture of parts and accessories for motor vehicles, followed by the manufacture of motor vehicles, and the manufacture of bodies for motor vehicles; manufacture of trailers and semi-trailers (Figure 2). Although total employment in

the entire automotive sector grew from 2010 to 2015, it fell slightly in 2017. Total automotive employment contributed to about 3.7 percent of total manufacturing employment in 2017. It should be noted that the data does not capture the services component of this sector, such as employment in car sales, etc, which is not available.

Figure 2. Total Employment by Sub-Sectors, 2010-2017



Source: Department of Statistics, Annual Economics Statistics, Manufacturing 2018

The automotive sector is deemed as a strategic sector, with specific policies drawn up to foster its development from 2006 onwards, as shown in the following section.

3. The National Automotive Plans (NAPs)

The National Automotive Policy (NAP) was introduced in 2006 to transform the domestic automotive industry and integrate it into the increasingly competitive regional and global industry network. It was subsequently reviewed in 2009 to enhance the capability and competitiveness of the domestic automotive industry. The review recommended investments in high value-added manufacturing activities using latest and high technology. Accordingly, the Manufacturing License (ML) was opened up for manufacturing and assembling activities in the selected segments, particularly for luxury cars and hybrid/electric vehicles to encourage new investments and expansion of existing investments in the country. By focusing on the

luxury vehicle, electric vehicle/hybrid/precision engineering segments, the government had hoped to attract high value-added new investments without competing directly with Thailand, and at the same time continuing to support the national car makers that focus mainly on the compact and sub-compact vehicle segments.

The NAP 2014 aimed to spur further growth and improve the long-term viability and competitiveness of the automotive industry by focusing on green initiatives, development on technology and enhancement of the automotive industry ecosystem (MAA undated). The ultimate objective of the NAP2014 was to establish Malaysia as a regional Energy Efficient Vehicle (EEV) hub by the year 2020. It used a framework with three directional thrusts (technology and engineering, investment and market expansion) and three strategies (value chain development, human capital development, and safety, environment and consumerism). Following the same framework, the latest NAP, launched in February 2020, seeks to make Malaysia a leader in manufacturing, engineering and technology as well as ensure a sustainable local automotive industry (MITI 2020).

In comparing the policies over time, this study will focus on the three directional thrusts and one of the strategies, which is value chain development, based on the NAP 2014 and 2020 framework. In particular, it includes Bumiputera participation due to its importance in the automotive industry and its conflicts with the three directional thrusts as well as value chain development.

In the NAPs, attracting investments with customised incentives has always been important (Table 1). The NAP 2006 describes these incentives as tailor-made or negotiated according to the specific needs of the investor, which includes tax incentives as well as non-tax incentives, such as corporate tax exemptions, training and R&D grants, and soft loans (MITI 2006).

The negotiated incentives are given to align the investment needs with the country's strategic preferences, as indicated by the technology thrusts each NAP, which in turn follows global trends. For example, green technology expressed as energy efficient vehicles (EEVs) is targeted from NAP 2009 to 2020. In the 2020 plan, the new technology focus are: next generation vehicles (NxGV), Mobility-as-a-Service (MaaS) and Industrial Revolution (IR) 4.0.

NxGVs are EEVs that have a minimum of conditional automation.¹ The NAP2020 aims to develop the standards for NxGVs by 2021 and to have market penetration by 2025. MaaS is a concept that will integrate various types of services and transport modes into one centralised service via a digital platform while IR4.0 refers to the application of technologies such as artificial intelligence, big data analysis and the Internet-of-Things (IoT) to NxGV and MaaS.

Likewise, the hub ambition in the market expansion directional thrust, is one of the goals in all the NAPs, while the focal point of the hub status is refined and expanded over time. In 2009, it was just a simple production hub, while it shifted to a hub for EEV in 2014. In 2020, the aim of the hub is for not just vehicles, parts and components but also for R&D, development of automotive and mobility-related technologies and vehicle and component testing in the National Automotive Vision 2020.

The hub ambition is meant to be supported by the investment, technology development as well as supply chain developments. The latter has shifted the focus from joining global supply chains in 2006 to the development of global vendors in 2014. In 2020, it focuses on quality improvements and cost reductions through the use of IR4.0 technologies.

Facilitating Bumiputera participation is an important component of the NAPs. Approved Permit (AP) has been used from the first NAP to the most recent, to help Bumiputera businessmen enter the automotive industry, even though this policy was supposed to have been terminated on several occasions. The AP allows Bumiputera businessmen to import used motor vehicles (cars and motorcycles) to start their business in this sector.

Each NAP also has specific measures to support Bumiputera participation, including government support for the two national car projects, Proton and Perodua (Table 1). In the NAP2014, the support provided included activities for market expansion, productivity and quality improvement, cost reduction and development of the supply chain in line with the respective company's transformation plan.

¹ This refers to level 3 in autonomous driving; whereby level 0 has no automation, level 1 has driver assistance, level 2 partial automation, level 3 is conditional driving automation, level 4 is high automation and level 5 is full automation.

Table 1. National Automotive Policies, 2006-2020

| Strategies | NAP1 (2006) | NAP2 (Review, 2009) | NAP3 (2014) | NAP4 (2020) |
|----------------------------------|--|---|--|--|
| Investment | Customised incentives for prioritised areas | Customised incentives for investments in the assembly or manufacture of hybrid and electric vehicles | Customised incentives for Energy Efficient (EEV) vehicles | Customised incentives to attract strategic investments in line with technology thrusts below. |
| Technology Development | No specific focus | Promoting High Value and Green Technology | Green Automotive Technologies | Expand EEV technology and Next Generation Vehicle (NxGV); Mobility-as-a-Service (MaaS); Industrial Revolution 4.0 (IR4.0) |
| Market Expansion | Yes (exports of vehicles and automotive components and regional hub for manufacturing, assembly and distribution of automotive vehicles) | Yes (exports and regional automotive production hub) | Yes (exports and regional automotive hub in EEV) | Increase export development for vehicles and components, aftermarket and services sectors |
| Supply Chain Development | Global Supply Program to enable domestic parts and components to expand into the global supply chain of the major automotive companies | No new area | Development of Global Standard Vendors | Focus on high-quality products and reducing high cost of producing components with the use of IR4.0 technology |
| Bumiputera participation | Promotes Bumiputera participation in total value chain of domestic automotive industry | A strategic partnership for Proton; increase in local content and enhancement of Bumiputera vendor programs | To create globally competitive Bumiputera entrepreneurs, including support for the two national car projects, namely Proton and Perodua. | To participate in supply chain and other new business activities including testing, re-manufacturing, Authorised Automotive Treatment Facility (AATF) and tools, dies and mould (TDM) and others |
| Human Capital Development | None | None | Focus on specific skills such as leadership, management, engineering, quality, design and cost management | Develop talent in line with current and future demands for the automotive and mobility technology |
| Safety, Security and Environment | Yes | Yes | Yes | Yes |

Source: Summarized by Author

Policy attention in the NAP 2020 focuses on the new Malaysian Vehicle Project (MVP), which is defined by the following criteria: local majority ownership, private sector driven focusing on domestic chain development (75 percent local) with a significant level of local R&D, local talent and employment (98 percent) and the development of an ecosystem for the new technology thrusts, namely NxGV and Mobility in line with IR4.0. Unlike the old national cars, the new MVP seeks to develop manufacturing capabilities that involves the entire value chain as well as building an automotive industry ecosystem. The NAP 2020 therefore extends the traditional government support of national cars to the new MVP, which is the third national car project proposed by former Prime Minister Mahathir Mohamed in 2018.

3.1. National Cars: Proton, Perodua and the Third National Car (TNC)

The participation of Bumiputeras in the automotive sector received direct investment from the government in the form of the establishment of new automotive companies such as the first two national cars, as well as in the acquisition of existing automotive companies (Rosli, 2006).

3.1.1 Proton

Proton was started in 1983 as part of the heavy industry program under former Prime Minister Mahathir, with the twin objectives of deepening industrialisation and creating Bumiputera entrepreneurship. Established by government funding and shielded by high tariffs, with technology provided by Mitsubishi, Proton was able to capture 73 per cent of the domestic market by 1988 (Tham 2015).

Several of the privileges enjoyed by Proton were removed over time. The establishment of a second national car in 1993 created competition for the domestic market. Tariff protection was later removed in 2005 under the ASEAN Free Trade Agreement (AFTA) for ASEAN member countries. Mitsubishi also divested their stake in Proton to Khazanah in 2005.

Proton lost its dominant position in the local market to Perodua in 2006. Subsequently, its performance continued to slide downwards, in part due to strong competition posed by Perodua. In addition, Proton did not manage to engineer a technology turn around despite several partnerships with different technology providers after parting ways with Mitsubishi.

In 2012, after a protracted search for a technology partner, Proton was fully acquired by DRB-Hicom, a local listed conglomerate involved with automotive, services (postal) and properties. DRB-Hicom's largest shareholders are Etika Strategi Sdn. Bhd. (56 per cent), which is in turn controlled by local tycoon Tan Sri Syed Mokhtar al-Bukhary, and Employees Provident Fund (EPF) (7.3 percent), which is a GLC-linked company (DRB-Hicom, 2019a). But this sale did not stop Proton's progressive loss in market share as its sales continued to plunge downwards from 138.75 thousand units in 2013 to 70.99 thousand units in 2017 (Statistica). Its share in the domestic market dropped from 23 percent in 2013 to a mere 13.8 percent in 2017 (<http://www.kinibiz.com/story/issues/191556/perodua-pushes-proton-to-the-brink.html> and <https://paultan.org/2019/01/23/vehicle-sales-performance-in-malaysia-2018-vs-2017/>) as DRB-Hicom was unwilling to invest in R&D for Proton to develop new car models.

Proton's losses affected DRB-Hicom's performance negatively, leading to the decision to sell Proton. In May 2017, DRB-Hicom sold a 49.9 per cent stake in Proton for RM460 million and a 51 per cent stake in Lotus, the British sports car marque (which was acquired by Proton in 1996), for £100 million to China's Zhejiang Geely. Lotus, ceased to be a part of Proton after the acquisition. Geely paid RM170.3 million in cash while the remainder was paid by the rights of Proton for the Boyue SUV model platform, which had an implied value of RM290 million (The Edge 2017).

The sale breathed new life into Proton's flagging sales performance as Geely rapidly brought their Boyue, designed by Volvo, and renamed as Proton X-70 into the Malaysian market in 2019. It also introduced some cosmetic changes in the bodies of some Proton models as well as cost-cutting and re-investment requirements for the vendors and distributors. Proton's total sales increased, amounting to 100,821 units sold in 2019 while its market share increased to 16.7 per cent.²

3.1.2 Perodua

The second national car, Perusahaan Otomobil Sdn. Bhd. (Perodua), was established in 1993, also with government funding from PNB Equity Resource Corp Sdn. Bhd. (10 percent) and Med-Bumikar Mara (MBM) Sdn. Bhd. (10 percent) (Rosli 2006). UMW, a government-linked

² Proton, Press Release, 2 January 2020 <https://www.proton.com/en/press-release/2020/january/proton-ends-2019-with-100821-units-sold>.

company (GLC), is the majority shareholder with Daihatsu, the technology partner holding a minority stake.

The subsequent equity restructuring in 2001 led to a change in the ownership structure in its manufacturing arm, Perodua Auto Corporation Sdn. Bhd. The Malaysian portion of Perodua is then left controlling only sales, marketing and after-sales, while the manufacturing operations is majority-controlled by Daihatsu (and the trading company Mitsui) (UMW, 2017, slide 12). Daihatsu which is a subsidiary of Toyota, focused on the compact car segment to differentiate itself from Proton. By leveraging on the technology of its parent company, Toyota, and therefore lower investment costs in R&D, Perodua was able to overtake Proton to hold the largest market share since 2006 (UMW, 2017). It's market share in Q12019 was 40 per cent (UMW 2019).

3.1.3 Third National Car (TNC)

After the sale of Proton to Geely in 2017, the return of Mahathir Mohamad as the seventh Prime Minister in 2018 after the 14th General Elections (GE14), led to the reinstatement of his dream of a “Malaysian” car, thereby giving birth to the third national car, that is supposed be privately-produced.

In August 2019, it was announced that DreamEDGE Sdn Bhd, a Bumiputera-owned company based in Cyberjaya which was founded in 2007, had been appointed for the development of Malaysia's third national car.³ Although DreamEDGE was reported to be developing a Range Extended Electric Vehicle (REEV) for the new national car project, this was subsequently nullified at the announcement. The REEV was one of the goals of the country's NAPs. Daihatsu, Perodua's partner, is reportedly the technology partner in the new car project, but with no equity stakes. Funding for the development of the prototype is supported from the RM20 million fund for R&D provided to the Entrepreneur Development Ministry.⁴

The future of the third national car is unclear with the change in administration in March 2020. There is, to date, no formal statement from the new Prime Minister Muhyiddin, while

³ See Malay Mail, 9 August 2019. <https://www.malaymail.com/news/malaysia/2019/08/09/putrajaya-appoints-dreamedge-to-produce-malysias-third-national-car/1779135>.

⁴ See <https://www.nst.com.my/business/2019/01/448383/rm20-million-ministry-rd-not-all-3rd-car-prototype>, 8 January 2019.

conflicting reports were made from two of his Cabinet ministers. According to Mohamed Azmin Ali, the Minister of International Trade and Industry, the project will be continued although the launch of the prototype of the new car, reportedly a hybrid, has been shifted to 2021 due to the 2020 Coronavirus pandemic.⁵ But, according to the Minister of Science, Technology, and Innovation, Khairy Jamaluddin, the whole idea of a third national car was never even discussed by the cabinet during his tenure in the ministry.⁶ It therefore remains to be seen if the third national car will see the light of the day since it is premised on the aspirations to build Bumiputera entrepreneurship rather than the economic viability of the project, thereby implying political support and funding are essential for the project to be continued.

4. Achievements

4.1. Investments

Despite the investment aspirations, Table 2 indicates that the automotive industry has received progressively a smaller share of total approved investments in manufacturing over time. Its share declined from 10 per cent in 2013 to around 1 per cent in 2018, before increasing to 6.7 per cent in 2019. Approved FDI in the auto sector also occupies a small share of the total approved foreign investments in the manufacturing sector (5.2 percent in 2013 and 2.4 per cent in 2019). Domestic investments dominate in the auto sector, relative to foreign investments.

Table 2. Approved Investments in the Automotive Industry (RM billion)

| Investments | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|------|------|------|------|------|------|------|
| Total Auto | 5.6 | 1.9 | 1.4 | 0.8 | 2.6 | 1.0 | 5.6 |
| Domestic Auto | 4.1 | 1.1 | 1.0 | 0.6 | 1.5 | 0.7 | 4.2 |
| Foreign Auto | 1.6 | 0.8 | 0.5 | 0.1 | 1.1 | 0.4 | 1.3 |
| Total Foreign Share in Manufacturing | 30.5 | 19.5 | 21.9 | 27.4 | 21.6 | 58.0 | 53.9 |
| Total Manufacturing | 52.1 | 71.9 | 74.7 | 58.5 | 63.7 | 87.4 | 82.7 |

Note: * May not be the same as domestic plus foreign due to rounding

Source: MITI, MIDA

⁵ See <https://www.nst.com.my/business/2020/07/605413/third-national-car-project-resume-despite-government-change> 2 July 2020.

⁶ See <https://www.wapcar.my/news/khairy-third-national-car-never-even-discussed-5221>, 21 August 2020; see also the video of livestreaming of the town hall meeting where the comment was made at the 49:56 mark.

4.2. EEV Penetration

The definition of EEV used since NAP 2014 are vehicles that meet a set of specification in terms of carbon emission level (CO₂/km) and fuel consumption (L/km) (MAA undated). EEV includes fuel-efficient internal combustion engine (ICE) vehicles, hybrid, electric vehicles (EV), and alternative fueled vehicles (MAA undated). The technical specification for the fuel consumption is based on international bench-marking with a few countries and the domestic automotive sector.⁷ Currently, Malaysia's classification of EEV is based on fuel consumption specification only. Carbon emission specifications will only be used once the EURO 4M fuel quality standard is introduced in January 2020. The Perodua Axia was the first car to qualify under Malaysia's 2014 National Automotive Policy (NAP) Energy Efficient Vehicle (EEV) fuel-efficiency standards when it was launched in 2014.⁸

Based on these definitions, the number of EEVs in the country increased progressively from 14 percent in 2014 to 62 percent in 2018 and this further increased to 88 percent in 2019 (Table 3). It is expected to reach 90 percent in 2020.⁹

Table 3. EEV volume and penetration rates, 2014-2019

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------------------|-------|--------|--------|--------|--------|--------|
| No. Of Models | 6 | 82 | 59 | 78 | 62 | 103 |
| No. Of Variants | 11 | 82 | 117 | 105 | 386 | 298 |
| Number of units sold | 93975 | 217336 | 248293 | 299850 | 339978 | 529256 |
| EEV penetration rate (%) | 14 | 33 | 43 | 52 | 62 | 88 |

Source: NAP2020, updated from <https://s1.paultan.org/image/2020/03/MARii-2019-2020-performance-outlook-31.jpg>

⁷ See NAP 2014 for the EEV technical specification for fuel consumption for different types of cars

⁸ Source: <https://www.thestar.com.my/news/community/2014/10/07/energy-solution-peroduas-first-eev-gets-28000-bookings-since-launch>

⁹ See <https://paultan.org/2020/03/05/automotive-exports-to-grow-to-rm17-2-billion-in-2020-autonomous-and-avic-rd-centres-to-be-built-marii/#:~:text=The%20continued%20growth%20of%20energy,is%20expected%20to%20hit%2090%25.>

4.3. Exports

Exports continue to be small, with a greater share attributed to the exports of parts and components rather than Completely Built-Up cars (CBUs) (Table 4). Re-manufactured exports increased by 38 per cent from 2018 to 2019, albeit from a low base. Re-manufacturing refers to the process of restoring existing parts or components to 'as good as new' condition using a standardized industrial process in line with specific technical specifications.¹⁰ It was identified as a potential area of growth in 2016 due to increasing demand in Malaysia and the region, to re-manufacture automotive components in cars, trucks, and lorries. MARii reported that the re-manufactured parts and components have been increasing steadily since the data was first reported in 2016. In 2019, re-manufactured parts and components amounted to RM700 million.¹¹ Total exports in the automotive sector contributed towards 1.64 percent of total manufacturing exports in 2019.

Nevertheless, imports continue to be important with Malaysia registering a trade deficit in her cross border trade in car vehicles as well as parts and components (Figures 3 and 4).

Table 4. Exports of CBU and Parts and Components (P&C), 2014-2019 (RM billion)

| RM billion | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|------------------|------|------|------|------|------|------|
| Re-manufacturing | n.a. | n.a. | 0.51 | 0.52 | 0.52 | 0.72 |
| Exports of CBU | 1.5 | 1.44 | 1.05 | 1.04 | 2.08 | 1.03 |
| Exports of P&C | 4.7 | 9.8 | 11.2 | 11.6 | 12.1 | 13.7 |

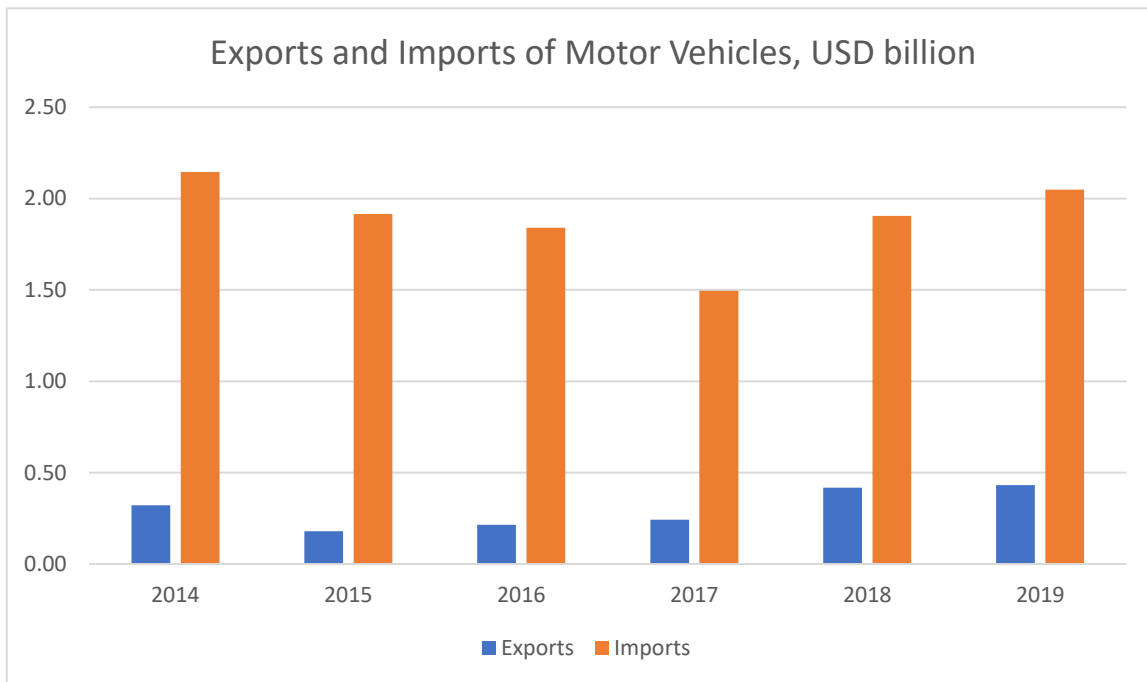
Note: n.a.: not available

Source: NAP2020, updated from <https://www.theedgemarkets.com/article/malaysia-expects-automotive-exports-still-grow-despite-covid19-dampener#:~:text=1%20billion%20in%20exports%2C%20Madani,in%202019%20%E2%80%94%20up%20from%20RM12.>

¹⁰ See <https://www.theedgemarkets.com/article/miti-focus-automotive-parts-and-component-exports-2019>

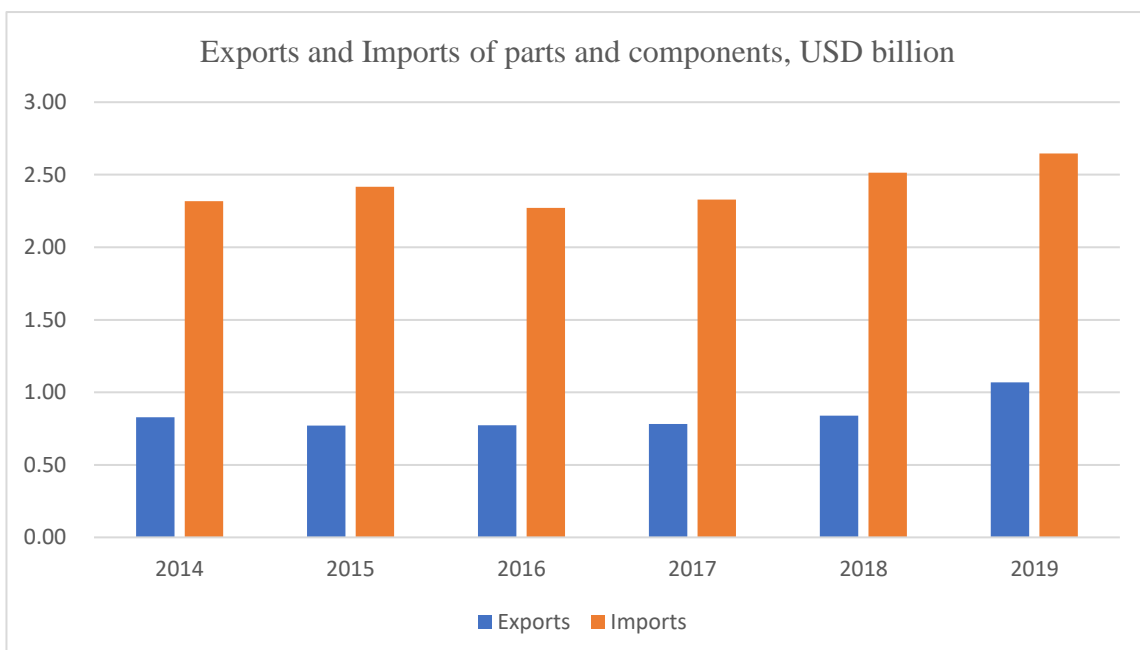
¹¹ See <https://www.theedgemarkets.com/article/malaysia-expects-automotive-exports-still-grow-despite-covid19-dampener#:~:text=1%20billion%20in%20exports%2C%20Madani,in%202019%20%E2%80%94%20up%20from%20RM12.>

Figure 3. Exports and Imports of Motor Vehicles, USD billion



Source: <https://trendeconomy.com/data/h2/Malaysia/8703>

Figure 4. Exports and Imports of Parts and Components, USD billion



Source: <https://trendeconomy.com/data/h2/Malaysia/8708>

4.4. Vendor Development

The government measures developments in the capabilities of vendors capabilities by the growth in the number of vendors in the top three levels of the supplier competitiveness level, as shown in Table 5.

Table 5. Supplier Competitiveness Levels (SCL)

| SCL | Requirements |
|-----|---|
| 5 | <ul style="list-style-type: none"> Supplier is able to perform its own research on the product improvement, ideas, conceptual outcome and propose to the OEM |
| 4 | <ul style="list-style-type: none"> Component idea, concept and requirements are given by the OEM Supplier will come out with component design, detail specification and component manufacturing Suppliers are able to improve and provide alternatives to OEM |
| 3 | <ul style="list-style-type: none"> Detail component specification given by the OEM Supplier is responsible to perform component tooling design, testing, production facilities and manufacture the component Supplier is able to provide warranty part reliability |
| 2 | <ul style="list-style-type: none"> Component design, drawing and specification is given by the OEM Supplier is responsible to design and fabricate production facilities and manufacture the component |
| 1 | <ul style="list-style-type: none"> Component specification, design and production facilities are prepared by the OEM Supplier concentrated in production and maintaining the facilities |

Source: NAP 2014: Malaysia Automotive Supply Chain Development

Table 6 shows that the number of vendors achieving over time, SCLs 3, 4, and 5, with the largest increased in SCL 5, since it started from a low base. Unfortunately, there is no data on the number of local and foreign vendors in SCL5. In 2019, more than half of the total number of vendors in the country were at SCL3.

Table 6. Supply Chain Development: Number of Vendors, 2014-2019

| SCL | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|-----|------|------|------|------|------|------|
| 3 | 277 | 317 | 355 | 405 | 405 | 423 |
| 4 | 33 | 58 | 84 | 90 | 130 | 130 |
| 5 | 5 | 12 | 17 | 27 | 55 | 63 |

Source: NAP 2020 and updated from

<https://drive.google.com/file/d/1paKwdMAAuwEiXbWy0J4KYiV8ZNys8Uzw/view>

5. Challenges

The NAPs reveal inherently incompatible ambitions of wanting to build national cars as well as facilitate the development of Bumiputera entrepreneurs, while seeking for foreign investments and technology as well as a slice of the regional market in terms of exporting, and being a regional hub. Concurrently, the industry has to keep abreast with changes in the global arena. This raises severe challenges as discussed below.

5.1. The Use of Customized Incentives for Investments

Malaysia has chosen to use customized incentives for the automotive sector. This requires a cost-benefit analysis (CBA) of an investment proposal to ascertain the amount of incentives to be awarded for the applicant. The Automotive Business Development Committee (ABDC) was established in 2006 to facilitate the decision-making process. The committee comprises of representatives from MITI, Ministry of Finance (MOF), Malaysia Investment Development Authority (MIDA), Malaysia Automotive, Robotic, and IOT Institute (MARii), and the Royal Malaysian Customs Department (RMCD). The incentives are important as they affect pricing approvals (MITI, 2019).

While technically all car companies face the same set of duties and taxes, the Industrial Linkage Programme (ILP) allows for duty exemptions and reductions and other incentives for localisation. As shown in Table 7, the amount of excise duties can be substantial, ranging from 60-105 percent even though import duties have been reduced substantially compared to the early days of protection for Proton, in ASEAN and non-ASEAN countries. However, details on the extent of localisation and types of localisation requirements needed to qualify for these incentives are not made known, except for the local investments and local content, local employment, export volume/markets and technology. The non-transparent nature of the criteria used to award incentives have been contested by the non-national car assemblers, where it is viewed as an unfair advantage accorded to Proton and Perodua, due apparently to their higher local content (Suffian 2020).

Table 7. Import and Excise Duties, from ASEAN and Non-ASEAN countries

| Types of Vehicles | ASEAN | | Non-ASEAN | |
|-------------------|-------------------|-------------------|-------------------|------------------|
| | Import Duties (%) | Excise Duties (%) | Import Duties (%) | Excise Duties(%) |
| CKD Vehicles | 0 | 60-105 | 10 | 60-105 |
| CBU Vehicles | 0 | 60-105 | 30 | 60-105 |

Source: MIDA

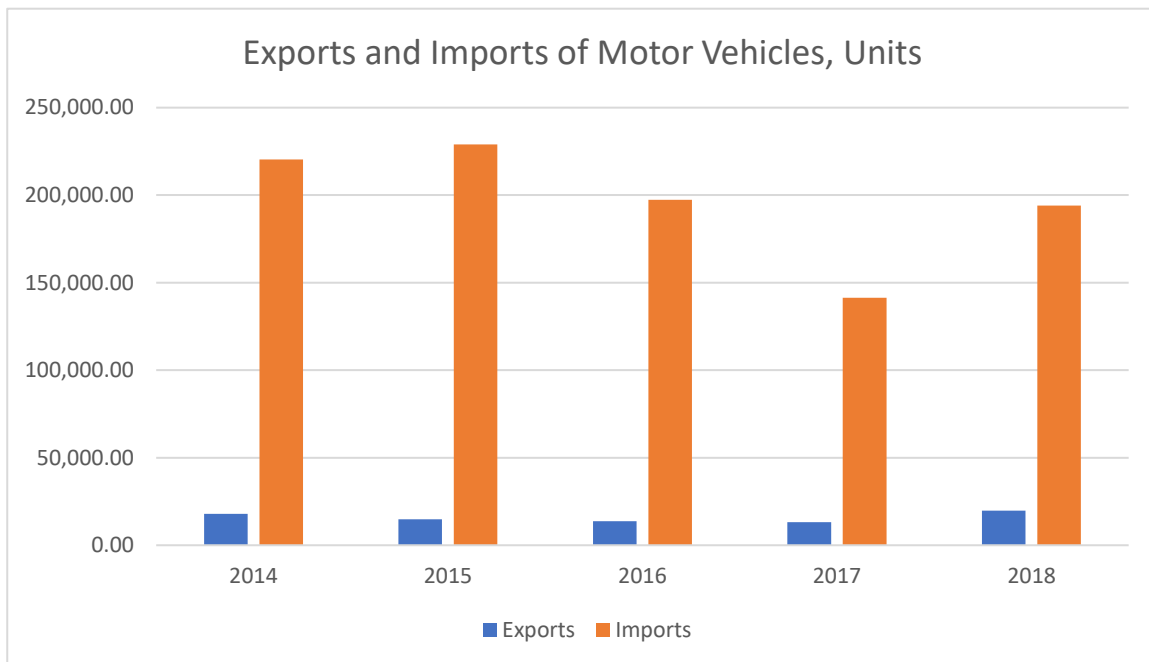
Despite the need to go through ABDC for the approval of incentives granted, it was admitted that some car makers had obtained incentives directly from the Ministry of Finance (MOF) without comprehensive assessment, during the previous administrations before the Pakatan Harapan (PH) administration (MITI, 2019), thereby increasing the irregularities in a non-transparent system. Although the PH's administration had expressed intentions of strengthening the process and governance of the system, it is unclear whether this had been fulfilled due to its early exit in early 2020.

This in turn affects investments as uncertainty over the incentives provided to an investor, as well as in comparison to rival investors makes it difficult for investors to compute the expected rates of return on their investment, pricing for their models and the expected pricing of their competitors' models. Lack of investment implies that it will be harder for Malaysia to catch up with the latest in changes in auto technology and trends.

5.2. Exporting and Hub Ambitions

An enduring goal for Malaysia's auto sector is the hub vision, which includes exporting. In the NAP 2014, for example, exports of 250,000 vehicles per year was targeted (MAA undated). At that time, it was forecasted 20,000 units would be exported in 2013 and Proton export targets would proceed as aspired. However, the number of units exported over the period of the NAP 2014 actually fell progressively from 18,000 units in 2014 to 13,000 in 2017 before increasing to 19,800 units in 2018. Although the 2019 data is not available, it is unlikely to touch the targeted number. Imports also continued to dominate as shown in Figure 5.

Figure 5. Exports and Imports of Motor Vehicles, Units, 2014-2018



Source: <https://trendeconomy.com/data/h2/Malaysia/8703>

The main exporters were neither Proton nor Perodua. In 2019, it was reported that Proton and Perodua exported 1,100 and 2,825 cars respectively, or approximately one fifth of total number of units exported in 2018.¹² Instead, the bulk of the exports are contributed by the non-national car assemblers in the country. The main driver for CBU exports was reported to be mid-high end vehicles such as Mazda, Volvo, Mercedes and BMW.¹³

There are two main reasons for the limited exports. First, exports are determined by the technology partners. In the early days of Proton's partnership with Mitsubishi, the technology partner was mainly interested in capturing the lucrative protected domestic market (Athukorala 2014) while guarding its own exports from Japan to the ASEAN market. Geely's partnership with Proton has revived exports sales as Geely is also interested in penetrating the ASEAN export market, where it has no production sites nor presence as yet. It has started to export the Proton X-70 to Brunei and Indonesia.

Secondly, tariff reductions under AFTA have instigated the increasing use of non-tariff measures (NTMs) to protect domestic markets in ASEAN. In the auto sector, ASEAN members

¹² See <https://www.wapcar.my/news/why-the-perodua-myvi-continues-to-struggle-in-export-markets-2379>

¹³ See <https://www.nst.com.my/business/2019/01/452602/malaysia-roll-out-tesla-battery-electric-vehicles-2020>

countries continue to compete for FDI for employment and technology reasons. The use of excise duties is a common domestic policy tool used to support producers in the country for the domestic market (Oxford Economics 2015). Other NTMs include quotas and licensing, complex conformity assessment procedures, unique national standards, high taxation regimes, and discriminatory policies favouring local manufacturers (Asia Trade Center 2019). Even when Perodua's technology partner is exporting to Indonesia under its Daihatsu label, it encounters the same disadvantage that non-national car makers face in Malaysia, namely tax exemptions that are enjoyed by locally-assembled vehicles in Indonesia as the latter is also aiming to become a regional automotive hub. Indonesia also limits imports through a quota system, which will also eventually affect Proton's exports to Indonesia. It will be difficult for Proton and any other national car and assemblers from Malaysia to capture a large share of the Indonesian mass market segment as they will have to compete with the foreign car manufacturers who are producing there for the same market segment, under the protection of NTMs.

Clearly, Malaysia is still far from being an auto hub, much less the envisaged EEV manufacturing hub in Southeast Asia, which was the "mission statement" of NAP2014.

5.3. Supply Chain Development

Earlier literature on supply chain development has shown the weak performance of local suppliers in Proton's government supported supplier programs due to their disadvantage in technology compared to foreign suppliers (Rosli and Kari 2008). Suffian (2020)'s analysis of the development of Bumiputera suppliers under the Vendor Development Program (VDP) for Proton, with the use of extensive subsidies in the form of financial grants, business match-making, technical assistance programs and purchase agreements, has failed to groom competitive suppliers. Instead, inefficient producers emerged due to rent capture. These producers have remained small and inefficient, lacking the crucial scale economies for competing in international markets (Oxford Economics 2015, p.38). Exporters are instead primarily the suppliers that are not linked to the VDP.

The entry of Geely into Proton is set to change the local vendor scene. Geely's turn around plan for Proton included cost cutting measures whereby vendors had to cut their prices by 30

percent by end 2018¹⁴, while distributors had to invest to upgrade their services. As in the case of other car manufacturers in Malaysia, Thailand and Indonesia (Shimono and Kato 2017), Proton-Geely also proceeded with localisation, albeit with characteristic Chinese swiftness. The completely built-up (CBU) Proton X70 that was launched in 2018 was immediately scheduled for Completely Knocked-Down (CKD) production in 2019 to cut costs and reduce currency risks (Geely 2018). The localisation plan has further enabled Proton-Geely to leverage on the existing tax structure that favors CKD as opposed to CBUs since excise duty exemptions are given for local content. It will also eventually enable Proton-Geely to meet the 40 percent local content needed to access the duty-free status in the ASEAN regional market.

To facilitate localisation that can meet the specifications of the X70, Geely matched eight local vendors with Chinese companies in joint-ventures and technical assistance.¹⁵ This included a partnership between DRB-Hicom's own subsidiary firm, Hicom-Teck See Manufacturing Sdn Bhd with Jiangsu Xinquan Automotive Trim Co. Ltd in January 2019 to design, develop and manufacture instrument panels using slush moulding technology which is currently not available or used in Malaysia (DRB-Hicom 2019b). The eight collaborations have reportedly brought in another RM170 million in investments.

A second batch of collaborations was subsequently reported whereby there were four joint ventures, one technical collaboration and two 100 percent foreign direct investments, bringing in another RM47 million.¹⁶ Proton has also appointed Camel as the vendor to supply Camel Power batteries for the Proton X70 and future models (Tham and Negara 2020). Camel Power (M) Sdn Bhd is a subsidiary company of Camel Group Co. Ltd. It was established in Kuala Lumpur on March 7, 2017 and its manufacturing plant is located at Malaysia-China Kuantan Industrial Park (MCKIP). The parent company, Camel Group Co. Ltd, is one of the largest batteries supplier for Chinese car maker Geely Automobile Holdings Ltd. Another manufacturer from China, manufacturing tyres has been approved to invest and manufacture in MCKIP.

¹⁴ See <https://www.theedgemarkets.com/article/proton-vendors-told-cut-prices-30-says-minister#:~:text=%E2%80%9CAsking%20suppliers%20to%20cut%20prices,it%20succeeds%20in%20its%20reform.>

¹⁵ See <https://www.nst.com.my/business/2018/10/419947/proton-invests-rm12b-expand-tanjung-malim-plant>

¹⁶ See <https://paultan.org/2019/01/17/proton-vendors-sign-second-collaboration-agreement/>

The trend indicates increasing use of Chinese suppliers for technology and cost reasons for the current and future production of the new models that Geely will be bringing into Malaysia. Based on Geely's Annual Report 2018, the partnership has secured the use of intellectual properties (IP) and the rights to manufacture and sell three Geely models, namely the Proton X70, the SX11 SUV and the VF11 in ASEAN.

Existing vendors for Proton in the older car models, prior to Geely's entry into Proton, will have to consolidate and reduce costs leading doubtless to exits, regardless of whether they are Bumiputera or non-Bumiputeras.

5.4. Conflicting Objectives

The conflicting nature of Malaysia's auto policies of wanting to keep abreast with global trends, made in Malaysia, and made by Bumiputeras is encapsulated in the vision to promote hybrid and electric cars (EVs) since 2009. The NAP 2009 stated that the government at that time was keen to promote both types of vehicles with tax incentives for ten years. But, after more than ten years, the only EVs available in the country are imported CBUs with no CKD production. Geely and other OEMs have the technology to produce EVs but none have yet to commit to the production of EV in the country. The TNC is also supposed to develop an EV, but it remains unclear if that will materialise, even if the project goes through and an investor can be found.

Instead, Geely launched its EV for the Southeast Asian market as well as Australia and New Zealand in April 2019 in Singapore.¹⁷ It will be distributed by Hong Seh Motors, which is the local distributor for Tesla. Singapore was chosen for its modern, forward-thinking and environmental focus, which reflects the core values of the new car.¹⁸ Hyundai's decision to build electric cars in Singapore, which has no automotive manufacturing, and in Indonesia reflects the weaknesses in Malaysia's auto policies.

Studies have shown that public policies play an important role in the development of EVs (see for example, Perdiguero and Jiménez, 2012; Todd and Chen 2013; APEC 2017). These policies have to address supply and demand needs concurrently (Todd and Chen 2013). Supply side policies have to provide assistance to manufacturers and suppliers who wish to enter the

¹⁷ See <https://www.carbuyer.com.sg/geely-launches-geometry-new-electric-brand-in-singapore/>

¹⁸ See <https://www.carbuyer.com.sg/geely-launches-geometry-new-electric-brand-in-singapore/>

EV market, increase their market share, or conduct research and development in EV space while demand side policies have to address the cost and convenience of using EVs.

On the supply side, Mahathir had tried to push Proton towards the production of EVs. A collaboration was formed between Proton and ItalDesign-Giugiaro of Italy to develop the Proton-Emas (or Eco Mobility Advance Solution) electric car concept, which was subsequently unveiled at the Geneva Motorshow in 2010 (Proton Annual Report 2010). It was targeted for the domestic and export market. The Annual Report also stated based on Proton's Technology Roadmap, the company had embarked on the development of electric vehicles as a long-term strategy, partnering Lotus Engineering, UK and another technology provider for the development of the EV engines for two models of Proton, namely the Persona and the Saga. But all these ventures came to naught. Although the Proton Emas was reportedly slotted to begin production for Malaysia and the world in 2012¹⁹, it never materialised, nor were there any EV versions of Persona and Saga ever launched. Although there are no reports on the amount spent to specifically develop these new vehicles and engines, reportedly, RM18 million was invested in R&D from 1983 to 2015.²⁰

For the OEMs with the technology to develop the EV, uncertainty over the incentives creates a disincentive to invest. In an interview in September 2019, Proton's CEO Dr. Li Chunrong, highlighted the need for government support for new-energy vehicles, including EVs, as the cost of these vehicles is very high. Government support covers a broad range of policies including tax support on the demand side to facilitate the shift in demand.²¹ According to the experience in APEC economies, economic support can stimulate new energy vehicles (NEV) purchases and NEV R&D (APEC 2017). For example in China's subsidy program for the public sector, buyers of hybrid vehicles can receive subsidies of up to 50,000 yuan (USD7500) depending on the fuel efficiency rate, with electric vehicles qualifying for higher subsidies. This also includes developing the infrastructure (The Oxford Institute for Energy Studies 2019) to support EVs such as an extensive network of charging stations to overcome problems of "range anxiety", which in turn depends on demand to support the expansion in infrastructure.

¹⁹ See <https://www.wapcar.my/news/is-the-proton-emas-a-wasted-golden-opportunity-4359>

²⁰ See <https://paultan.org/2015/10/05/proton-invested-rm18-billion-since-1983/>

²¹ See <https://www.theedgemarkets.com/article/cover-story-government-support-needed-development-newenergy-vehicles>

It also requires technology support such as the development of batteries, which is the principal component of an EV, to ensure a lower cost of production and replacement costs.

Nevertheless, without local champions in EV production, the government is reluctant to subsidise and reduce the cost of ownership for fear of EV imports damaging the domestic market for local producers, especially Proton, Perodua and the other Bumiputera assemblers, including GLCs like Sime Darby and UMW. The loss of tax revenues in terms of excise duties foregone is another consideration while its potential impact on existing vendors and employment are other important considerations. Without subsidies, the prices of imported EVs remain prohibitively high and out-of-reach for the ordinary consumer. For example, a Nissan Almera is priced under RM70,000 while an imported Nissan Leaf, which is an EV, is priced at more than double at about RM190,000.²²

Therefore, even though the partnership between Proton-Geely has secured access to Geely's EV technology in one of the three types of Geely's vehicles that can be manufactured in Malaysia, it is unclear if Geely will produce the EV version or the petrol-powered and plug-in hybrid versions in the immediate and distant future.

5.5. Continuation of Aspirational Targeting in NAP 2020

Despite the problems encountered in meeting the targets of the NAP 2014, the NAP 2020 continues to aim for even higher targets. For example, the NAP 2014 targeted to increase total production volume to 1.35 million units vehicles annually by 2020. Figure 1 shows clearly that this cannot be achieved since only 571,632 vehicles were produced in 2019 while the data for the year 2020 by June registered only 166,049 units due to the negative impact of the Covid pandemic on local production. Despite the shortfall, the NAP 2020 does not examine the reasons behind the shortfall and device plans to address the problems. Instead, it sets higher aspirations and plans for the next ten year, such as a total production volume of 1.47 million vehicle units.

Similarly, as explained earlier under the challenges, the targeted export of 250,000 units vehicles per year was not achieved (Figure 5). Yet, the NAP 2020 aims to export RM1.3 billion in complete CBUs, probably based on the expected penetration of Proton-Geely's exports into

²² See <https://www.ibrasiagroup.com/the-contradictions-of-malaysias-electric-car-policy/>

the ASEAN market. Although exports of re-manufacturing and recycling automotive components of RM2 billion per year was also not met (Table 4), the NAP 2020 targets for RM10 billion worth of exports of re-manufactured parts and components. In the case of exports of parts and components, the target of an export value of more than RM10 billion per year was met from 2016-2019 (Table 4), and in the NAP 2020, and this was raised further to RM28.3 billion per year.

Although the NAP has a long list of other targets, such as the hub ambition, these targets appear to be more akin to aspirational goals since it ignores past failures and instead focuses on even higher goals to achieve by 2030. The basis of the numerical projections is not clear since there is no situational analysis of current market conditions and the assumptions used in the projections are not stated. This makes it difficult for the market players to use it as practical policy document to plan their investment and production and to work along the directions that is set by the government.

6. Conclusion

The automotive industry is one of the most globalised industry, with 30,000 parts and components needed to produce a vehicle. It is also facing rapid changes in technology and consumer preferences as well as heightened competition. Malaysia's policy planning is cognizant of these changes as can be seen in the changing technology aspirations and the types of investments targeted for this sector. Its plans for the automotive sector has always included the global changes in technology in this sector. But this grand vision is also saddled with local ambitions of nurturing local champions, especially Bumiputera entrepreneurs who can lead the sector and compete against the global automotive producers in this sector.

Without the requisite technology to innovate and produce in an increasingly competitive and crowded automotive sector in ASEAN, local manufacturers, regardless of ethnicity, have to source for technology from foreign partners. This has been the case for Proton as well as Perodua. After investing considerably for so long in Proton, with no maturing of the infant to show for it, and having to sell an equity stake to Geely, it would appear that nurturing another infant will be doomed to fail as well, especially without the use of conditions, including especially monitoring and accountability (Cherif and Hasanov 2019). Moreover, although it is

claimed that home grown technology will be used to build the TNC project, it will still need funding or an investor for it to be commercially viable. It is doubtful whether this investor will not depend on government funding, be it directly or indirectly, given the history of Proton's development.

A foreign technology partner can be a constraint on the export ambitions unless the technology partner is neither producing in other ASEAN member countries nor exporting to them and views the local partner as a collaborator rather than as a competitor for the export market.

Ultimately, there should be a review of the goals for the automotive sector. If the government continues to prioritise national cars, then the domestic market will be held captive by these producers. Exports of CBUs are unlikely to grow, given the automotive ambitions of other ASEAN member countries like Indonesia and Thailand. Neither will foreign investors be attracted to a small domestic market with an uneven playing field for national and non-national players. A green future is unlikely to be achieved in the near future since the national car makers have yet to bring out EVs while cheaper imports of these vehicles are equally unlikely to happen.

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