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**A COMPARISON OF OEM ENTERING THE  
AUTOMOTIVE MARKET OF ASEAN  
Bachelor Thesis**

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ŠKODA AUTO Vysoká škola

## REGISTRATION FOR BACHELOR THESIS

Candidate: **Yuri Konushin**  
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Aim: The objective of this paper is to examine the specifics of the automotive market in the ASEAN region, identify the main obstacles that prevent European OEMs from gaining ground, and propose a road map that leads to becoming an established player.

Content areas:

1. Introduction  
It provides an overview of the ASEAN region, gives information about the automotive market in general and current situation in ASEAN. In particular it describes the position of European automotive brands vs. the market leaders (Japanese brands) in the region.
2. Theoretical part  
It explains the particulars of car manufacturing in general and provides insight into the automotive production landscape in ASEAN.
3. Practical part  
It analyzes the main obstacles that international OEMs are faced when entering the market and based on the example of OEM from EU proposes a road map for successful market entry.

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1. AUTOMOTIVE FEDERATION, A. ASEAN AUTOMOTIVE FEDERATION STATISTICS. [online]. 2018. URL: <http://www.asean-autofed.com/statistics.html>.
2. AG, A. *Zollsituation Indien, Thailand, Malaysia, Indonesien*. Ingolstadt: AUDI AG, 2014. 11 p.
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## Contents

Introduction.....	8
1 Theoretical background for choosing a market entry mode .....	10
1.1 International expansion and market analysis.....	10
1.2 Definition of market entry modes.....	12
2 Automotive market in the ASEAN region .....	16
2.1 An overview of the ASEAN region.....	16
2.2 Classification of the automotive market.....	18
2.3 The automotive market of ASEAN.....	20
2.4 Specifics of the automotive market in Indonesia, Malaysia and Thailand	21
2.5 Positioning of European automotive brands in Top three.....	24
3 Vehicles assembly in the ASEAN region .....	28
3.1 Productions depth .....	28
3.2 An overview of passenger car manufacturing in ASEAN.....	31
4 Entering the ASEAN automotive market – mastering the local challenges....	34
4.1 Obstacles for European OEMs in ASEAN.....	34
4.2 Overcoming the trade barriers in the Top three markets .....	34
4.3 Understanding the local conditions in the Top three markets.....	42
Conclusion.....	45
Bibliography.....	47
List of figures and tables.....	51
List of appendices .....	52

## List of abbreviations and symbols

AAF	ASEAN Automotive Federation
ASEAN	Association of Southeast Asian Nations
BOI	Thailand Board of Investment
BRIC	Brazil, Russia, India, China
CAGR	Compound annual growth rate
CEC	Commission of the European Communities
CKD	Completely knocked down
CNG	Compressed natural gas
DOE	United States Department of Energy
EOP	End of Production
EU	European Union
EXW	Ex Works
FBU	Fully built unit
FDI	Foreign direct investment
FSP	Full scale production
GDP	Gross domestic product
IT	Information technology
JPH	Jobs-per-hour (units per hour)
KPMG	Consulting company
LC	Local content
LCGC	Low Cost Green Car
MKD	Medium-knocked down
MPV	Multi-purpose vehicle
OEM	Original equipment manufacturer
OECD	Organisation for Economic Co-operation and Development

OICA	International Organization of Motor Vehicle Manufacturers
PC	Passenger cars
PPP	Purchasing Power Parity
PRB	Population Reference Bureau
SKD	Semi-knocked down
SOP	Start of Production
SUV	Sports utility vehicle
Triad	USA, Japan, Europe
VW	Volkswagen AG



## Introduction

While the BRIC countries are touted as the economies of tomorrow (as they certainly are) the region of ASEAN tends to be somewhat overlooked. Meanwhile ASEAN has a population larger than Russia and Brazil combined and an economic growth rate which remains high despite the current economic downturn one sees in Europe, Brazil and Russia. It follows that the ASEAN region also has an automotive market that rivals in size those of India, Brazil and Russia. It is also one of the fastest growing automotive markets in the world. On Thailand for example, Wonglimpiyarat (2016, p. 9) states that: “The country has been recognized as ‘the Detroit of Asia’” due to the fact that the country has by the largest vehicle production capacities than any other country in ASEAN. While OEMs from Europe have succeeded in gaining footholds in BRIC countries, ASEAN has proved to be an unsurmountable challenge. Numerous automotive manufacturers from Europe have tried entering the ASEAN market, however, without success.

The objective of this thesis is to examine the specifics of the automotive market in the ASEAN region, identify the main obstacles that prevent European OEMs from gaining ground, and propose a road map that leads to becoming an established player. The thesis is divided into four parts. The first part of the thesis deals with the theory of market entry modes, which are available to a company. The second part provides an overview of the ASEAN region, gives information about the automotive market in general and current situation in ASEAN. It also describes the position of European automotive brands vs. Japanese brands in the region. The third part explains the particulars of car manufacturing in general and provides insight into the automotive production landscape in ASEAN. The objective of the fourth part is to analyse the main obstacles that European mass OEMs are faced with, and to present a road map for successful market entry.

Every car market is comprised of passenger cars (PC) and commercial vehicles. PC form a substantial majority of any automotive market and serve the purpose of this thesis much more than commercial vehicles. Therefore, the thesis is focused solely on the particulars and specifics of PC market in ASEAN.

Throughout the thesis reference is made to the brands VW and ŠKODA. The reason being VW is one of the few European mass OEMs that has been present in ASEAN

for a long period of time and operates two manufacturing facilities. ŠKODA, although not currently present, completed an in-depth analysis of the automotive market in ASEAN and has a strategy for entering the market.

The material for this thesis is derived from author's own experience within the automotive industry in general, the ASEAN region in particular; as well as from analysis and experience of colleagues and management from ŠKODA and VW, as well as own research.

The thesis addresses two main questions:

1. What are the key challenges for European mass OEMs on the automotive market of ASEAN?
2. How can car manufacturers from Europe be successful in ASEAN?

The first question deals with the identification and explanation of obstacles for European mass OEMs, namely protective duties and taxes.

The second question proposes a road map for overcoming the above challenges when entering the ASEAN market.

# 1 Theoretical background for choosing a market entry mode

## 1.1 International expansion and market analysis

An international expansion is a step to be taken by any company, which intends not merely to survive but to grow its business through higher engagement with international markets (Schellenberg, Harker and Aliakbar, 2018, p. 7). In today's globalized society, the entire world can be considered as one big market, available to those companies, which possess the necessary resources and will to conquer it.

Preliminary to the embarking on the path of international expansion, a company must conduct an analytical study (Calvelli, Cannavale, 2019), which is a two- step process:

1. A general analysis of available markets resulting in a short-list of markets with potential
2. A detailed analysis of not only the short-listed markets, but also of the company's resources

Only once a company completes both steps of the analytical study process can a decision be made regarding the optimal mode of entry for a chosen market.

### Step 1

A general analysis of available markets is based on the evaluation of gathered macroeconomic data as well as data concerning the market of interest. Data can be clustered into the following four categories: general economic situation, external environment, population and relevant market sector data.

The cluster *General economic situation* includes but is not limited to the following indicators:

- GDP (PPP) in USD
- GDP growth per capita (PPP) in %
- Inflation rate
- Unemployment rate
- Labour productivity (e.g. GDP per occupied person)
- Nominal effective exchange rate

The cluster *External environment* includes but is not limited to the following indicators:

- Political stability
- Safety risk
- Ease of doing business rating
- Global competitiveness index
- Corruption perception index

The cluster *Population* includes but is not limited to the following indicators:

- Population size
- Population growth rate
- Demographics
- School enrolment rate

The cluster *Relevant market sector data* includes but is not limited to the following indicators:

- Total market volume of a given product (i.e. passenger cars)
- Growth rate of the market (period of 3-5 years)
- Market saturation

## **Step 2**

For a detailed analysis of the short-listed markets and the company's resources it is best to use the approach of Shen, Puig and Paul (2017), who categorize the determinants necessary for the evaluation of a suitable entry mode choice into the following five levels:

- Host country
- Industry/market
- Investment/business
- Company
- Home country

The *Host country level* examines factors like the geographical distance from the home country, the regulatory and legal conditions, the difference between own and local culture, language barrier.

The *Industry or market level* evaluates factors like the market demand and market volatility, the cost of labor, the position of competitors, distribution channels, advertising costs and the availability of resources.

The *Investment and business level* considers factors like the assets to be shifted to the target market (i.e. technology, knowledge, and management expertise), the size and duration of the project, market entrance speed, the rationale behind the expansion.

The *Company level* assesses factors like the experience in the homeland, international experience, financial resources, shareholders structure and the characteristics of the top management.

The *Home country level* examines factors like the cultural aspects in the home country, regulatory barriers and economic factors (e.g. lending rate, exchange rate).

## **1.2 Definition of market entry modes**

Once the data for the above-mentioned determinants is gathered and evaluated, a company is in the position to make an educated decision as to the mode of entry for a selected market. The following paragraphs provide an overview of possible market entry modes, which can be applied. The market entry modes can be divided into two main groups: competitive modes and cooperative modes (Calvelli, Cannavale, 2019).

A competitive market entry mode, as the name suggests, is characterized by confrontation of the company entering a market with the political and business environment, as well as locally present competitors. The company is new to the market and hence possesses limited knowledge about local conditions, does not have experience of doing business in the country of interest, must deal with cultural differences and language barriers. Faced with all of the above, the company must confront and solve those issues by itself. The following types of entry fall under the competitive modes category:

- Export
- Foreign direct investment (FDI)
- Merger & Acquisition (M&A)

## **Export**

Export is most probably the easiest way of entering a foreign market. The finished product is transported to the target market, where it is distributed and sold. The company entering the market can distribute by engaging a local distribution company or can set up a local office, to handle the distribution and sales. The advantages are low initial cost, quick market entry and limited risk.

## **FDI**

Foreign direct investment entails the establishment of a subsidiary for the business intention in the target market. The company, which sets up a subsidiary, has the option between a Greenfield investment and a brownfield investment (Tulung, 2017). A Greenfield investment means the company entering the market has to build its operations from ground zero. In order to obtain a fitting location the local real estate must be screened and purchased. The operation processes must be implemented in the new facility. Local staff has to be hired and trained. The new subsidiary must be integrated into the existing business and organizational structure of the mother company. In case of brownfield investment, the steps to be undertaken are in essence the same, with the difference, that the company entering the market purchases an existing operating facility. The brownfield approach is less costly and shortens the set-up time. Here it is important to note, that companies are more likely to enter a foreign market if the government provides adequate support and incentives. Schröder (2017, p. 7) argues that in developing countries: "Policy should be strategically employed to attract desired investment and production to develop the economy".

## **Merger & Acquisition**

In the case of M&A, the company entering a market has two options: either join forces with a local company in a given market sector. The company entering the market and the local company fuse together to establish a new legal entity. While this entry mode facilitates quick market entry and access to local experience and resources, it also has drawbacks in the form of restructuring to align the organization between the two companies, as well as integration and adaptation costs (Calvelli, Cannavale, 2019, Tulung, 2017). Similar issues are common in the case of acquiring a local company.

A cooperative market entry mode, as opposed to competitive mode, is characterized by companies working together and taking advantage of resulting synergies, to achieve a competitive advantage on the market. The two most common forms of cooperative market entry modes are:

- Joint Ventures
- Strategic Alliance

### **Joint ventures**

By establishing a joint venture, the companies involved create a new business entity with a specific set of objectives. The advantages for participating parties are achieve synergies and economies of scale, which stem from the combining of resources, assets and efforts for the same purpose. At the same time, the parties involved in the undertaking also share the risks and cost associated with the venture. Just as with a merger, there are downsides to a joint venture. There will be resources and cost related to the establishment of a new company. The setting up of a new organizational structure, the definition of the responsibilities and competencies and the integration of distinct cultures and management styles can be a challenge. Further, it may prove to be difficult to reach the same understanding of the objectives of the joint venture. Hence, it will take time and resources before a joint venture yields fruits. An example of such a mode of entry is the joint venture between VW Group and the Chinese manufacturer JAC signed in 2017, with the aim to jointly develop e-mobility and provide access to the commercial vehicles market in China (VW AG, 2017).

### **Strategic alliance**

A strategic alliance is a form of collaboration between companies, based an agreement to share resources or cooperate in a certain field (e.g. research and development) and achieve mutual goals. An alliance can be short-term or long-term. This form of market entry does not entail the creation of new legal entity, but is based on sharing of expertise and assets, like distribution channels, manufacturing capacity or technological expertise. In general, it can be said, that each party possesses a certain market advantage, which the other party does not and thus both benefit from the relationship (Bai, 2019, Calvelli, Cannavale, 2019). The latest example of a strategic alliance in the automotive industry is the alliance between

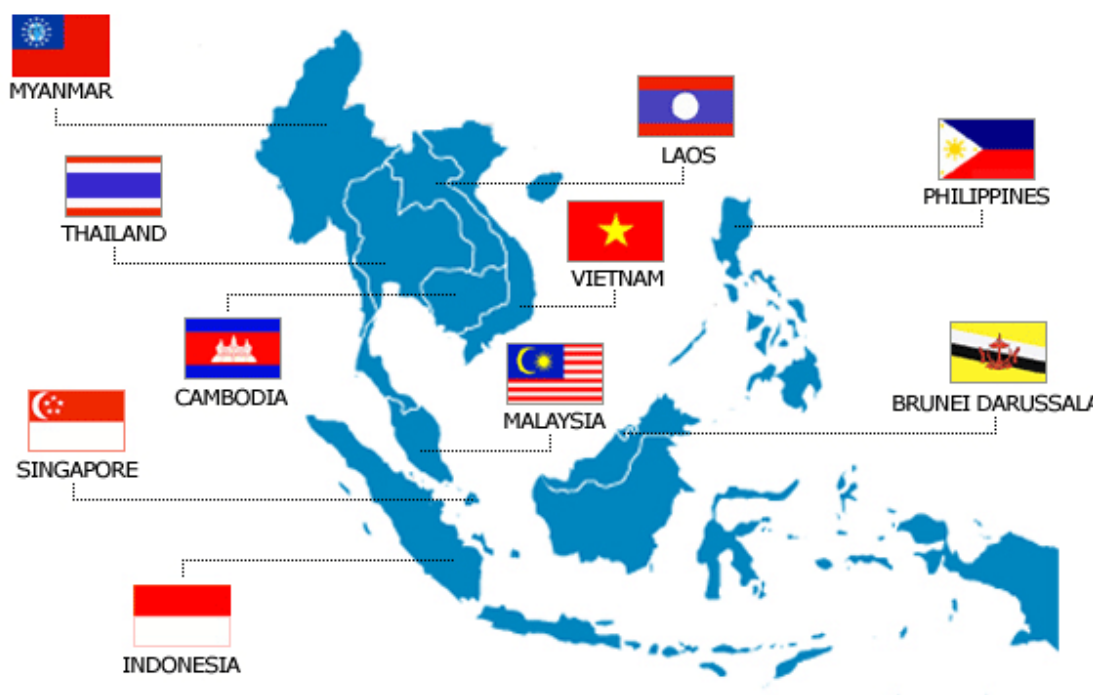
VW and Ford, signed in the beginning of 2019. The aim is to join efforts in developing commercial vans and medium-sized pick-ups (CNN, 2019).



## 2 Automotive market in the ASEAN region

### 2.1 An overview of the ASEAN region

ASEAN is an abbreviation for Association of South East Asian Nations. The association exists since 1967 with the signing of the ASEAN Declaration (also known as the Bangkok Declaration) by Indonesia, Malaysia, the Philippines, Singapore and Thailand on August 8<sup>th</sup> 1967 in Bangkok, Thailand. The other members, namely Brunei Darussalam, Vietnam, Laos, Myanmar (Burma) and Cambodia, joined in the following years, with the last country joining in 1999.



Source: (ASEAN Automotive Federation, 2019)

**Figure 1 - Map of ASEAN region**

According to the declaration the aims of ASEAN are:

- accelerate economic growth, social progress and cultural development
- promote regional peace and stability
- promote active collaboration and mutual assistance on matters of common interest
- provide assistance to each other

- collaborate more effectively for the greater utilisation of agriculture and industries; expand trade
- promote Southeast Asian studies
- maintain close and beneficial cooperation with existing international and regional organisations (ASEAN, 2019).

The ASEAN region covers a land area of 4,435 thousand km<sup>2</sup> and combined is the seventh largest region in the world. The sea area of ASEAN is approximately three times larger than its land surface. The total population is 645 million, thus ranking 3<sup>rd</sup>, after China and India (CIA, 2019). For map see Fig. 1.

The GDP growth rate in 2018 was 5,2% again ranking third among large economies following China and India. If regarded as a single economy ASEAN is the 8<sup>th</sup> largest economy in the world after US, China, Japan, Germany, India, United Kingdom and France (IMF, 2019). ASEAN is headed by three main players: Indonesia, Thailand and Malaysia. These three economies combined make up for over 64% of the total GDP of ASEAN region (ASEANstats, 2019)<sup>1</sup>.

The total automotive market of ASEAN comprised 3.5 million vehicles in 2018, thereof 2,3 million passenger cars and 1,2 million commercial vehicles (AAF, 2019). Thus, the ASEAN car market surpassed such heavy weights as United Kingdom and Brazil, with annual markets of 2.7 million and 2.4 million vehicles respectively. In the world, the ASEAN automotive market ranks 6<sup>th</sup> after China, US, Japan, India and Germany<sup>2</sup> (OICA, 2019). The ASEAN PC automotive market is forecasted to grow at a CAGR of 2,8% to reach a market of 4,1 million units by 2023 (VW AG, 2015). The following main factors are driving the growth of the car market in the region:

- Rapid economic growth: 4,7% in 2020, and on average 4,8% until 2024 (OECD, 2019)
- Consequently increasing purchasing power and rising local demand
- Large population base with projected growth of +70 million by 2035 as compared to 2018 (PRB, 2019)

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<sup>1</sup> For detailed information of relevant basic indicators and key macroeconomic indicators see Figure 12 and Figure 13 in Appendix

<sup>2</sup> Comparison based on sales figures for 2018

- Very low car density: 71 cars/1000 people in 2017; for comparison the car density in Czech Republic is 543, Germany – 642, Russia – 371, Brazil – 248 (EY, 2019)

## **2.2 Classification of the automotive market**

Before delving deeper into the individual markets it is important to understand how car manufacturers look at an automotive market. A passenger car market is judged by the following criteria: class (or quality), segment (size) and body style.

Class is defined by craftsmanship and materials used for assembly, which ultimately is mirrored in the price positioning of a brand. Generally a market can be divided into four main classes:

- economy
- standard
- premium
- luxury

Economy class is represented by vehicles of lower quality, made from modest materials for customers with limited income – e.g. Chinese brands, Tata, Lada, Dacia, Proton. This class is fairly small in Triad countries, but can be of substantial size in BRIC and ASEAN countries, see Figure 15 in the appendix.

Standard class is defined by vehicles of sufficient quality, made from adequate materials, with an excellent price-to-value ratio – e.g. Japanese brands, American brands, VW, Opel, FIAT, ŠKODA. The standard class targets middle-income families and has by far the largest share of an automotive market whether in Triad, BRIC or ASEAN countries, see Figure 15 in the appendix.

Premium class offers vehicles made from high quality materials, with above average fit and finish – e.g. Audi, BMW, Lexus, Mercedes, Jaguar. It targets the upper class of society and consequently its size is significantly smaller than that of the standard class.

Luxury class is defined by vehicles of supreme quality, manufactured from excellent materials in small numbers – e.g. Bentley, Rolls Royce, Ferrari, Lamborghini, Bugatti.

The definition of a segment differs from continent to continent and region to region. For example, in the US vehicles are classified by cubic feet and weight (DOE, 2019). In Europe, segments are not clearly defined, but rather separated based on comparison (i.e. “Golf” class are cars the size of a VW Golf, like Ford Focus or ŠKODA Octavia). However, in the past, the EU has also classified cars by segments alphabetically (CEC, 1999):

- A – mini cars
- B – small cars
- C – medium cars
- D – large cars
- E – executive cars
- F – luxury cars
- S – sport coupes
- M – multi purpose cars
- J – sport utility cars (including off-road vehicles)

It follows then that classification or segmentation of vehicles is subjective and there is no single standard accepted worldwide. However, the alphabetical classification listed above is widely used among OEMs, with certain variations from manufacturer to manufacturer.

KPMG, in their analysis Global Automotive Retail Market, shows their version of vehicle classification, which for the most part corresponds with those widely accepted by OEMs. For an illustration see Figure 16 in the appendix.

Body style denotes the shape of a car body and its intended use. The main categories are as follows:

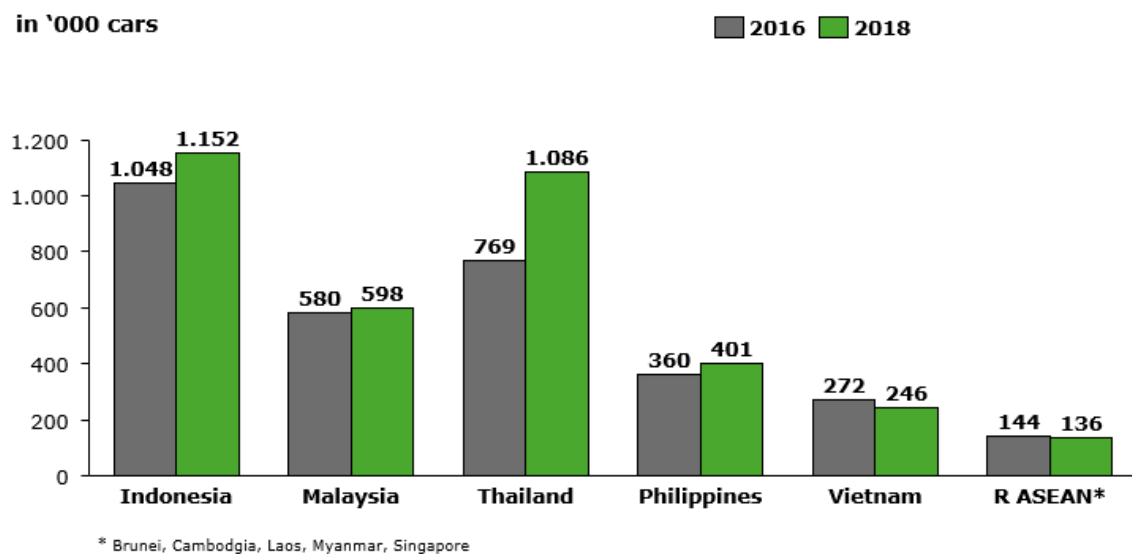
- Sedan (VW Passat, ŠKODA Octavia, Audi A4)
- Hatchback (Audi A3, Opel Astra, Toyota Verso)
- SUV (Hyundai Santa Fe, VW Touareg, Ford Kuga)
- MPV (VW Sharan, Opel Yafira, Ford S-MAX)
- Estate (Peugeot 308 SW, Renault Laguna GT, Superb Combi)

When an OEM considers a particular market an analysis is made from the point of view of all of the above mentioned criteria: class, size and body style. The outcome

is an overview of the given market with a sales volume assigned to each segment. Based on the analysis OEM identifies high-volume segments and segments with growth potential. An example of such an overview can be seen in Fig. 3.

### 2.3 The automotive market of ASEAN

Since Indonesia, Thailand and Malaysia are the three main economic pillars of ASEAN it follows that these three countries also have the largest car markets, see Figure 2.

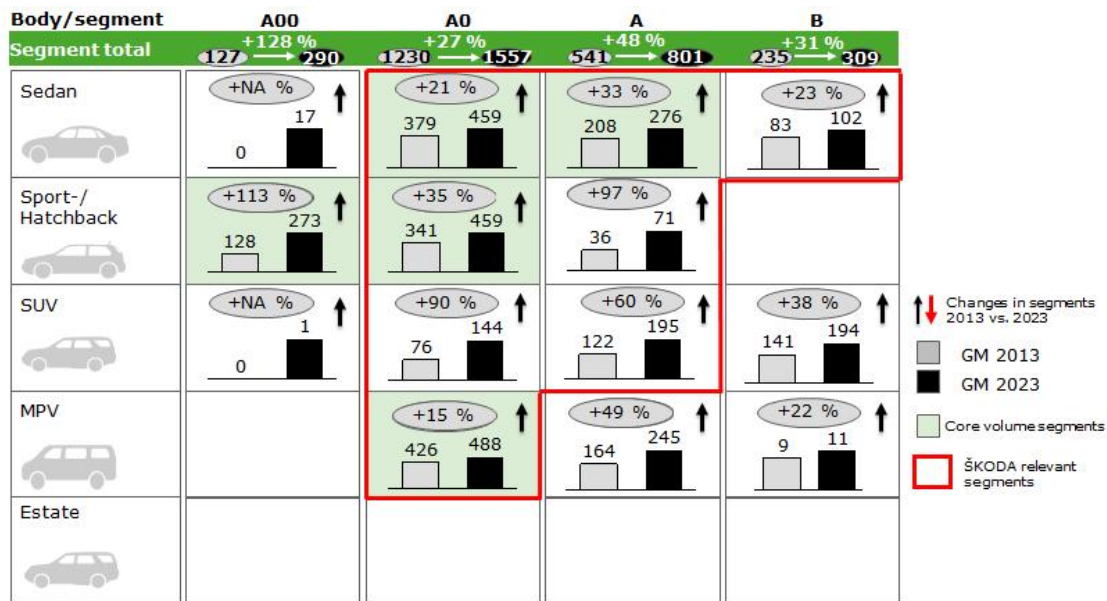


Source: (OICA 2019, own elaboration)

**Figure 2 – ASEAN PC market development 2016 - 2018**

Combined these countries make up approximately 78% of the entire automotive market in the region, as can be seen in Figure 14 in the appendix. Aside from vehicles sales Thailand, Indonesia and Malaysia also leader the region in the automobile assembly and manufacturing of components (Ariffin, Sahid, 2018). In view of this fact the remaining part of this thesis shall focus solely on the car markets of Indonesia, Thailand and Malaysia, being referred to as the “Top three”.

Fig. 3 below shows the results of an analysis of the Top three conducted by ŠKODA AUTO a.s. in 2013. In order to better understand the data one must know that VW Group classifies car segments slightly different than the rest of the industry. Thus, in the VW Group its segment A00 corresponds to the regular A segment, A0 to B, A to C and B to D.



Source: (ŠKODA AUTO a.s., ASEAN Strategy 2013)

**Figure 3 - Segmentation of car markets in Indonesia, Malaysia, Thailand**

Body styles are listed on the left side of the table. Segments are listed on the very top, from left to right. *Segment total* lists the size of a segment in the year 2013 and in the year 2023, with respective growth in % listed above. Arrows in the graphs indicate the development of a given market segment according to body style. For example A00 => Sport/Hatchback shows that over the next ten years this particular segment will grow by 113% from 128 ths. to 273 ths. cars per year.

Segments with a light green background denote the core segments of the market, or segments with the highest volume. Segments outlined red represent those which can be addressed by ŠKODA with its model portfolio.

## 2.4 Specifics of the automotive market in Indonesia, Malaysia and Thailand

**Indonesia** is the strongest economic player among all ASEAN members. Its GDP is 2,1 times greater than that of Thailand and 2,9 times greater than that of Malaysia (ASEANstats, 2019). Consequently, the Indonesian car market is the largest in the ASEAN region and constitutes over 40% of the total Top three markets.

Similar to its neighbours, Malaysia and Thailand, Indonesia went through a period of tremendous economic growth in the years 2009 – 2018. During that period the GDP increased from 539 bn. USD to 1.042 bn. USD and the GDP per capita rose from 2.261 USD to 3.893 USD.

The car market in Indonesia mirrored that development jumping from 765.000 cars in 2010 to 1.070.000 cars in 2017, reaching an exceptional growth of 40%. Despite having the largest market, the car density in Indonesia is 52 cars/1000 people and is the lowest among the Top three. This is due to the fact that Indonesia, with a population of 264,2 million, is the most populous country in ASEAN (for comparison the population of Malaysia is 32,4 million and of Thailand 66,4 million)<sup>3</sup> (OECD, 2019). The main segments are MPV, SUV and LCGC, with a market share of 46%, 18% and 22% respectively (Ipsos, 2016)<sup>4</sup>.

The LCGC is characterized by low-priced, fuel/efficient A0 hatchback models from Japanese OEMs (Toyota, Daihatsu, Honda, Nissan, Suzuki) who hold nearly 100% of the segment.

In LCGC segment Indonesian customers prefer a manual transmission over an automatic (76% vs. 20%), while in A segment the preferences are the exact opposite: 24% manual and 75% automatic transmission. Segment B is 95% automatic. Just as in Malaysia and Thailand, Indonesian customers prefer engines with a small displacement of 1,2L in A0 segment, 1,8L and 2.0L in A segment and 2,4L in B segment. All engines are 100% petrol; no diesel or CNG engines are offered on the market (ŠKODA AUTO a.s., 2012).

Generally, it can be stated that the mainstream customer prefers a vehicle in A0 segment (A segment as 2nd choice), with a manual transmission and an engine of 1,2L.

The automotive market **in Malaysia** has been growing steadily over the last few years: from 536.000 in the year 2009 to 572.000 in 2017 (21% of total Top three volume). Due to highest GDP per capita (11,238 USD in 2018) and its continuous growth the car density in Malaysia is by far the highest among the Top three: 424 cars/1000 people (Thailand: 232; Indonesia: 52).<sup>5</sup> The main segments are A00, A0 and A with a market share of 10%, 50% and 30% respectively (ŠA, 2013)<sup>6</sup> The addressable segments for OEMs from Europe (based on example of VW and

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<sup>3</sup> Data for y. 2018

<sup>4</sup> Data for y. 2016

<sup>5</sup> Data for y. 2017

<sup>6</sup> Average for 2012-2022 - rounded value

ŠKODA) are A0 Sedan and Hatchback, A and B – Sedan (ŠKODA AUTO a.s., 2012).

The market is clearly divided between Economy and Standard classes due to the existence of local Malaysian brands: Perodua and Proton. These two brands offer low-cost products at a very competitive price. This is possible due to the no-frills character of the vehicles and substantial subsidies from the Malaysian government. Perodua and Proton occupy the Economy class, while established OEMs occupy the Standard and higher classes of the Malaysian market.

Approximately 65% of customers in Malaysia prefer an automatic transmission to a manual one. In the higher segments the preference for automatic transmission comes close to 100%. Nearly 100% of customers prefer petrol to diesel engines, irrespective of class or price segment, see Figure 17. Engines with a small displacement (up to 1,5L) are standard in the A0 segment; customers in A segment prefer stronger engines with displacement of 1,8L to 2.0L. Segment B is dominated by engines with a displacement of 2.0L (ŠKODA AUTO a.s., 2012).

In general it can be said that the mainstream Malaysian customer prefers a vehicle in A0 segment, with a strong tendency to Sedan body style, though Hatchback is the 2nd most common choice. In both cases a customer would choose an engine not exceeding 1,5L in size, preferably with an automatic transmission.

In contrast to the automotive market in Malaysia, the development of **Thailand's market** was not linear but went through periods of explosive growth and rapid decline. In the year 2009 the market constituted approximately 550.000 cars. In 2010 the market jumped by 45% to 800.000 and in 2012 dramatically increased by 87% to 1.436.000 cars. However, until the year 2018 the market in Thailand declined by 27,5% to 1.042.000 cars, though it still constitutes 38% of total Top three volume (ASEANstats, 2019). This rapid development can be traced back to rising economic prosperity in Thailand, and as a result a higher disposable income of the population. In 2010 the GDP was 341 Bn. USD, with a GDP per capita at 5.076 USD. In the year 2018 the GDP was 505 Bn. USD and GDP per capita was 7.273 USD (Statista, 2019), (World Bank, 2019).



The car density is 232 cars/1000 people<sup>7</sup>. The main segments are similar to the ones in Malaysia; A0, A and B, with a market share of 46%, 32% and 16,7% respectively<sup>8</sup>. Addressable segments for European mass OEMs (based on example of VW and ŠKODA) are A0 Sedan and Hatchback, A Sedan and B Sedan (ŠKODA AUTO a.s., 2012).

Customers in Thailand are even more inclined to an automatic gear box than Malaysian customers. On average, 80% of them choose an automatic transmission over manual or semi-automatic transmission in A0 and A segments. In segment B customers choose an automatic transmission every time. Besides petrol engines, quite a large number of customers prefer vehicles with CNG engines (5% in A0 segment, 23% in A segment), while segment B is dominated by petrol engines, see Figure 18.

In A0 segment Thai customers prefer engines with a displacement of 1,5L. In A segment the share of 1,6L engines remains close to 40%, but engines with larger displacement (1,8L and 2.0L) are also popular. Segment B is dominated by 2.0L engines, with 2.4L engines as a second choice (ŠKODA AUTO a.s., 2012).

A typical Thai customer thus prefers an A0 or A class Sedan (Hatchback as next best alternative), with an automatic transmission and a petrol engine of 1.5L or 1,6L displacement.

## **2.5 Positioning of European automotive brands in Top three**

As of the year 2018 the following European brands were present on the markets of Indonesia, Malaysia and Thailand :

- Audi
- BMW
- Jaguar
- Land Rover
- Mercedes-Benz
- Mini
- Peugeot

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<sup>7</sup> Data for y. 2017

<sup>8</sup> Average for 2012-2022 - rounded value

- Porsche
- Renault (Indonesia, Malaysia)
- Volkswagen
- Volvo (Thailand, Malaysia)

From the above list it may seem that European OEMs are fairly successful as so many of them are present on the market. However, in order to gain a more accurate understanding of their position one must also look at the sales volume of the above brands, see Figure 19. Based on available data European brands combined sold a total of 77.807 cars in 2018 and gained a meager total market share of 3%. This position was achieved mainly due to sales in the Premium class which jointly accounted for 83% of all European sales (lead by Mercedes-Benz, followed by BMW), while sales in the Standard class accounted only for 17% of all European sales (lead by VW, followed by Peugeot). Keeping in mind that the Premium segment is less than 10% of the market and the main volume is carried by Economy and Standard class, the actual position of European brands is worse than it appears even at a second glance.

In summary, the position of European mass OEMs on the markets of Indonesia, Malaysia and Thailand is extremely weak. European brands are to a certain extent present in Premium class; however, in Economy and Standard class their presence is marginal.

In the year 2016 the following Asian brands were present on the markets of Indonesia, Malaysia and Thailand:

- Chevrolet (from South Korea, formerly Daewoo)
- Daihatsu (Indonesia, Malaysia)
- Datsun (Indonesia)
- Honda
- Hyundai
- Isuzu
- KIA
- Lexus
- Mazda
- Mitsubishi
- Nissan

- Subaru
- Suzuki (Thailand, Indonesia)
- Toyota

The same as with European brands it is important to look at the sales volume of each brand in particular and all brands combined, see Figure 20. From those figures it is evident that Japanese OEMs hold a total market share of 75%. Toyota alone occupies 26% of all sales and is the number one manufacturer by volume in the Top three. Toyota is also the market leader in Indonesia and Thailand and 4<sup>th</sup> in Malaysia. Honda is the runner up after Toyota, accounting for 14% of all sales in the Top three markets. In comparison, the sales volumes of other Asian manufacturers are more modest, oscillating around the 200.000 units mark (Daihatsu, Isuzu, Mitsubishi). The above sales volume comes almost to 100% from the Economy and Standard classes, since none of the Asian brands<sup>9</sup> compete in Premium class.

The bestselling models of Asian OEMs are<sup>10</sup>:

- Indonesia<sup>11</sup>
  - Toyota Avanza
  - Daihatsu Siga
  - Honda Brio
  - Mitsubishi Xpander
- Malaysia
  - Honda City (33.676 cars)
  - Toyota Vios (22.488 cars)
  - Honda HR-V (16.706 cars)
  - Toyota Hilux ( 16.602 cars)
- Thailand
  - Toyota Hilux (142.829 cars)
  - Isuzu D-Max (142.791 cars)
  - Toyota Vitz (67.633 cars)
  - Ford Ranger (55.069 cars)

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<sup>9</sup> Except for Lexus

<sup>10</sup> Data for y. 2018

<sup>11</sup> Sales volume not available

From the above data it is evident that Asian brands dominate the ASEAN market, especially in Standard class, but also in Economy class, while Premium class is not targeted.

Comparison between positions of Asian vs. European manufacturers raises the question: Why are Asian OEMs highly successful in ASEAN? What prevents European brands from strengthening their market positions?

Before answering these questions and in order to understand the underlying reasons, one must first become acquainted with the process of vehicle assembly.

### 3 Vehicles assembly in the ASEAN region

#### 3.1 Productions depth

One might ask how vehicle assembly is related to market positioning or sales volume in general and in ASEAN in particular. How are sales results and production related? The answer is: it depends on the market conditions in a given country. For unprotected markets, with minimal or no import barriers OEMs can import vehicles as FBU. Markets protected by duties and taxes require manufacturers to set up vehicle assembly locally. Since ASEAN markets are heavily protected, it is of importance to examine various production depths, to gain an understanding of the alternatives an OEM has at its disposal. There are four assembly depths, which differ in complexity: SKD, MKD, CKD and FSP. Higher complexity translates into higher investment, operating costs and production cost per unit, ultimately influencing the final sales price and the competitiveness of a brand. The next few paragraphs illustrate the particulars of each production depth.

**Semi-knocked down (SKD)** is the simplest kind of vehicle assembly. In essence, an SKD assembly set is a completely built vehicle, which was partially disassembled after completion. The set consists of the following parts:

- A fully furnished car body, including front end and bumper
- Wheels
- Exhaust system
- Front and rear axle
- Power plant (engine, gearbox, hang-on parts)

These parts are packaged into specially designed containers (see Figure 21) and shipped from the production plant to the assembly site in a given destination. A typical SKD assembly site consists of a warehouse, assembly, finish and repair area and a test track (see Figure 22). SKD sets are unloaded at the warehouse and sequenced for assembly. In the assembly area the car body is lifted and power plant, rear axle, exhaust system, and wheels are installed, followed by filling of liquids (e.g. antifreeze, air conditioning, etc.). Once the assembly process is completed, the car is taken to a test track (testing of the vehicle on various terrain) for a short test drive and then for a water test. The finish and repair area is designated for elimination of

uncovered defects. Following final inspection the vehicle is declared completed and shipped to a showroom.

SKD assembly has a number of advantages:

- Low (dis)assembly and transportation costs
- Simple (dis)assembly process and short training time of personnel
- Low initial investment for an SKD assembly site
- Short production ramp-up time

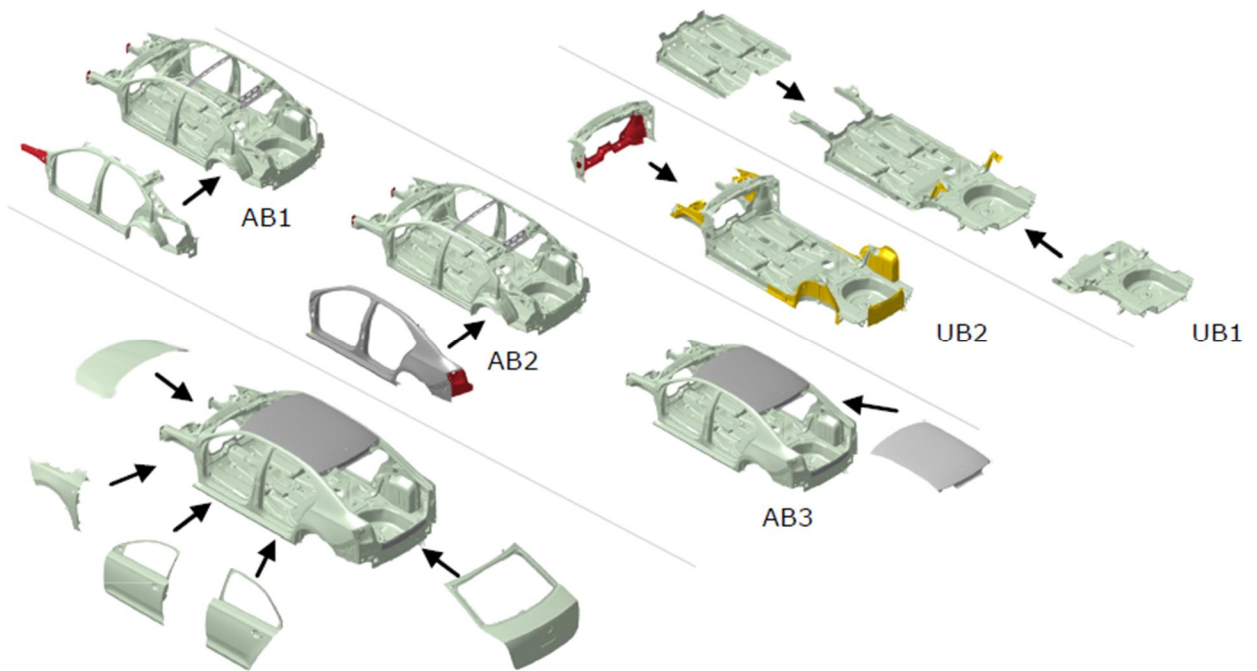
SKD assembly can be set up within 6 – 8 months on a brown field site (meaning building and infrastructure already exist). Twelve months are required if an SKD plant is to be built on a green field (meaning nothing but the parcel is available).

Short lead time, low investment and consequently the ability to break even with low production volume make this type of assembly very attractive.

**Medium-knocked down (MKD)** assembly has a deeper level of production as compared to SKD. Instead of shipping a nearly completed vehicle, which can be assembled within a matter of few hours, MKD is, in essence, the setting up of a complete assembly line in a given country. Thus, a painted car body and other components (power unit, rear axle, fuel tank, exhaust, windows, doors, wheels, cockpit and interior) are shipped to a given MKD production site, where the assembly of a FBU takes place. MKD assembly can be set up within 12-18 months on a brown field location.

Investment for an MKD plant is much higher than for SKD, since it requires larger infrastructure, more equipment, higher logistics complexity and a skilled staff. The cost per unit is also substantially higher due to high logistics costs (an MKD vehicle requires more transport volume, since the parts are transported separate from the vehicle) and higher initial investment. Consequently, in order for an MKD production to be financially feasible the production volume should be at least 5.000 units/model/year.

**Completely-knocked down (CKD)** is the next step upwards in production complexity. It means that the entire vehicle is produced at a given plant from basic components. Fig. 4 below provides an overview of the production depth in the welding shop:



Source: (ŠKODA AUTO a.s., 2013)

**Figure 4 – CKD Production Depth (UB – under body; AB – actual body)**

A CKD production plant consists generally of the following three areas: welding shop, paint shop and assembly shop. Components are not necessarily sourced locally (in the country of production) but can also be imported. In the welding shop the body of a car is welded by robots and through manual labor. The welded body is then transported to the painting shop where it is cleaned, galvanised, painted and given a clear coat. From the paint shop the car body is transported to the assembly shop where it receives a power unit (engine and gear box, front axle), rear axle, fuel tank, exhaust, windows, doors and wheels. The body is also completely furnished inside (wiring, cockpit, seats, steering wheel, etc.). The remaining process is the same as with MKD, the FBU vehicle undergoes a test drive and a water test. Following final inspection it is ready to be shipped to a showroom.

CKD production is a highly complex with a very high initial investment and is only viable for high volume (over 20.000 units/model/year) projects. The lead time for CKD production is 18-24 months on a brown field.

**Full-scale productions (FSP)** is a CKD production plant, which in addition to the welding shop, paint shop and assembly, has at its disposal a press shop (could be outsourced) and engine assembly. The production process is the same as in a CKD plant, but the body parts are pressed locally, and the engine is assembled locally.

FSP production is set up in countries with high sales potential and an existing automotive supplier network, so as to facilitate sourcing of parts locally and reduce logistics cost. Investment into a FSP plant varies from manufacturer to manufacturer but in general ranges between 0,6 to 1,0 billion €. To justify such an investment the production volume must be over 300 000 units/year.

### 3.2 An overview of passenger car manufacturing in ASEAN

Of the Top three countries, Malaysia has the lowest production volume per year. In 2017 the total production volume of PC constituted 500.000 units. The main production volume is generated by local Malaysian brands Perodua and Proton, followed by the Japanese brands Honda, Toyota and Nissan. Source: (Motor Trader, Paultan, own elaboration)

5 below provides an overview of production volume of selected brands.

Brand	Production p.a.
<b>Perodua</b>	184.000
<b>Honda</b>	106.000
<b>Proton</b>	77.000
<b>Toyota</b>	56.000
<b>Nissan</b>	18.000
<b>Isuzu</b>	11.000
<b>Mercedes</b>	12.000
<b>BMW</b>	10.000
<b>Volkswagen</b>	6.500
<b>Volvo</b>	1.900
<b>Peugeot</b>	1.900

Source: (Motor Trader, Paultan, own elaboration)

**Figure 5 – Production volume by brand in Malaysia, data for 2017**

All of the above OEMs, produce vehicles as CKD, with the exception of Proton and Perodua, who run FSP. As is clearly visible from the above data European OEMs,



though present, cannot boast high numbers. With the exception of Mercedes, none of those present (BMW, VW, Volvo, Peugeot) assemble more than 10 000 vehicles per year.

The automotive industry of Thailand is the most developed and has the largest production volume of PC cars in the ASEAN region. In 2017 a total of 1.989.000 vehicles were manufactured in Thailand. The market is heavily dominated by Japanese automakers, lead by Toyota and followed by Mitsubishi, Mazda, Isuzu, Honda and Nissan. Combined these OEMs boast a market share of over 70%. Figure 6 below provides an overview of installed production capacity of selected brands.

Brand	Production p.a.
<b>Toyota</b>	462,000
<b>Mitsubishi</b>	275,000
<b>Ford &amp; Mazda</b>	247,000
<b>Isuzu</b>	232,000
<b>Honda</b>	225,000
<b>Nissan</b>	199,000
<b>Ford</b>	160,000
<b>Mercedes</b>	16.000
<b>BMW</b>	13.000
<b>Volvo</b>	1.300

Source: (Kungsri, MarkLines, BOI, own elaboration)

**Figure 6 – Production volume by brand in Thailand, data for 2018**

Of the approximately 2 million produced vehicles, around 50% are exported. The actual installed production capacity in Thailand is approximately 4 million units. Judging by the scale of production capacities it is safe to say that the first seven brands have set up FSP in Thailand. The position of European OEMs in Thailand is identical to the one in Malaysia. In both countries European OEMs do not even

break the 1% mark. Even though Mercedes has a higher production than in Malaysia, it is insignificant compared to the market size.

The PC market in Indonesia is the largest in the ASEAN region. A total number of 1.151.714 units (Thailand 1.042.000, Malaysia 598.000) were sold in the year 2018. In the same year the total number of manufactured PC vehicles constituted 1.343.714 units. The market situation in Indonesia is similar to the one in Thailand, with the only difference that the Japanese automakers absolutely dominate the market with a market share of over 90%. Once again the market leader is Toyota, who has an exceptionally strong position, owning 36% of the market. Fig. 7 provides an overview of installed production capacity of selected brands.

Brand	Production p.a.
<b>Toyota</b>	537,000
<b>Honda</b>	195,000
<b>Daihatsu</b>	185,000
<b>Suzuki</b>	113,000
<b>Mitsubishi</b>	67,000
<b>Nissan (Datsun)</b>	36,000
<b>Isuzu</b>	14,000
<b>BMW</b>	2,100
<b>Mercedes</b>	2,000
<b>Volkswagen</b>	138
<b>Renault</b>	99

Source: (GAIKINDO, own elaboration)

**Figure 7 – Production volume by brand in Indonesia, data for 2016**

Just as in Thailand and Malaysia, the position of European OEMs is extremely poor. Neither of the OEMs break the 5.000 mark and while BMW and Mercedes show low number, Volkswagen and Renault are basically not present on the market.

## **4 Entering the ASEAN automotive market – mastering the local challenges**

### **4.1 Obstacles for European OEMs in ASEAN**

The first and second part of the thesis, illustrate the weak position of European OEMs in ASEAN as compared to Japanese automakers in Thailand and Indonesia or local manufacturers in Malaysia. Only a few of them are present, sales figures are extremely low, and installed production capacity does not allow Europeans to even think about gaining a significant market share. What are the reasons for such low performance? What are the hurdles European manufacturers are facing? This section of the thesis will identify and illustrate two main obstacles, which prevent the OEMs from Europe from succeeding.

The two obstacles being the following:

1. Trade barriers - customs duties and taxes
2. Local conditions – culture, mentality, distance

### **4.2 Overcoming the trade barriers in the Top three markets**

The ASEAN region is a community of countries with exceptionally strong economic growth, abundant human capital and natural resources. To utilize these advantages to its fullest degree, ASEAN countries focused on developing their economies, thus creating grounds for a competitive position against the BRIC countries and first world economies. To facilitate this development ASEAN countries have signed trade agreements with each other, while at the same time protecting their individual markets through unfavourable trade conditions from outsiders and in some cases even from the ASEAN member states.

The following is an overview of the trade agreements between the ASEAN countries and the rest of the world (20):

#### **1992 AFTA (Asean Free Trade Area)**

The countries gradually lower intra - regional tariffs through the Common Effective Preferential Tariff (CEPT) Scheme for AFTA.

**1995 – 2013 WTO** ASEAN states are members of the World Trade Organisation

### **2002 ASEAN - CHINA FTA**

A framework agreement for the planned FTA was signed. The FTA, a zero-tariff market has been targeted to come into force in 2010 for the six original ASEAN members. A reduction of tariffs in the automotive industry is under discussion.

### **2006 ASEAN - KOREA FTA**

South Korea and nine members of the ASEAN signed an FTA. Thailand joined the pact in early 2009. General planned reduction of tariffs in the automotive industry until 2024.

### **2008 ASEAN - JAPAN FTA**

A Comprehensive Economic Partnership - general planned reduction of tariffs in the automotive industry (mainly parts and components) is planned.

### **2009 ASEAN - INDIA FTA**

The FTA was signed and took effect (trade in goods) with five of the ten ASEAN countries and India in January 2010 (Singapore, Malaysia, Brunei, Myanmar,, Thailand). General planned reduction of tariffs in the automotive industry until 2025.

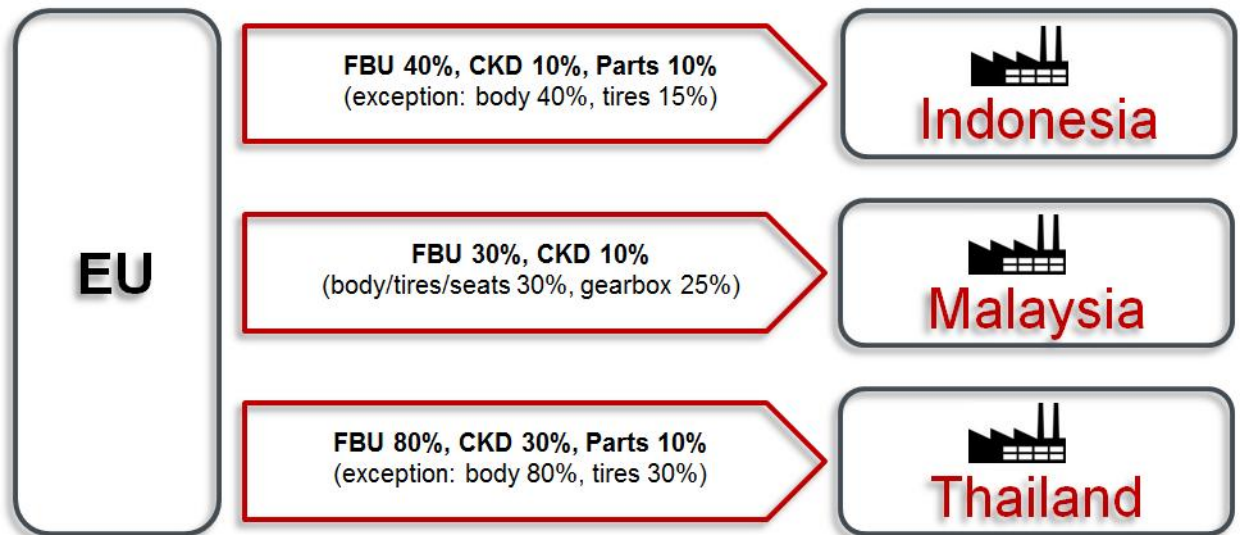
**2009 ASEAN FTA Trade in Goods Agreement** from February 26, 2009 between the ASEAN countries.

### **2010 - present ASEAN EU FTA**

Talks on an ASEAN - EU Free Trade Agreement started in 2007 but have proven to be unproductive, as the interests of the ASEAN member countries vary and aligning them proved to be an unsurmountable task. So far, the EU has signed an FTA with Singapore in 2017 and Vietnam in 2019. A gradual reduction of tariffs with Vietnam is planned over the next 10 years, this is also to include the automotive sector. Negotiations have been launched with Indonesia, Malaysia, Thailand and the Philippines (Reuters, 2019).

From the above it is evident that none of the Top three have an FTA which simplifies the access to its automotive market for any OEM. On the contrary, these markets are very well protected as the following paragraphs illustrate.

The import duties for PC vehicles from EU are shown in Figure 8 below:



Source: (AUDI AG, 2014)

**Figure 8 – Customs duties EU – ASEAN (Indonesia, Malaysia, Thailand)**

The above illustrates that import of FBU into any of the Top three markets is economically unfeasible. A 30% import duty in Malaysia automatically translates into a price increase of 30%. Considering the fact that Asian manufacturers are producing locally in the CKD mode means that imported FBU vehicles from EU are at least 20% more expensive than competing models produced locally. A twenty percent price difference is too high for a potential buyer to justify the purchase of an imported car.

To illustrate: consider that an average EXW price for a vehicle in the A0 segment in Malaysia is 16 000 €, then the price of an imported FBU from EU (under the assumption the vehicles are identically equipped and disregarding the logistics costs) is 20 800 €. Since the Standard segment is very price sensitive (as opposed to Premium segment), a difference of 4 800 € (+23%) is not rectifiable for the local customer.

Premium segment vehicles on the other hand are less sensitive to price increase because they target customers with an above average income. Hence, manufacturers like BMW or Mercedes-Benz are less affected by high import duties compared to mass brands like Ford, VW or Peugeot.

In addition to high import duties the Top three also levy excise or luxury tax on all sold vehicles. It is important to note that imposed taxes are calculated based on the value of a given vehicle, this is also known as a “tax base”. The tax base for a locally

produced vehicle is the EXW price. For an imported FBU vehicle, however, the tax base is the sum of the customs value of the car and the import customs duty paid on the car.

Figure 9 below provides an overview of the excise and luxury taxes in the Top three:



Source: (ŠKODA AUTO a.s. ASEAN Strategy 2013; Preece, 2016; own elaboration)

**Figure 9 – Excise and luxury taxes in Indonesia, Malaysia and Thailand**

Consequently, if one takes into account not only the import duty for an FBU but also the excise/luxury tax, then a vehicle imported from EU becomes overpriced to such an extent, where it is not even remotely possible to compete with locally manufactured brands. A sample calculation in Figure 10 illustrates the tremendous difference in price between a FBU imported into Thailand from EU and a car produced locally in Thailand as CKD:

FBU import from EU		CKD production <sup>1</sup>		CKD local production w/ 40% LC <sup>1</sup>	
Customs value FBU	20,000 €	Price EXW <sup>2</sup>	29,000 €	Price EXW <sup>2</sup>	24,000 €
Import duty FBU (80%)	16,000 €				
Tax base	36,000 €	Tax base	29,000 €	Tax base	24,000 €
Excise tax (20%)	7,200 €	Excise tax (20%)	5,800 €	Excise tax (20%)	4,800 €
Dealer margin (10%)	4,320 €	Dealer margin (10%)	3,480 €	Dealer margin (10%)	2,880 €
Sales tax (7%)	3,326 €	Sales tax (7%)	2,680 €	Sales tax (7%)	2,218 €
Other taxes (10%)	3,559 €	Other taxes (10%)	2,867 €	Other taxes (10%)	2,373 €
Final sales price	50,846 €	Final sales price	43,827 €	Final sales price	36,270 €
		<b>Δ CKD production vs. FBU</b>	<b>-7,020 €</b>	<b>Δ CKD w/ LC 40% vs. FBU</b>	<b>-14,576 €</b>

<sup>1</sup> CKD parts imported from EU

<sup>2</sup> CKD parts, logistics, import duty on CKD parts and production cost are included in the EXW price

Source: (own elaboration)

**Figure 10 – Price comparison FBU import from EU vs. local CKD product in Thailand**

In Thailand the difference between an FBU from EU and a vehicle manufactured from imported CKD parts from EU constitutes 7.020€. The delta is even higher if

an OEM achieves a LC of 40%, in this case the price difference amounts to 14.576€ or close to 30% making it impossible for an imported FBU to be competitive on the automotive market of Thailand. In Malaysia the situation is similar in the case of FBU vs CKD with a delta of 3.872€. However, the difference is very stark should an OEM reach a LC of 40%, constituting 12.584€. In Indonesia, the final sales price for an imported FBU is 4.356€ higher than for a CKD vehicle. In case of CKD with LC of 40% the difference is 5.808€. For details see Figure 23 and 24.

In view of the legislative conditions in the Top three it is clear that in order to gain market share an OEM must offer vehicles at a competitive price. That is possible only if an OEM sets up a CKD plant in the country. A CKD plant entails a welding shop, a paint shop and an assembly line. The cost for setting up of a CKD facility varies from OEM to OEM and is influenced by the production concept, level of automatization and installed capacity. A CKD plant with a production capacity of 30.000 - 50.000 units p.a. can be erected for 280 – 300 million € (ŠKODA AUTO a.s. Strategy ASEAN, 2013). The cost for a CKD plant with a production capacity of 120 000 to 150 000 units p.a. ranges between 500 to 550 million €<sup>12</sup>. This is a substantial investment, which must be amortized over a long period of time. During that period the write-offs will weigh heavily as a fixed cost on each produced vehicle.

The sales numbers will be very low in the first three to four years due to the fact that the brand is new on the market. The building of brand awareness to a reasonable degree with a proper marketing concept will take four to five years. Hence, at the initial stage of the project the CKD production capacity will be at 10 JPH, ensuring a volume of 20 000 to 30 000 vehicles p.a. in two-shift operation (VW AG, 2013). This will be sufficient to cover the market demand while the brand works on establishing its brand awareness.

Consequently, the full production capacity of a CKD plant will not be utilized in the first four to five years following market entry. Therefore, it is imperative to keep the production cost per unit low during this period of time.

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<sup>12</sup> Own estimate based on industry knowledge and experience

In order to minimize the production cost per vehicle an OEM must keep the investment into a CKD plant low. This can be achieved by applying the following low-cost solutions:

- Save on infrastructure
- Outsource the painting of car bodies
- Keep the product complexity low
- Keep the automatization level low
- Use service equipment for assembly

**Saving on infrastructure** - the building of the necessary infrastructure requires approximately 40% of all funds allocated for the building of a CKD plant. This is the case when an OEM chooses to build a factory on a green field – meaning the selected site is pristine, no infrastructure or buildings are on site. The alternative is to build a factory on a brown field – meaning the selected site already has buildings and infrastructure (waste, water, gas and electricity). Of course, the existing buildings and infrastructure have to be adjusted to suit the needs of the project but the total cost will be lower than building from scratch.

**Outsourced paint shop** – a painting shop is the most expensive part of a CKD plant and has the longest lead time. The equipment of the paint shop alone requires around 25% of the total budget of a CKD plant. To minimize the production cost per unit at the initial stage of the project an OEM can verify the possibility of using the paint shop of a different OEM. This is possible in case the paint shop of the other manufacturer is not running at full capacity and its equipment is suitable for painting of required models. If the equipment is not suitable it may be still possible to use the paint shop after adjusting it to suit the needs of an OEM. The investment will at any rate be much smaller than the building of a complete paint shop. An own paint shop can be erected a few years after market entry, once the sales volumes rise to 40.000 units p.a. or more.

**Low product complexity** - the product complexity or the variety of models and their features must be kept to a bearable minimum. The higher the variety of models and options, the higher the investment into machinery and equipment of a CKD plant. In the ideal case, an OEM uses only one, maximum two platforms and a limited number (two or three) of car body variations. The number of available engines must also be



restricted – ideally to one engine per model. The equipment of each model must be predefined and fixed – no optional equipment.

**Low automatization** - the automatization level is the ratio of robots to manual labor in a production facility. Manual labor is to be utilized everywhere in the CKD plant, except for operations where human force and accuracy are insufficient to carry out an operation. The most saving can be gained in the welding shop. The purchase price of welding robots, their ramp up and maintenance costly. On the opposite side, the labour in Top three is cheap. Hence, it is more efficient to install manual welding equipment wherever possible. This will translate into much needed cost savings.

**Service equipment** - automotive manufacturers use serial production equipment for assembly of a vehicle in a CKD plant: EC screwdrivers<sup>13</sup>, fluid filling equipment (e.g. brake fluid, air conditioning fluid), complex IT systems, etc. On the other hand, for the service of vehicles at dealer centres similar operations are carried out with service equipment. Service equipment is often manual and less durable but has a lower initial cost. Since the production volume is low in the beginning and grows gradually over the years, it is more economical to use service equipment instead of serial equipment for assembly. The service equipment can be replaced with serial solutions once the sales and production volume rise to the level of 40.000 units p.a. or more.

Building a CKD plant is not the only complicated task. Another complex issue is the ramp-up of a CKD site. During the ramp-up stage of CKD production one must take into account many different aspects, the most important of them being:

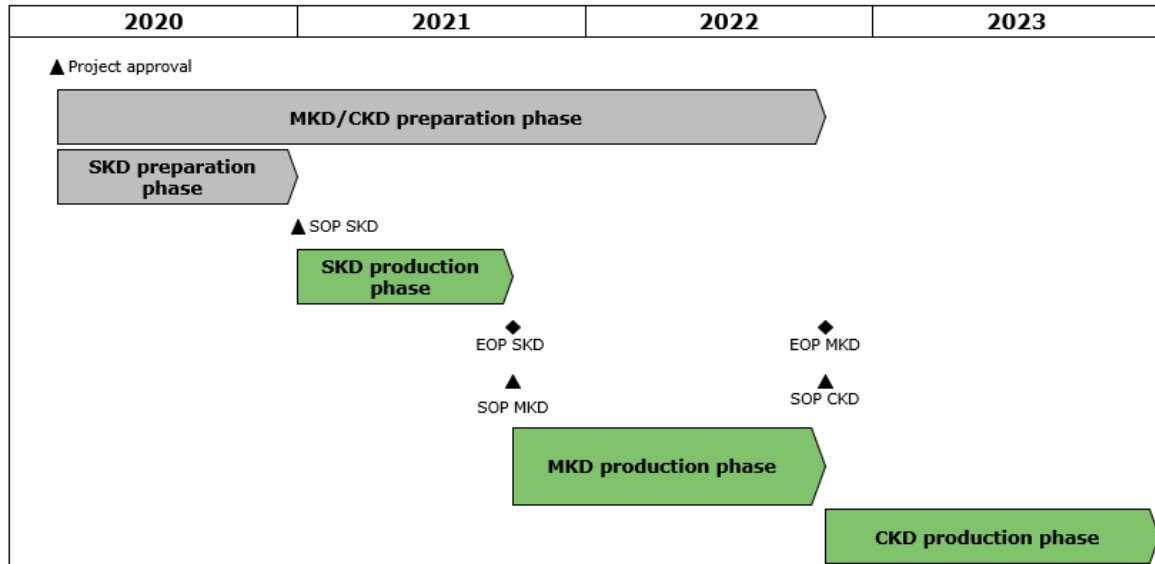
- personnel (securing seasoned professionals for key positions, the screening, hiring and training of local staff)
- logistics (in-bound, in-house and out-bound)
- quality assurance

The importance of the above issues can sometimes be overlooked and translated into lengthy and costly corrective measures. Therefore, equal attention must be paid not only to the building of a CKD plant but also to the above issues from the very beginning.

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<sup>13</sup> Electrical screwdriver with programmable torque, connected to the IT system of a plant

Ideally, the ramping-up of a new production plant occurs in three stages in order to minimize the number of mistakes and eliminate unnecessary problems: 1) SKD assembly, 2) SKD + MKD/CKD production (transitional phase) and 3) CKD production, see Figure 11.



Source: (own elaboration)

**Figure 11 – Production ramp-up plan of a CKD plant**

**Stage I – SKD production:** an SKD assembly is a fairly simple and relatively inexpensive. It can be erected and equipped anywhere between 8 to 10 months. SKD assembly also has the least complicated technical processes. Hence, it is the most suitable area to train new personnel and to implement effective and seamless processes. Therefore, the SKD assembly area is erected first and during the first 8-9 months vehicles are assembled in SKD mode. SKD is also known as screwdriver assembly and is simple enough for training. At the same time SKD assembly helps personnel to become acquainted with the automotive production and gain a basic understanding of its processes. Simultaneously, with the start of the building of an SKD facility, commences the erection of the MKD assembly shop, the welding shop and the paint shop (if the painting has not been outsourced).

**Stage II – SKD + MKD/CKD production:** this stage serves as a transitional phase between a simple SKD assembly and a more complex full-scale MKD assembly, which lasts approximately 12 months<sup>14</sup>. By definition, during the MKD assembly, a

<sup>14</sup> Actual duration depends on the ramp-up plan for a specific CKD plant

car body is shipped to the plant either painted or unpainted. Ideally, a painted body is shipped to the MKD assembly, as it is less likely to corrode during sea transport. The MKD assembly must be set up during the SKD production as a separate facility with a fully-fledged assembly line. Experienced staff from the SKD assembly is transferred to the MKD assembly. A fully-fledged assembly line encompasses among others the following main tasks: engine pre-assembly, wedding<sup>15</sup>, gluing of windows, cockpit pre-assembly and installation, seat installation, filling of liquids, IT test, driving test and water test.

During stage II the OEM completes the building and equipping of the welding and painting shops, and also begins with the ramping-up of both facilities. The ramp-up must be finished before the start of stage III: CKD production.

**Stage III – CKD production:** from this point on the plant functions as initially designed. That means all operations in the welding shop, painting shop and assembly operate in serial production mode. The SKD facility is no longer needed and can be used as a training centre for new staff. The MKD assembly becomes the assembly shop of a CKD plant. The CKD components are delivered either from the mother plant<sup>16</sup> or the OEM suppliers to the production plant, where complete vehicles are now manufactured. The production capacity in CKD phase I is maximum 40 000 vehicles per annum, which is sufficient for meeting the market demand in the 3<sup>rd</sup> to 6<sup>th</sup> year of the project. Once an OEM gains foothold and expands its market share, the installed production capacity can be increased to suit the needs of the market.

### 4.3 Understanding the local conditions in the Top three markets

Based on the analysis of brand positioning in Top three markets (i.e. sales figures, market share, production volume and installed production capacity) it is evident that European mass manufacturers (e.g. Opel, Renault, VW, ŠKODA, FIAT) either have not recognized the importance of the automotive market in ASEAN or, which is far

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<sup>15</sup> Automotive industry slang for the pairing of a car body with a power plant

<sup>16</sup> The plant responsible for initial production of models currently produced at the newly built CKD plant

more likely, for some reason are not fully committed to expand in the Top three markets.

There are three soft factors which must be taken into account by Europeans when doing business in Asia:

- culture
- mentality
- distance

**Culture:** for Europeans it is simpler to relate to and accept those cultures where the official spoken language originated from Europe (e.g. USA, Mexico, Brazil, Algiers). Obviously, the adaptation process is not painless, but it is bearable. Not so with Asia. Although many countries in Asia are former European colonies, their customs, beliefs, art, language, and food vary significantly from those in Europe. The countries in the ASEAN region are not homogenous but au contraire very diverse. Each member-country has its own unique culture, set of values, religious beliefs and legislative regulations (Itoh et al, 2018) Therefore, the adaptation process for an European in an Asian country is long and difficult. This can be a stumbling block for Europeans doing business in Asia.

**Mentality:** a typical strategy for a European company is planned for 10 years – this being perceived as long term. In Asian mentality, 10 years is not a significant period of time. Asian people tend to think in generations rather than years. A typical mistake Europeans make is to make a few business trips to Asia and expect to gain not only a common understanding, but to also conclude far-reaching business agreements with an Asian counterpart. The drop-by, fast-track approach simply does not work in Asia as Asians value relationships. Thus, in order to become successful it is imperative for Europeans to alter their thinking pattern, to comprehend that doing business in Asia is a process that requires a substantial time investment into building relationships before concluding business agreement.

**Distance:** The distance from Frankfurt to Jakarta (Indonesian capital) is over 11 000 km. The duration of a flight from Frankfurt to Jakarta on average is 15 hours. For comparison the flight from Frankfurt to Shanghai takes 11 hours (even China is closer, though to some it already seems like the end of the world). The distance makes it impossible to simply jump on a plane and pay a short visit to a production

site in ASEAN. Consequently, a project manager located in Europe will think twice before taking a business trip to ASEAN. It is clear that managing a project in ASEAN from EU is next to impossible. Yet, this is often the case. Project teams located in Europe try to steer projects in Asia, with the idea that a monthly business trip is enough. At best, a resident is sent to the particular country to be the eyes, ears and mouthpiece of the project team. A project managed in such a way is doomed. This approach can be traced to the level of commitment from the HQ of a given brand. In order to increase the chances for success a European OEM must be fully committed to the project in ASEAN and place a competent team in the country of interest. This translates into expenses, but is the only way to succeed.

Therefore, in order to be successful in ASEAN it is of utmost importance to be aware of the above soft factors: culture, mentality, and distance. To achieve this Europeans must think long-term the Asian way and be fully committed to do whatever it takes to gain a decent market share in Top three. What will not work is blitzkrieg tactics, profitability from day one, and Europe-based project management.

What does that mean in business terms? It means an OEM must make a strategic decision: “We are setting foot on the Indonesian (Malaysian, Thai) market and we are here to stay.” and then follow through on it. It means the OEM comprehends that the ASEAN market is not a “low-hanging fruit” – it will be profitable, but in the long run. It means allocating sufficient funds and deploying a capable project team in the field.

The success of VW in China is an excellent example of how to conquer an Asian market. Volkswagen was among the first European brands to enter the Chinese market and to set up local assembly plant, which among other things, propelled VW to become the absolute market leader in China (Chen, 2017, p. 246). Unfortunately, Volkswagen is also a prime example of how not to conquer the markets of ASEAN.

## Conclusion

The objective of this thesis is twofold: to identify the reasons which prevent European mass OEMs from penetrating the automotive market in the ASEAN region and to propose a road map by which automotive manufacturers from Europe can enter the market, gain foothold and play on par with existing competitors.

To meet the objective, the reader is firstly introduced to the region of ASEAN in general and the automotive market in ASEAN in particular. Three countries with the largest automotive markets are identified, namely: Malaysia, Thailand and Indonesia. An analysis of these Top three markets provides not only an overview of vehicle classes, segments, and body styles, but also information about the customer preferences. Further, the positioning of all market players is identified and the conclusion is made, that Japanese OEMs are by far the strongest and most established brands in the Top three – holding over 80% of market share.

The thesis then explains the various production depths (SKD, MKD, CKD and FSP) that are employed by OEMs and provides detailed information concerning PC manufacturing in Top three ASEAN markets. Once again, Japanese OEMs are at the front, with Toyota alone, accounting for 30% of all vehicles manufactured in ASEAN. Other Japanese brands (e.g. Honda, Nissan and Mitsubishi) also hold strong positions with a production volume of over 200 000 units p.a. each. European OEMs, however, have an extremely weak position, with a combined production volume of approximately 50 000 units p.a.<sup>17</sup>

In the final part, the main obstacles for OEMs from Europe are identified: protective import duties and taxes<sup>18</sup>. The import duties for a FBU range from 30% to 80% and excise (luxury) taxes range from 10% - 125%. Due to the above, FBUs imported from Europe are up to 28% more expensive than locally manufactured vehicles.

To circumvent the existing barriers a road map for penetrating the ASEAN automotive market is proposed. The main building blocks for success are:

- Think long-term

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<sup>17</sup> Own calculation based on researched data

<sup>18</sup> Excise and luxury taxes

- Gain foothold
- Expand gradually

Long-term mentality is the way of life in Asia and must be adopted if one plans on succeeding in ASEAN. Staying for good must be the primary goal for a European OEMs, if the business is to thrive.

The setting up of a CKD plant in one of the Top three countries is the only possible way to play on par with Japanese manufacturers and gain foothold in ASEAN. To keep the cost per unit low one must apply low-cost solutions to keep manufacturing cost down to a reasonable level.

Gradual expansion from low-volume manufacturing to large-scale production is the final step in securing one's position. Through the transition from SKD, to MKD to CKD a European mass OEM reaches higher production volume and can enjoy the benefits of the economies of scale, signaling to the Japanese competitors – "I am here to stay".

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## List of figures and tables

### List of figures

Figure 1 - Map of ASEAN region .....	16
Figure 2 – ASEAN PC market development 2016 - 2018.....	20
Figure 3 - Segmentation of car markets in Indonesia, Malaysia, Thailand .....	21
Figure 4 – CKD Production Depth (UB – under body; AB – actual body).....	30
Figure 5 – Production volume by brand in Malaysia, data for 2017 .....	31
Figure 6 – Production volume by brand in Thailand, data for 2018 .....	32
Figure 7 – Production volume by brand in Indonesia, data for 2016 .....	33
Figure 8 – Customs duties EU – ASEAN (Indonesia, Malaysia, Thailand).....	36
Figure 9 – Excise and luxury taxes in Indonesia, Malaysia and Thailand.....	37
Figure 10 – Price comparison FBU import from EU vs. local CKD product in Thailand .....	37
Figure 11 – Production ramp-up plan of a CKD plant.....	41
Figure 12 – ASEAN Member States:Selected Basic Indicators, 2018.....	53
Figure 13 - Selected Key ASEAN Macroeconomic Indicators 2018 .....	54
Figure 14 – ASEAN market growth 2008 - 2018 .....	55
Figure 15 – Sales by segment in established (Triad) and establishing (BRIC) markets.....	56
Figure 16 - Global vehicles segment definition.....	57
Figure 17 - Customer preferences in Malaysia.....	58
Figure 18 - Customer preferences in Thailand .....	59
Figure 19 – Sales of European OEMs in Top three in 2018 .....	60
Figure 20 – Sales of Japanese OEMs in Top three in 2018 .....	61
Figure 21 – Furnished car body, power plant, other parts .....	62
Figure 22 – Drawing of an SKD assembly plant.....	63
Figure 23 – Price comparison FBU import from EU vs. local CKD product in Malaysia .....	64
Figure 24 – Price comparison FBU import from EU vs. local CKD product in Malaysia .....	65

## List of appendices

Appendix 1 Additional illustrative material .....	53
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## Appendix 1 Additional illustrative material

**Table 1**  
**ASEAN Member States: Selected Basic Indicators, 2018** ASEAN Statistics

Country	Total land area	Total population <sup>1/</sup>	Population density <sup>1/</sup>	Annual population growth <sup>1/</sup>	Gross domestic product at current prices	Gross domestic product per capita at current prices		International merchandise trade <sup>4/</sup>			Foreign direct investments inflow <sup>5/6/</sup>
	km <sup>2</sup>	thousand	persons per km <sup>2</sup>	percent	US\$ million	US\$ <sup>2/</sup>	US\$ PPP <sup>3/</sup>	Exports	Imports	Total trade	US\$ million
Brunei Darussalam	5,765	442.4	77	3.0	13,557	30,645	75,191	6,571	4,157	10,729	504
Cambodia	181,035	15,981.8	88	1.7	24,634	1,541	4,428	5,897	8,373	14,270	3,103
Indonesia	1,916,862	265,015.3	138	1.2	1,041,562	3,930	13,435	180,013	205,522	385,535	21,980
Lao PDR	236,800	6,887.1	29	2.0	18,096	2,627	7,654	5,541	5,846	11,389	1,320
Malaysia	331,388	32,385.0	98	1.1	358,412	11,067	31,220	247,354	217,467	464,821	8,072
Myanmar	676,576	53,625.0	79	0.4	77,264	1,441	7,115	16,654	19,337	35,991	3,554
Philippines	300,000	106,598.6	355	1.6	342,693	3,215	9,247	67,488	115,119	182,607	9,802
Singapore	720	5,638.7	7,833	0.5	364,076	64,567	101,169	411,973	370,684	782,657	77,631
Thailand	513,140	67,831.6	132	0.3	505,060	7,446	20,174	241,011	191,967	432,978	13,248
Viet Nam	331,230	94,666.0	286	1.1	241,039	2,546	7,500	242,969	236,837	479,807	15,500
<b>ASEAN</b>	<b>4,493,516</b>	<b>649,071.5</b>	<b>144</b>	<b>1.1</b>	<b>2,986,391</b>	<b>4,601</b>	<b>13,472</b>	<b>1,425,471</b>	<b>1,375,312</b>	<b>2,800,783</b>	<b>154,713</b>

Sources: ASEAN Macro-economic Database, ASEAN Merchandise Trade Statistics Database, ASEAN Foreign Direct Investment Statistics Database (compiled/computed from data submission, publications and/or websites of ASEAN Member States' national statistics offices, central banks and relevant government agencies, and from international sources)

Symbols used

Notes

- not available as of publication time  
n.s. not applicable/not available/not compiled  
Data in *italics* are the latest updated/revised figures from previous posting.

1/ Refers to/based on mid-year total population based on country projections  
2/ Based on AMSs data submission to ASEANstats and Official National Statistical Offices website  
3/ Computed based on IMF WEO Database April 2019 estimates and the latest actual country data  
4/ ASEAN IMT's Database preliminary 2018 figures are as of 11 July 2019  
5/ Unless otherwise indicated, figures include equity, reinvested earnings and inter-company loans  
6/ FDI 2018 figures are preliminary as of 30 June 2019

Source: (ASEANstats 2019)

**Figure 12 – ASEAN Member States: Selected Basic Indicators, 2018**

Table 2

ASEAN Member States: Selected Key Macroeconomic Indicators, 2018

ASEAN Statistics

Country	Growth rate of gross domestic product at constant prices	Inflation rate (year-on-year growth of CPI at average of period)	Exchange rate at average of period		Unemployment rate <sup>1/</sup>	International merchandise trade <sup>2/</sup>						Year-on-year change in foreign direct investments inflows <sup>3,4/</sup>	
	percent	percent	Currency	national currency per US\$		percent	Ratio of exports to GDP	Ratio of imports to GDP	Ratio of total trade to GDP	Growth of nominal value of exports	Growth of nominal value of imports	Growth of nominal value of total trade	US\$ million
	Brunei Darussalam	0.1	0.2	Dollar (B\$)	1.3	3.3	48.5	30.7	79.1	17.6	34.6	23.7	43.7
Cambodia	7.5	2.5	Riel	4,041	0.7	23.9	34.0	57.9	(47.7)	(41.4)	(44.2)	370.4	13.6
Indonesia	5.2	3.2	Rupiah (Rp)	14,244	5.3	17.3	13.7	37.0	6.6	30.9	18.3	1,400.7	6.8
Lao PDR	6.3	2.0	Kip	8,423	7.3	30.6	32.3	62.9	12.9	13.3	13.1	(375.7)	(22.2)
Malaysia	4.7	0.9	Ringgit (RM)	4.0	3.3	63.0	60.7	123.7	13.6	11.7	12.7	(1,224.2)	(13.2)
Myanmar	6.8	6.9	Kyat	1,365	1.0	21.6	25.0	46.6	20.0	0.4	8.6	(448.4)	(11.2)
Philippines	6.2	5.3	Peso (Php)	50.9	5.4	19.7	33.6	53.3	(1.1)	6.7	3.7	(454.1)	(4.4)
Singapore	3.1	0.4	Dollar (S\$)	1.3	3.1	113.2	101.8	215.0	7.5	16.7	11.7	1,896.0	2.5
Thailand	4.1	1.1	Baht	32.3	1.1	47.7	38.0	85.7	1.8	(13.8)	(5.8)	5,202.9	64.7
Viet Nam	7.1	3.5	Dong	22,362	2.2	100.8	98.3	193.1	13.6	12.4	13.0	1,400.0	9.9
<b>ASEAN</b>	<b>5.2</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>55.2</b>	<b>46.1</b>	<b>93.8</b>	<b>7.6</b>	<b>9.8</b>	<b>8.7</b>	<b>7,811.4</b>	<b>5.3</b>

Sources: ASEAN Macro-economic Database, ASEAN Merchandise Trade Statistics Database, ASEAN Foreign Direct Investment Statistics Database (compiled/computed from data submission, publications and/or websites of ASEAN Member States' national statistics offices, central banks and relevant government agencies, and from international sources)

## Symbols used

- not available as of publication time

n.a. not applicable/not available/not compiled

Data in *italics* are the latest updated/revised figures from previous posting.

## Notes

1/ Latest unemployment rate of Brunei Darussalam and Cambodia are 2017 and Lao PDR is 2010

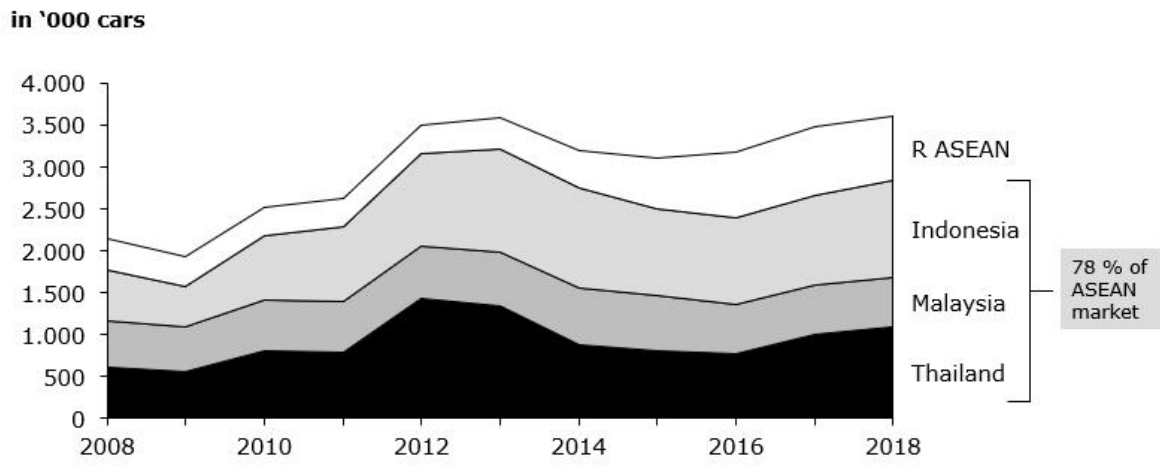
2/ ASEAN IMTS Database 2018 figures are as of 11 July 2019

3/ Unless otherwise indicated, figures include equity, reinvested earnings and inter-company loans.

4/ FDI 2018 figures as of 30 June 2019

Source: (ASEANstats 2019)

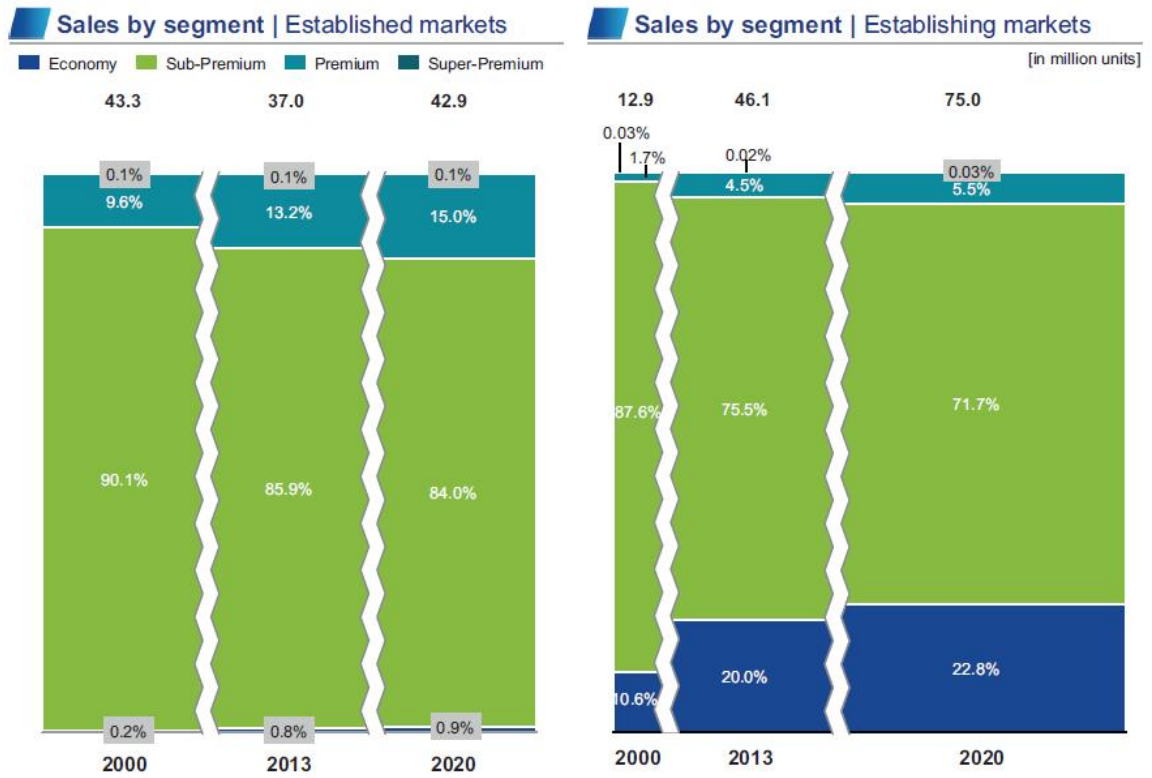
Figure 13 - Selected Key ASEAN Macroeconomic Indicators 2018



Source: (OICA 2019, own elaboration)

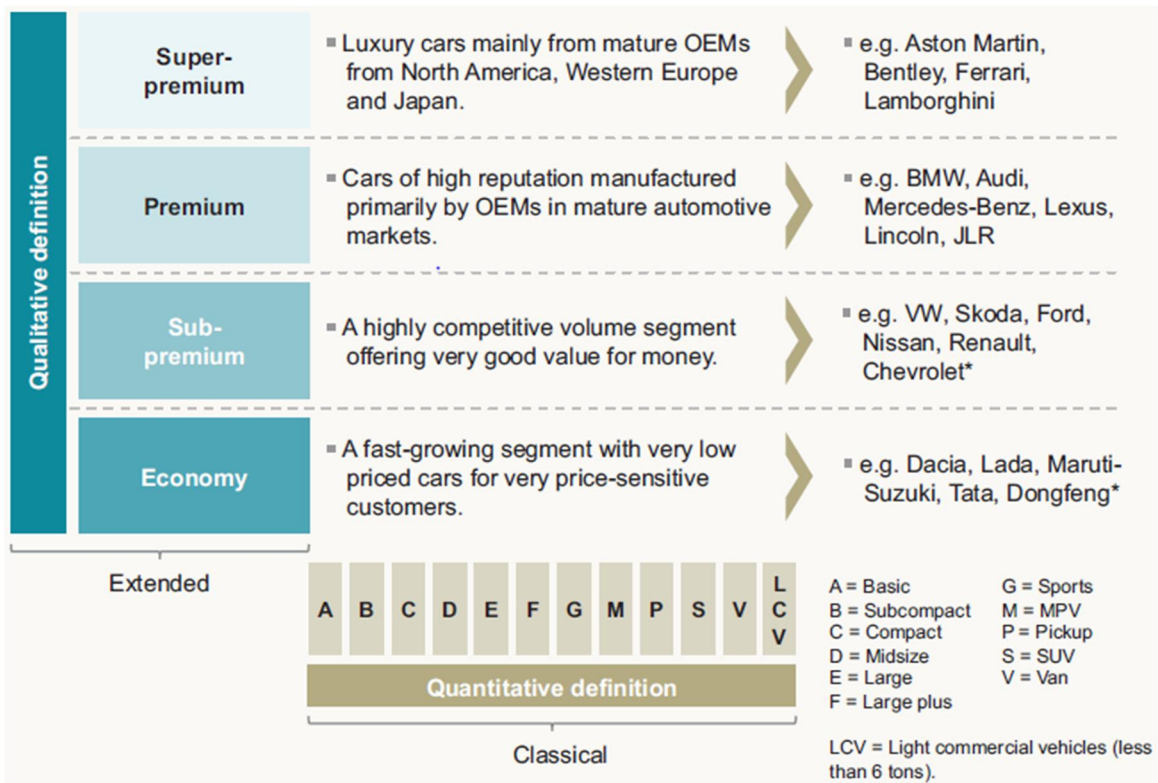
**Figure 14 – ASEAN market growth 2008 - 2018**





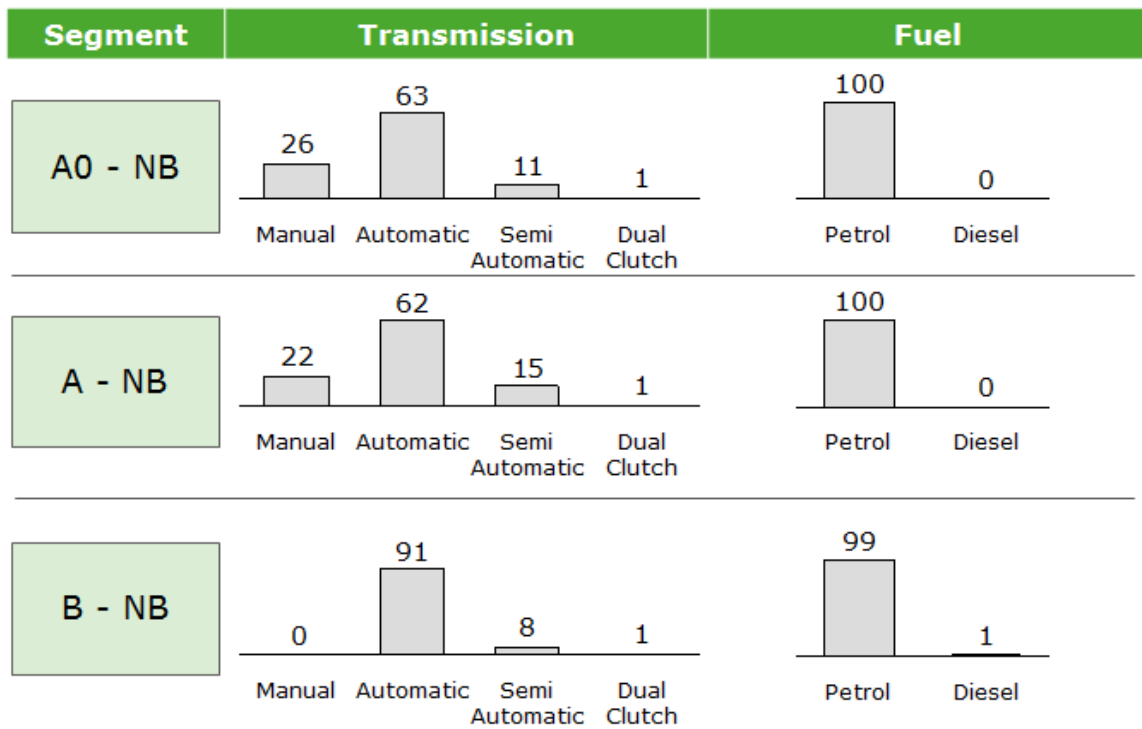
Source: KPMG 2013

**Figure 15 – Sales by segment in established (Triad) and establishing (BRIC) markets**



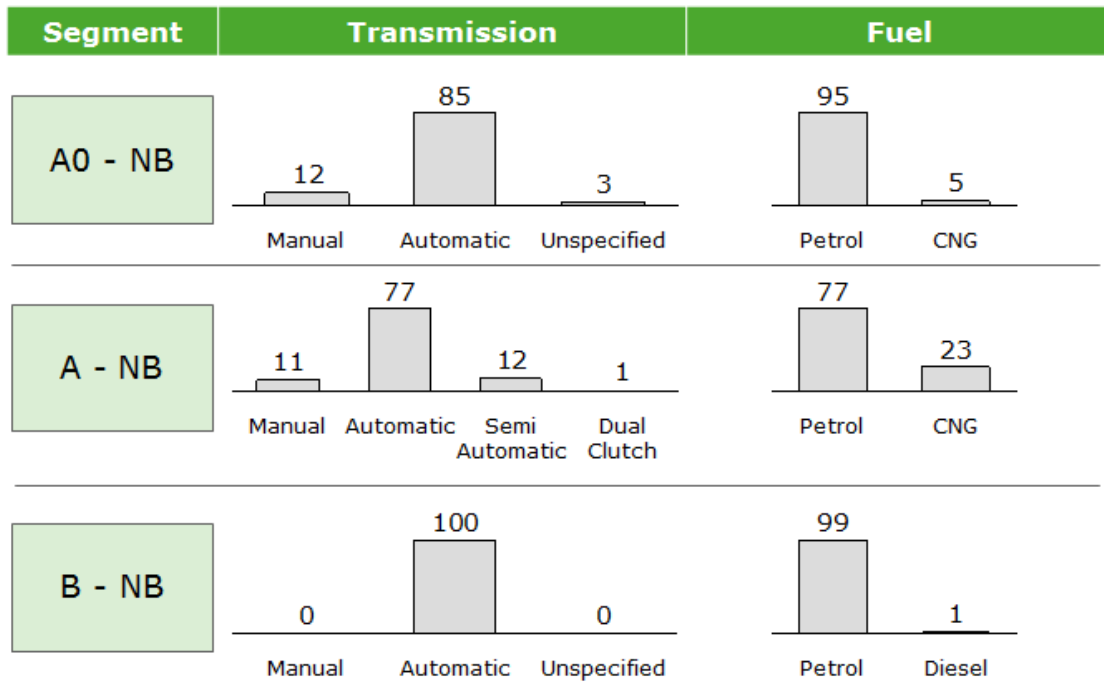
Source: (KPMG 2013)

**Figure 16 - Global vehicles segment definition**



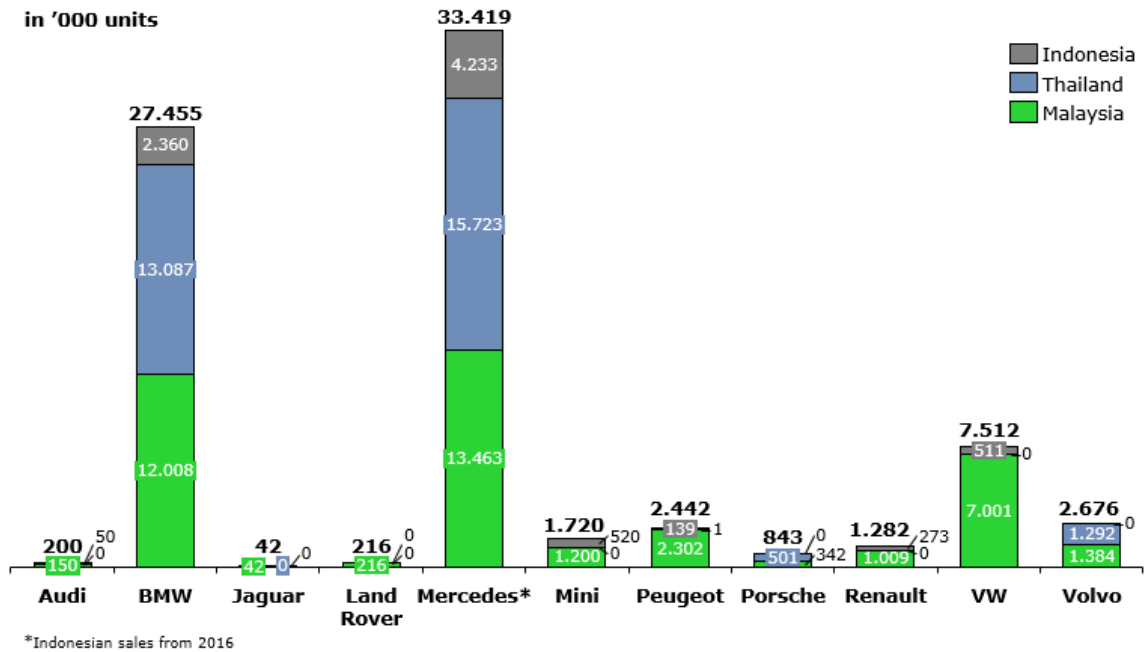
Source: (ŠKODA AUTO a.s., ASEAN Strategy 2013)

**Figure 17 - Customer preferences in Malaysia**



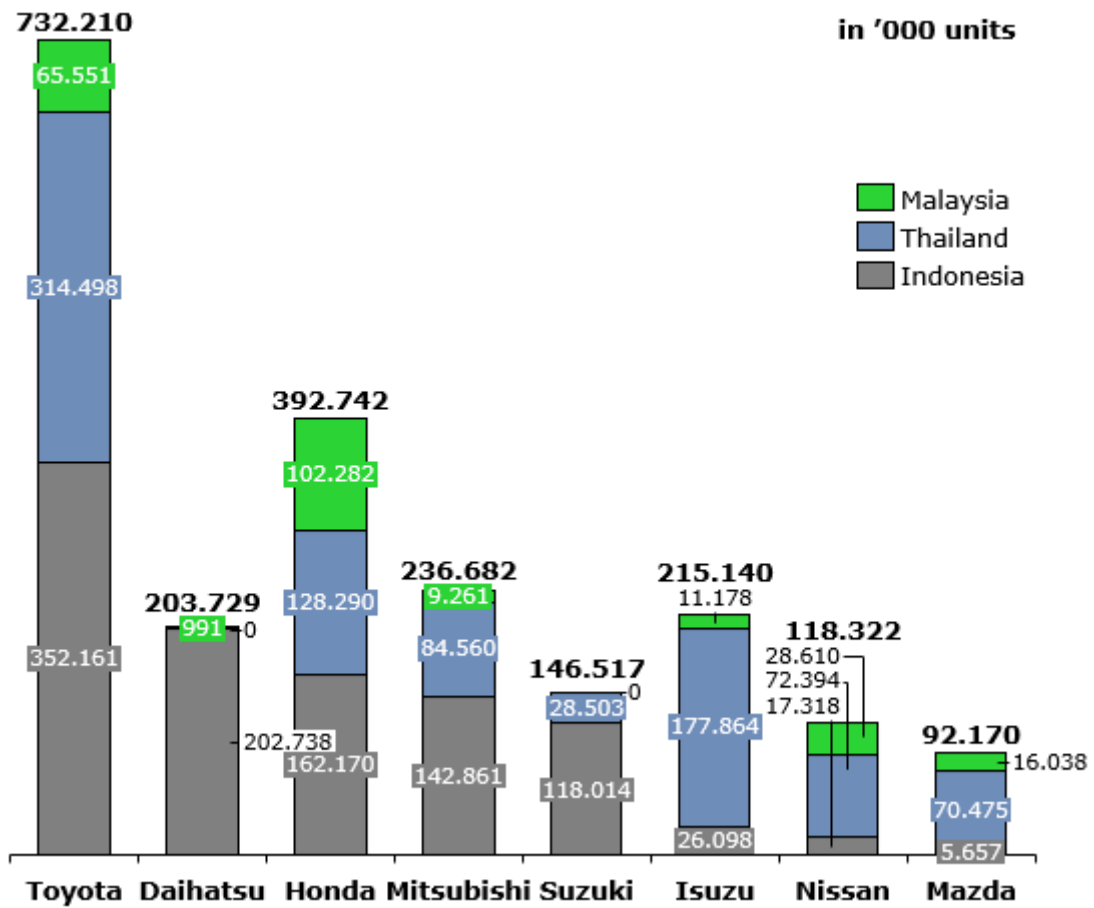
Source: (ŠKODA AUTO a.s., ASEAN Strategy 2013)

**Figure 18 - Customer preferences in Thailand**



Source: (MarLines, Paultan, ASEANstats, own elaboration)

**Figure 19 – Sales of European OEMs in Top three in 2018**



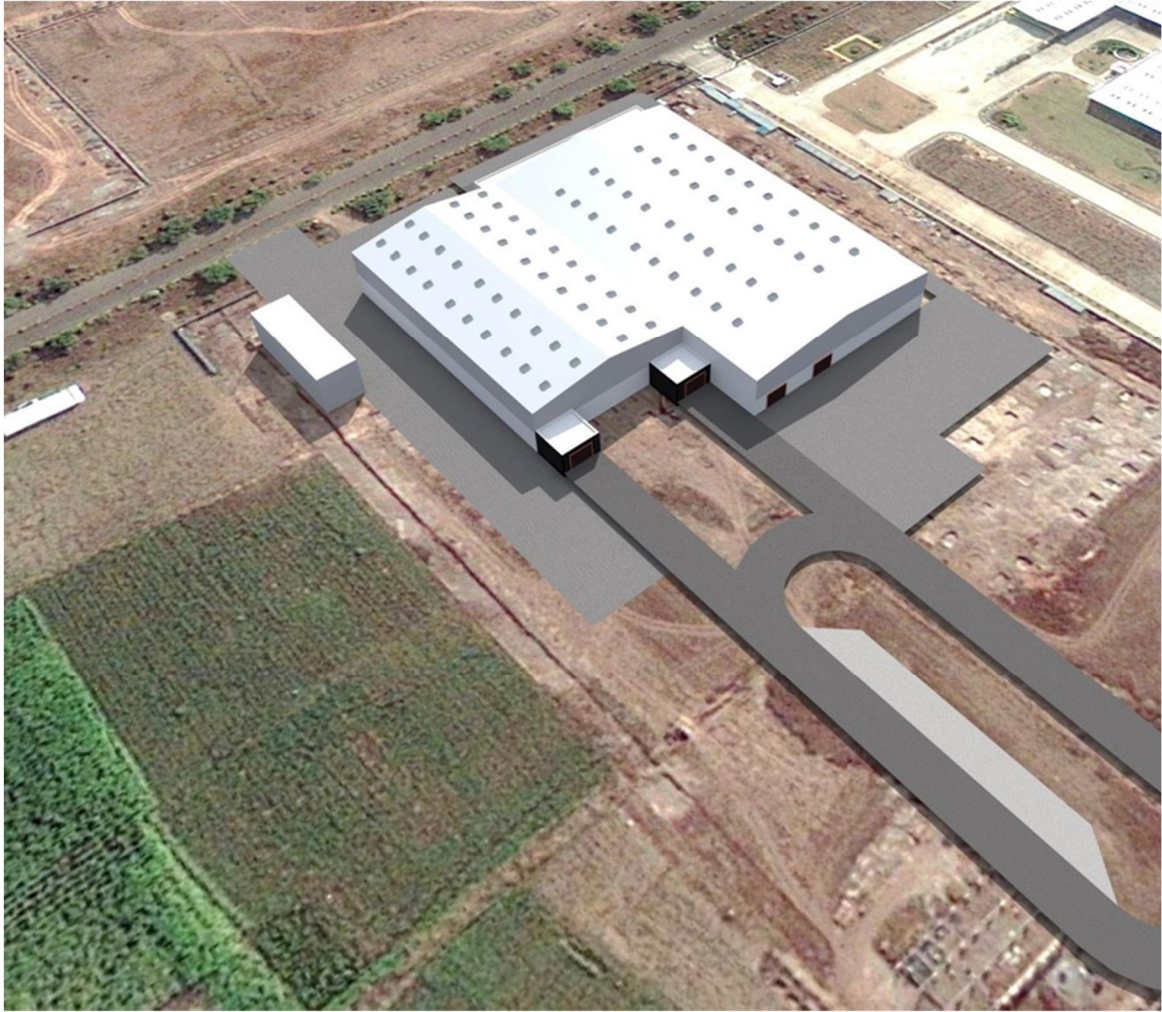
Source: (MarLines, Paultan, ASEANstats, own elaboration)

**Figure 20 – Sales of Japanese OEMs in Top three in 2018**



Source: (ŠKODA AUTO a.s. 2013, ASEAN Produktionsstrategie – SKD)

**Figure 21 – Furnished car body, power plant, other parts**



Source: (ŠKODA AUTO a.s. 2013, ASEAN Produktionsstrategie – SKD)

***Figure 22 – Drawing of an SKD assembly plant***



FBU import from EU		CKD production <sup>1</sup>		CKD local production w/ 40% LC <sup>1</sup>	
Customs value FBU	20,000 €	Price EXW <sup>2</sup>	24,000 €	Price EXW <sup>2</sup>	24,000 €
Import duty FBU (30%)	6,000 €				
Tax base	26,000 €	Tax base	24,000 €	Tax base	24,000 €
Excise tax (60%)	15,600 €	Excise tax (60%)	14,400 €	Excise tax <b>reduced</b> (30%)	7,200 €
Dealer margin (10%)	4,160 €	Dealer margin (10%)	3,840 €	Dealer margin (10%)	3,120 €
Sales tax (10%)	4,576 €	Sales tax (10%)	4,224 €	Sales tax (10%)	3,432 €
Final sales price	50,336 €	Final sales price	46,464 €	Final sales price	37,752 €
		<b>Δ CKD production vs. FBU</b>	<b>-3,872 €</b>	<b>Δ CKD w/ LC 40% vs. FBU</b>	<b>-12,584 €</b>

<sup>1</sup> CKD parts imported from EU

<sup>2</sup> CKD parts, logistics, import duty on CKD parts and production cost are included in the EXW price

Source: (own elaboration)

**Figure 23 – Price comparison FBU import from EU vs. local CKD product in Malaysia**

FBU import from EU		CKD production <sup>1</sup>		CKD local production w/ 40% LC <sup>1</sup>	
Customs value FBU	20,000 €	Price EXW <sup>2</sup>	25,000 €	Price EXW <sup>2</sup>	24,000 €
Import duty FBU (40%)	8,000 €				
Tax base	28,000 €	Tax base	25,000 €	Tax base	24,000 €
Luxury tax (20%)	5,600 €	Luxury tax (20%)	5,000 €	Luxury tax (20%)	4,800 €
Dealer margin (10%)	3,360 €	Dealer margin (10%)	3,000 €	Dealer margin (10%)	2,880 €
Sales tax (10%)	3,696 €	Sales tax (10%)	3,300 €	Sales tax (10%)	3,168 €
Final sales price	40,656 €	Final sales price	36,300 €	Final sales price	34,848 €
		<b>Δ CKD production vs. FBU</b>	<b>-4,356 €</b>	<b>Δ CKD w/ LC 40% vs. FBU</b>	<b>-5,808 €</b>

<sup>1</sup> CKD parts imported from EU

<sup>2</sup> CKD parts, logistics, import duty on CKD parts and production cost are included in the EXW price

Source: (own elaboration)

**Figure 24 – Price comparison FBU import from EU vs. local CKD product in Malaysia**

## ANNOTATION

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<b>FIELD</b>	6208R087 Business Administration and Sales		
<b>THESIS TITLE</b>	<b>A Comparison of OEM Entering the Automotive Market of ASEAN</b>		
<b>SUPERVISOR</b>	Mgr. Emil Velinov, Ph.D.		
<b>DEPARTMENT</b>	KMM - Department of Marketing and Management	<b>YEAR</b>	<b>2019</b>
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<b>NUMBER OF TABLES</b>	0		
<b>NUMBER OF APPENDICES</b>	1		
<b>SUMMARY</b>	<p>The ASEAN region is one of the largest and fastest growing economies in the world. One of its key industries is automotive, which rivals those of India, Brazil and Russia. In view of its current size and immense future potential the automotive market of ASEAN attracts OEM from Asia, Europe and USA alike. Due to the proximity of the ASEAN region to South Korea, China and Japan, and in view of historical ties the ASEAN automotive market is heavily dominated by Japanese car manufacturers. They are followed by OEM from USA and Europe. Over the last two decades European players have made numerous attempts to capture the market; however, without much success. The thesis identifies the key challenges for European OEM entering the automotive market of ASEAN and provides a road map on how to initially gain foothold in the market and expand gradually to become an established player.</p>		
<b>KEY WORDS</b>	Automotive, ASEAN, market entry modes, trade barriers, European OEM, production depth.		