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Hyundai Motor Manufacturing Czech and the Czech Republic

An Excellent Example of Foreign Direct Investment

Chris McEachran-Law

In many ways, the Czech Republic automotive industry has been and is one of the most productive and successful in the world. Hyundai Motor Corporation (HMC) is one of the largest and most successful auto manufacturers in the world. This paper seeks to explore these two phenomena in greater detail with particular focus on their newfound relationship and its environmental implications based on Hyundai's entry into the Czech auto manufacturing market in 2006. More specifically, this paper first provides an overview of the history and current state of the Czech Republic and Czech Economy, focusing on environmental concerns and challenges. Next, it discusses the Czech automotive industry with an emphasis on the domestic superpower Škoda Auto. What follows is a brief history of HMC and a detailed overview of Hyundai's organizational structure on the global level as well as the structure of Czech subsidiary Hyundai Motor Manufacturing Czech (HMMC). Subsequent sections provide an in-depth examination of HMMC's plant, and a comparison of Hyundai and Škoda. Both of these sections focus on the impact Hyundai has had on the Czech automotive industry and on the Czech Republic more generally (again, with particular attention to environmental issues). Finally, this paper summarizes the information presented and explains with concision why Hyundai Motor Manufacturing Czech is an excellent example of foreign direct investment (FDI) in the Czech Republic – especially as the country battles to become more environmentally friendly and sustainable in one of its most important industries.

OVERVIEW OF THE CZECH REPUBLIC AND CZECH ECONOMY

The Czech Republic (Czechoslovakia from 1918-1992) is located in Central Europe, sandwiched between Germany, Poland, Slovakia, and Austria. In 1948, shortly after the conclusion of the Second World War, Czechoslovakia fell to a Communist coup and was taken over by the Communist Party of Czechoslovakia. During communist regimes, innovation and risk-taking by individuals are generally not, and perhaps never, encouraged. The Czech regime was no different. It comes as no surprise, then, that the country emerged from communism lagging behind the western world in the areas of innovation, technology, research and development (R&D), and much more. On a similar note, production across Czech industries (such as auto manufacturing, mining, and various forms of engineering) was generally slower and more energy intensive. Not only was this inefficient economically, but it was also detrimental to the environment.

Along with communist countries such as Hungary, Poland, and East Germany, the Czech Republic was a blatant perpetrator of environmental destruction. As Florida State University professor Roy C. Herndon wrote, there was “an emphasis on production at the expense of the environment [which] led to severe degradation of air and water quality, coastal areas, soils, sediments, crops, and forestlands” (1999). Because of the length of the Communist Party's rule, even after the Velvet Revolution of 1989 that signaled the end of communism, the soon-to-be Czech Republic had a long way to go both economically and environmentally to catch up to the rest of non-communist Europe.

Following the end of communism in 1989, the government led by Vacláv Havel faced the challenging task of transitioning to a market economy. The major key to this transition was the process of privatization, which came in a few different forms. First, privately owned companies from the pre-communism era were simply returned to their original owners (restitution). Next, state-owned companies were mainly turned into joint-stock companies, meaning that large portions of them were sold to individual shareholders. However, the Czech Republic had a unique way of doing this called “voucher privatization”. As the European Commission (EC) puts it, “for 1000 CZK, every Czechoslovak citizen could buy a coupon book containing investment points, which could then be used to

bid in auctions for shares in state-owned companies undergoing privatisation” (“Privatisation of state-owned enterprises”, 2013). However, despite the country’s best efforts, the process was far from flawless and by the late 1990s, the Czech Republic faced stagnation as Figure 1 shows below.



Figure 1: Czech GDP over past 40 years.
Source: “Czech Republic GDP”, 2016

To combat this, the Czech government embraced outside investment by offering various incentives and benefits to foreign investors (Jenerálová, 2011). This was met with mixed results, as Czech GDP remained relatively stagnant until the early 2000s (Figure 1).

The majority of growth in the early to mid-2000s as seen above came as a direct result of the Czech Republic’s entry into the European Union (EU) on May 1, 2004. There are several reasons why EU membership directly and immediately improves economic conditions of new members. First, they provide access to EU structural funds aimed at helping fund less developed and less fortunate regions improve their economic conditions (Jenerálová, 2011). EU membership also eliminates all import and export duties between EU members and increases foreign investment inflows due to the freedom of movement of capital, people, and services outlined by the EU. To give an idea of just how beneficial joining the EU was, Czech GDP more than doubled over the first 5 years (Figure 1) of being an EU member. During that time, the country started to turn itself into one of the most successful industrial economies throughout Central and Eastern Europe.

In addition to the economic boost provided by EU membership, the Czech Republic by default also now had to comply with stricter environmental regulations (part of the conditions of joining the EU). Despite this theoretically important fact, the Czech Republic saw nominal progress as a result of these stricter regulations in the mid-2000s. Based on two detailed ranking systems of 16 EU countries developed by Maître de Conférences Amel Ben Rhouma, the Czech Republic ranked 15th and 16th respectively in the five consecutive years from 2002-2006. The “Sustainable Value” and “Sustainable Value Margin” factor in 19 different economic, environmental, and social indicators in an attempt to determine whether a given country used its resources to efficiently create value (Rhouma, 2010). (A detailed breakdown of how the rankings are calculated can be found on pages 22 and 23 of Rhouma’s article).

The Organisation for Economic Co-operation and Development (OECD) supports Rhouma’s notion, stating that the “Czech Republic...has one of the highest ratios of greenhouse gas emissions per unit of output in the OECD”

(“Green growth and sustainable development”, 2016). According to the OECD, this statistic holds true despite considerable improvement in the recent years – further emphasizing just how poor the country’s environmental performance has historically been.

An important step was realized in 2010 when the Czech Republic adopted the Strategic Framework for Sustainable Development, which broadly lays out sustainable objectives, specifically focusing on using energy more efficiently and increasing the use of green technologies. According to Robeco Sustainable Asset Management (RobecoSAM), the Czech Republic has made meaningful process overall in terms of environmental measures. In the last year alone, the Czech Republic made the most progress in environmental, social, and corporate governance (ESG) scores of any of the 22 developed countries evaluated, and 3rd out of 62 overall (“Country Sustainability Ranking Update”, 2016). This is particularly notable considering the three largest industries are engineering and machine engineering (primarily the auto industry), mining, and the chemical industry – all of which require copious amounts of energy.

During the period after joining the EU, the motor vehicle industry (motor vehicle industry, auto industry, and automotive industry will be used interchangeably in this paper) in particular received a significant boost from two new sources of FDI. The first was in 2005 when Toyota Peugeot Citroën Automobile (TPCA) opened a manufacturing plant in the Kolin region of the Czech Republic. The two companies (Toyota and Peugeot Citroën) together invested approximately €950 million EUR (26 billion CZK) in this venture. Shortly after that, Hyundai Motor Manufacturing Czech (HMMC) announced its arrival by building a plant in Nosovice, investing over €1 billion EUR. Before delving into the details of Hyundai’s entry, it helps to first look at a brief history of the Czech automotive industry and its main player, Škoda Auto.

HISTORY OF THE CZECH AUTOMOTIVE INDUSTRY

The Czech automotive industry has traditionally been a significant part of the Czech economy with origins from as long ago as 1895 when Václav Laurin & Václav Klement partnered to found a bicycle company under the name Laurin & Klement. In 1899, they began to build bikes that contained auxiliary engines, also called “Motocyclettes”. Six years later, the two created their first automobile, the Voiturette A. Due to its success, Laurin & Klement merged with Škodaworks Pilsen, thus marking the end of the brand Laurin & Klement and the beginning of Skoda Auto (“Company History”, n.d.).

Prior to the Second World War, other companies such as The Brno Arms Company, Praga, and Walter all entered the automobile industry. However, no company besides Skoda ever found any long-term success. The Brno Arms Company ceased production of vehicles following WWII, Praga made the switch to commercial trucks (no passenger vehicles), and Walter slowly switched over to engine production, producing its last automobile in 1951 (Purkrábek, 2012). Currently, Škoda is the only Czech company producing passenger vehicles in the Czech Republic. Because of this, it has enjoyed considerable success as the perennial leader in domestic car sales in the Czech Republic.

HISTORY OF ŠKODA AUTO

Škoda’s first car was produced in 1928, and numerous models including the Škoda Popular, Škoda Rapid, Škoda Favorit and Škoda Superb were introduced in the following years leading up to WWII. Despite sustaining considerable damage from the events of the Second World War, Škoda factories commenced production, introducing models such as the Tudor, Octavia, and Felicia. Of these models, the Superb and the Octavia are still in production today. Up until the Velvet Revolution of 1989, production was relatively limited due to the Czech communist regime. However, in conjunction with the shift towards a market economy, the Czech government sought a “strong foreign partner that would provide financing and know-how” (“Automotive Industry in the Czech Republic”, 2009) for Škoda. That partner would eventually turn out to be Volkswagen Group (previously comprised of Volkswagen, Audi, and SEAT). An often-overlooked factor in Volkswagen’s acquisition of Škoda is that the Czech government did not simply exchange ownership for the highest bid – they instead attached a

series of conditions to help the Czech Republic's switch from communism go more smoothly. For example, they required that all Czech Škoda employees kept their jobs and that Škoda be allowed to operate as a fully independent subsidiary with freedom to develop its own cars (O'Shaughnessy, 2007). While it is difficult to speculate where Škoda Auto would be today had the government selected the other bidder, Renault, it is clear that Škoda has and continues to enjoy considerable success as a subsidiary of Volkswagen.

Looking at the years following Volkswagen's acquisition, Škoda has flourished. With few exceptions, unit sales globally have increased every single year since 1994. Similar trends exist for Škoda in Europe and China respectively, its two biggest markets. Record sales of 1.06 million were recorded in 2015 ("Sales Results", n.d.), earning the company \$1.36 billion USD in operating profit and a net profit of \$1.19 billion USD ("Škoda Annual Report", 2015). In addition to the impressive sales and earnings figures, Škoda has also been recognized with numerous awards and accolades in recent years. In 2009, the Škoda Superb model won the international "Car of the Year" competition. Between 2007 and 2012, it won five "Best Manufacturer" awards from Auto Express, Top Gear, and Which? respectively. ("Which?" is the name of the UK car review company). Perhaps most impressive, however, is that Škoda has ranked among JD Power Customer Satisfaction Survey's top 10 car manufacturers in each of the last 20 years ("ŠKODA Awards", n.d.).

Finally, in terms of the market in the Czech Republic specifically, Škoda continues to hold a dominant position year after year. According to Petr Vanek, Director of the HMMC Public Relations Department, Škoda currently holds approximately 30% of the Czech market for new vehicles. According to Car Sales Base, the company holds a 4.3% market share in the European Union as a whole. However, despite this continued dominance, Škoda's market share has declined considerably over the past decade. The company held a near 50% market share for new vehicles in 2006 according to Vanek (Personal communication, 2016). To be clear, the reason for this has more to do with increase in the amount and quality of competition from other companies – specifically Toyota Peugeot Citroën and Hyundai – than it does with Škoda falling off (Škoda continues to earn impressive accolades despite their diminishing market share).

CURRENT STATE OF CZECH AUTOMOTIVE INDUSTRY

In 2015, motor vehicle production made up nearly 25% of the Czech Republic's industrial production and exports. It also provided approximately 7.5% of the Czech Republic's GDP. As of 2014, the automotive sector employed approximately 150,000 people and the country produced 118 vehicles per 1,000 inhabitants. That figure ranked them 2nd in the world in terms of vehicle production per capita behind only Slovakia, and well ahead of automotive superpower Germany producing approximately 70 vehicles per 1,000 inhabitants. In terms of global market share, the Czech Republic ranks 16th (Kozelsky & Novák, 2015). It is worth noting that the population of the Czech Republic is only about 10.5 million (compared to global market leaders such as China and the United States with populations of approximately 1.4 billion and 319 million respectively). The industry continues to grow steadily year after year, and that trend projects to continue according to Kozelsky and Novák of the EU Office of the Czech Republic (2015).

HISTORY OF HYUNDAI

Hyundai Motor Company is a well-known Korean automotive brand that currently sells cars in 193 countries. It has plants in 16 countries, sold 4.4 million vehicles in 2014, and is currently the fourth largest vehicle manufacturer in the world. Hyundai also currently owns approximately 34% of Kia Motors, another Korean automobile manufacturer. Kia sold nearly 3,000,000 vehicles in 2014, and has seen their sales figures grow steadily from 2011-2014 ("Kia Motors posts 0.3% rise in 2015 global sales", 2016). Hyundai's overall profit in 2014 was nearly \$6.4 billion USD (7,649 billion KRW) ("Financial Information", 2016). (All USD figures have been converted from the given KRW figures, therefore some variance should be expected based on rounding and varying conversion rates). Despite the current success, it was not always this way. Chung Ju-Yun originally founded Hyundai in 1947, as an engineering and construction company, but Hyundai Motor Company as it is known today was not established until 1967. By 1968, the construction of Hyundai's first plant – the Ulsan

assembly plant – was complete. In the same year, Hyundai began training with Ford Motor Company in the United States. As a result, the first car released – called the Cortina – was manufactured in conjunction with Ford. Hyundai soon decided to develop and manufacture their own car, which led them to hire a collection of top British car engineers in 1974. By 1975, Hyundai had created the Pony, the first Korean car in history.

During the early years, Hyundai was generally quite well received. In 1976, Hyundai's first vehicle, the Pony, was unveiled. Exports of the Pony to Ecuador commenced shortly after that, and it did not take long for the car to reach North America. Hyundai Motors Canada was incorporated in 1983, followed by Hyundai Motors America in 1985. The Pony Excel (also referred to as simply the Excel) was launched in 1985 as well, and exports to the U.S. began in 1986. Despite the initial success of the Excel – which was the best-selling export in the compact car category for three consecutive years – quality soon turned into an issue. Hyundai's popularity fell drastically as it became the butt of all sorts of jokes. In response to these concerns, Hyundai decided to make a change in its business model in pursuit of becoming a more high-end brand. The company made significant investments in research and development, design, quality, and manufacturing, which all ultimately led to a much-improved product. In addition to the actual tangible improvements, Hyundai also implemented a 10-year (160,000 km) warranty on all vehicles sold in the United States in 1998, making it the best vehicle manufacturer warranty in the country ("Hyundai, America", 2016). This not only showed commitment to quality, but also signaled to consumers that Hyundai really had made significant progress in terms of quality. At the same time, Hyundai also launched aggressive marketing campaigns and strove to banish their once poor image once and for all.

Throughout the 2000s, Hyundai made considerable progress as a brand. It became an official sponsor of the 2000 FIFA Euro Cup and the 2002 FIFA World Cup, helping bolster brand awareness on a truly global stage. After sponsoring the Euro Cup again in 2006, Hyundai became an official (and more permanent) partner of FIFA in 2007. The company also won multiple awards in numerous countries, including being selected as one of "Interbrand's 100 Best Global Brands" in both 2005 and 2006 and winning "North American Car of the Year" in 2009. While Hyundai continued to sponsor all FIFA World and Euro Cups, in 2009 the company went on to sponsor the Super Bowl, and has since become an official sponsor of the NFL ("General Information", 2016). These were all massive strides for a company once mocked by American talk show hosts Jay Leno and David Letterman on prime-time television for concerns over quality and value.

ORGANIZATIONAL STRUCTURE OF HYUNDAI GLOBALLY

Because Hyundai is such a large, multinational firm, the organizational structure is quite complex. Illustrated in this section is the central organizational structure of Hyundai Motor Company.

Globally, HMC consists of a board of nine directors, four of which are internal and five of which are external. As defined by Korean law, an "'inside director' refers to any ordinary director engaged in the day-to-day business of the company" and an "'outside director' refers to any director not engaged in the day-to-day business of the company" ("Corporate Law", 2016). Each director is currently serving a three-year term.

The internal directors consist of Chairman and CEO Mong Koo Chung, Vice Chairman Eui Sun Chung, and the two standing Presidents Won Hee Lee and Gap Han Yoon. Each of these four directors is categorized under the Management Division. As for the external directors, Se Bin Oh and Dong Kyu Lee are in the Law Division, Sun Il Nam is in the Strategy Division, Byung Kook Lee is in the Finance Division, and You Jae Yi is in the Marketing Division.

Hyundai holds subsidiaries with varying structures that span across six continents, but for this paper the highly relevant company is Czech subsidiary Hyundai Motor Manufacturing Czech.

ORGANIZATIONAL STRUCTURE OF HMMC

President Choi Dongwoo oversees HMMC as a whole. There are five division heads below him. Cho Jae Kyung is

the Head of Administration, Nam Sanghyun is the Head of Finance, Lee Jong Hoon is the Head of Production, Ki Jung Sung is the Head of Procurement, and Shin Iksoo is the Head of Quality (“Management”, 2016). There are 12 departments on the non-technical side that fall into the administration, finance, and procurement divisions respectively. There are also nine more departments on the technical side of things within the production and quality divisions; they are listed, briefly discussed, and shown in Table 1 in this section.

Administration Division

Human Resources:

Jirí Havlín is the head of HR, overseeing recruitment, HR systems, payroll and benefits, and development. To clarify, HR systems include developing and evolving the structure of performance grading, bonus systems, and supporting strong corporate culture.

Employee Relations:

The department of employee relations handles all employee complaints and negotiations with trade unions. Ctirad Václavínek is the department head.

General Affairs:

Hyunyong Cha, whose main responsibilities include supporting employee conditions, specifically by furnishing offices and providing office supplies, heads general affairs. This department also manages HMMC’s assets and monitors safety conditions and environmental protection.

Legal Department:

The head of the legal department is Petr Michník. His role, and the role of his department as a whole, is to support the company in all legal matters, namely by preventing and resolving any litigation-related issues.

Public Relations:

Petr Vanek is the head of public relations, which seeks to raise brand awareness in the Czech Republic and Europe through various events and forms of communication.

Facility & Environment, Health and Safety:

The department head is Bumsoo Kim, and he and his department have quite an extensive list of responsibilities. In short, this department is responsible for anything related to the facility itself and its compliance with Czech laws and regulations. This includes obtaining various types of permits, negotiating with national and local authorities, and ensuring adherence to environmental regulations. Kim is also responsible for installing and maintaining electric facilities and equipment (with a specific focus on energy-reducing technologies), and all forms of health and safety. Health and Safety includes fire protection, workplace injury and illness prevention, and inspections and internal audits in these areas. He works directly with the plant preventative care physician on all matters related to employee health.

Finance Division

Financial Accounting:

Baekyung Jeong is the head of financial accounting. His chief duties include ensuring accounting and taxation procedures are done according to Czech law and in the best interests of HMMC. In addition, Jeong’s department manages the treasury, including accounts receivable and payable, credit optimization, and cash-flow planning.

Financial Controlling:

Slavomír Cieslar, who works in close conjunction with the financial accounting division, leads the department of financial controlling. Both finance departments aim to avoid financial risks and maximize profit by working with all other departments to reduce costs and increase productivity. However, Cieslar focuses more on controlling the budget, cost accounting, and reporting of performance and profitability.

Procurement Division

Purchasing:

Tomás Poláček is the head of purchasing. He is charged with procurement of all required items except for automobile parts in a timely and cost-efficient manner. These items include primarily raw materials such as steel and equipment and parts for the machinery used in the plant.

Parts Development:

The head of parts development is Heeseop Jeong; he deals with all aspects of improving the supply of parts. His department seeks the best suppliers based on cost, quality, short and long-term production capacities, and supplier support mechanisms.

Production Division

Stamping:

As the head of stamping, Jail Gu ensures a steady stream of external body sheet panels is available for the next set of production processes. The department achieves this objective by closely monitoring all equipment and production procedures to prevent breakdowns and delays. Without a continuous supply of panels produced by the stamping department, the entire production process would come to a halt.

Welding:

The head of the welding department is Oldrich Fabían. His department is responsible for taking the panels produced by the stamping department and trimming and welding them together to prepare for the next processes.

Paint:

The key objective of the paint department, headed by Jan Kubaty, is to provide all vehicles with a perfect finish. Their commitment to quality is an important factor in contributing to customer satisfaction.

Assembly:

The assembly department is in charge of turning an array of individual parts into a vehicle. Led by Miroslav Jasiok, this department strives to assemble vehicles according to specifications and schedule demands while avoiding defects at all costs.

Transmission:

The transmission department staff and head Milos Broncek have the very specific job of producing defect-free transmissions according to production requirements.

Production Control:

Pavel Smída is the head of the production control department, which has very different objectives from the previous several departments listed. This department aims to meet mid and long-term strategy and increase productivity. Production control staff keep a close eye on all aspects of the production line to ensure a smooth and efficient production process, the main goal of which is to reduce order-to-delivery lead time.

Quality Division

Quality Control:

Led by Martin Klicník, the quality control department ensures all Hyundai vehicles are produced to the highest of standards, or as Hyundai puts it “the best quality vehicles in the European market” (“Organization Structure”, 2016). While this is undeniably a biased opinion, Hyundai did rank second in “Autobild’s (Germany) 2013 Quality Satisfaction Report”. Klicník’s job is very comprehensive, as his department oversees quality of the welding, paint, assembly, parts, and transmission departments. This involves testing and evaluating processes at each step in advance, as well as inspecting the actual parts and vehicles at each step in the production process.

Quality Assurance:

The quality assurance department head is Heeduk Kim, and his duty is to ensure customer satisfaction and effective customer support. This starts with testing the finished product intensively – they are the last safeguard of quality at HMMC. In addition, this department processes claims and deals with compensation for customers who have quality issues with their vehicles.

Maintenance:

Jung Jaehoon leads the Maintenance department in their comprehensive maintenance system that spans over all areas of production. This department focus heavily on preventative maintenance, but also handles defects and breakdowns when they do occur.

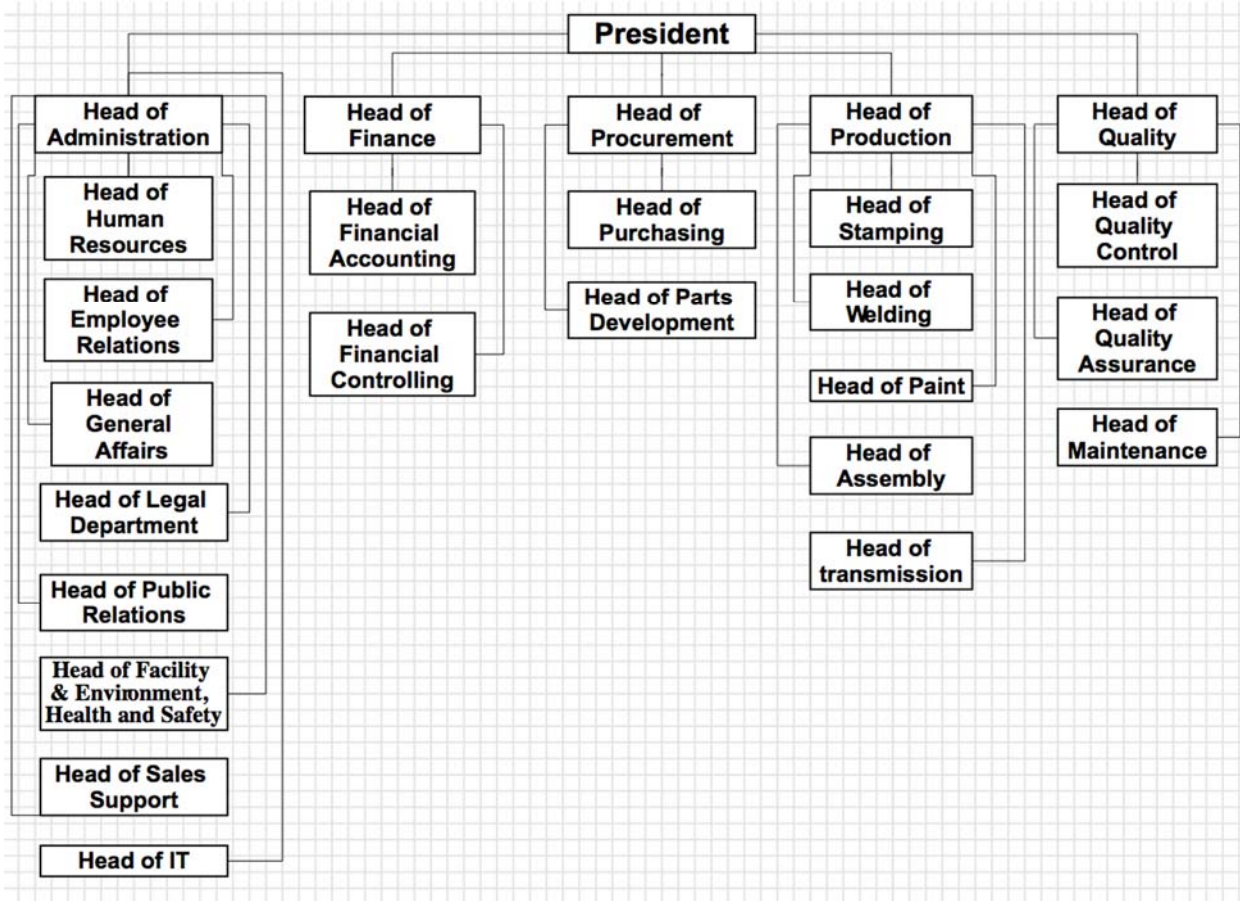


Table 1: Organizational structure of HMMC.

Source: Own (Compiled from “Organization Structure”, 2016 and “History”, 2016)

Hyundai and the Environment

While automakers worldwide were busy developing more environmentally friendly vehicles, so was Hyundai. In fact, Hyundai has launched a line of four different types of vehicles that use green technology (Hyundai calls these technologies “Blue Drive”). This list includes two types of hybrids, fuel cell vehicles, and fully electric cars. While this is certainly important for the future of Hyundai, the auto industry, and our planet, many automobile manufacturers have taken similar steps. What helps differentiate Hyundai from the pack is their commitment to the environment in other ways. The greener vehicles, it could be argued, are necessary simply to compete in the current state of the market. However, it is much harder to argue that the following two Hyundai initiatives are done out of necessity.

First, Hyundai has undertaken a general commitment to preserving and planting trees and grassland across many of its locations. In Mongolia, Hyundai has helped combat the health-damaging yellow dust problem by restoring 3,000 square metres of grassland in an otherwise arid location (“Hyundai Turns 30 Square Kilometres of Chinese Desert Into Grassland”, 2011). In the Philippines, Hyundai Asia Resources, Inc. (HARI) has partnered with the Haribon Foundation making a commitment to plant 20,000 seedlings by 2020 in vital areas (“Hyundai and Haribon: Planting Green Deeds Together for a Green Tomorrow”, 2010). In addition to these and other planting-based initiatives, Hyundai has also made a point of building and upgrading facilities to be increasingly sustainable. In the Asan plant in South Korea, Hyundai established a solar energy plant capable of reducing CO2 emissions by 5,600 tons annually (“Green Energy”, 2016). There are plenty more examples, but it really comes down to one simple truth – based on a 2014 report published by the Union of Concerned Scientists, Hyundai is the most environmentally friendly car manufacturer in the world.

HMMC NOSOVICE PLANT

In July of 2006, Hyundai decided to make a large investment in Europe. In fact, large might be an understatement. Hyundai approved the construction of a plant in Nosovice, Czech Republic that would cost over €1 billion and take approximately two years to complete. This plant was Hyundai's first plant in Europe, and was also the single largest foreign direct investment (FDI) in the history of the Czech Republic. In fact, this was such a great investment for the Czech Republic that they awarded Hyundai the country's "Investor of the Year" award in 2006. By 2008, the plant was operational and mass production of the i30 model began in November. The completion of the Nosovice plant meant that Hyundai was now producing cars in all continents with the exception of Antarctica.

The actual plant itself is quite impressive. It was constructed quickly and with a high level of respect for the environment. To start, the plant more than complies with the environmental protection system pursuant to ISO 14001 and EMAS, two initiatives aimed at improving sustainability across companies. Following along with their tree preserving/planting initiative, Hyundai replanted over 1,100 mature trees and bushes instead of cutting them down during the construction of the factory. HMMC also features three main on-site suppliers (Hyundai Mobis, Hyundai Dymos, and Hyundai Steel Czech), which reduces the daily transportation requirements significantly, considering the plant produces well over 1,000 cars daily ("Map of the area and the route Visitor train", n.d.). Finally, the plant uses a closed-system paint shop, which means no heat and no Volatile Organic Compounds are emitted. Incredibly, the Nosovice plant is a zero-emission factory.

In addition to the high environmental standards to which it adheres, the Czech manufacturing plant employs approximately 3,400 predominately Czech workers, and couldn't have come at a better time. The Moravia-Silesia region in which it is built was suffering "from high unemployment resulting from painful restructuring processes in the region's traditional industries" ("Automotive industry in the Czech Republic", 2009) which include coal, steel, and heavy engineering. Hyundai, unlike many foreign investors, was committed to creating a mutually beneficial relationship with the Czech Republic. They showcased this by hiring 97% of the 3,400 employees domestically, which greatly improved the employment situation in Moravia-Silesia. Not only did they create 3300 jobs for Czech citizens (97% of 3,400), the Nosovice plant actually resulted in the creation of 10,000 jobs when HMMC's subcontractors are included ("General Information", 2016). Furthermore, Hyundai created good jobs – they offer employees extremely generous pay and benefits packages, including five weeks annual vacation, travel agency discounts, as well as annual, performance, and loyalty bonuses ("Organization Structure, n.d.).

HMMC is also widely regarded as one of the most modern plants in Europe, and there are numerous awards and designations to back that up. Czech Invest labeled it "the most modern car manufacturer in Europe" ("Automotive industry in the Czech Republic", 2009), and in both 2013 and 2014, HMMC won the Czech Republic's "National Employer of the Year" in the under 5,000 employees category. Also in 2014, the plant was granted the "Excellence Award" under the "Czech National Quality Award" and received another award for best production rate among car producers in Europe – quite a feat considering the strength of competition. Moreover, since 2012 the Nosovice plant has been running at a full production capacity of 300,000 vehicles per year, and in 2016 it increased both capacity and actual production output to 350,000 vehicles ("General Information", 2016). In the first year of production, Hyundai produced exclusively red, white, and blue cars as a tribute to the colours of the Czech flag ("Automotive industry in the Czech Republic", 2009).

COMPARISON OF HMMC AND ŠKODA

As Table 2 below illustrates, Hyundai saw a considerable improvement in Czech market share for newly registered vehicles between 2001 and 2012, boosting market share from 1% to 8.7%. During the same period, Škoda Auto suffered a reduction from 52.5% down to 30.9%.

Year 2001			Year 2012		
Brand	Quant.	Share (in %)	Brand	Quant.	Share (in %)
Škoda	79 948	52.5	Škoda	53 778	30.9
VW	9 517	6.3	VW	15 185	8.7
Renault	8 838	5.8	Hyundai	15 162	8.7
Opel	8 369	5.5	Ford	12 719	7.3
Peugeot	8 344	5.5	Renault	10 456	6.0
Ford	4 609	3.0	Kia	8 564	4.9
Citroën	4 259	2.8	Peugeot	6 725	3.9
Toyota	3 750	2.5	Citroën	5 711	3.3
Seat	2 793	1.8	Toyota	3 951	2.3
Fiat	2 773	1.8	BMW	3 901	2.2
Nissan	2 546	1.7	Opel	3 836	2.2
Mazda	2 358	1.5	Audi	3 810	2.2
Daewoo	1 995	1.3	Dacia	3 805	2.2
Suzuki	1 767	1.2	MB*	3 236	1.9
Hyundai	1 463	1.0	Nissan	3 163	1.8
Others	8 816	5.8	Others	20 007	11.5
Total	152 145	100.0	Total	174 009	100.0

Source: Automobile Industry Association, * MB = Mercedes-Benz

Table 2: New vehicle market share by brand (2001 and 2012).

Source: "Analysis of the Automotive Industry in the Czech Republic", 2013)

By 2015, that figure was up to 10%, which translates to an approximate 0.6% share of Czech GDP. While this figure may seem small, the biggest company in terms of contribution to GDP in the Czech Republic is Škoda, and it only contributed approximately 1.5%. For a perhaps more relatable comparison, Apple only accounts for 0.5% of US GDP, according to a 2015 Forbes article (Worstall, 2015).

After examining the environmental aspects of both companies, Hyundai is clearly superior. While Škoda is not featured in the Union of Concerned Scientists' report on the environmental performance of car manufacturers, Volkswagen, Škoda's parent company, is. It ranks a disappointing fifth out of eight ("The Environmental Performance of Car Companies", 2014). It is also worth noting that Volkswagen was in the spotlight in 2015 for a serious scandal where the company essentially rigged its cars during emissions testing to improve fuel efficiency ratings. In reality, they had engines that consumed considerably more fuel than advertised. Whether or not this form of cheating occurred with Škoda vehicles as well (there is nothing significant to suggest that it did), it was hardly a behaviour that radiated confidence in their concern for the environment. Hyundai, on the other hand, has repeatedly demonstrated through various endeavours and actions that it does.

SUMMARY

As previously discussed, the Czech Republic has historically been a country plagued by poor environmental standards and high levels of pollution. In their quest to improve in these areas, it will take more than just government regulation. Governments worldwide face the challenge of balancing economic prosperity with environmental regulation. Often these two concerns struggle to coexist. The Czech Republic is a perfect example of a country facing this struggle, since all of its main industries use exorbitant amounts of dirty energy ("The Czech

Republic: Environmental Problems”, 1999). The other important factor to make environmental progress is the existence of private firms that make sustainability a priority. Hyundai Motor Manufacturing Czech’s plant is exactly that. It is exactly the type of FDI the Czech Republic needs.

Since entering the Czech market in 2006, HMMC has demonstrated that it is possible to balance financial success with sustainable practices through its energy efficient “blue drive” vehicles, tree-planting initiatives, and eco-friendly factories. While this Hyundai subsidiary cannot single-handedly fix the environmental problems in the Czech Republic, it can and it does set an excellent example for Škoda, other Czech auto manufacturers, and industry in the country as a whole. As HMMC continues to increase its market share and the Czech Republic continues to push for better environmental standards, Hyundai’s environmental advantage only stands to grow. As it does, competitors will be forced to adapt. Slowly but surely the Czech auto manufacturing industry will become more and more green – or perhaps if Hyundai has their way, more blue.

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