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## THE DEVELOPMENT OF THE AUTOMOTIVE INDUSTRY IN POST-SOVIET COUNTRIES SINCE 1991

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### Abstract

This paper discusses the impact of industrial policy on the development of the automotive industry in five post-Soviet countries since 1991 (Russia, Ukraine, Belarus, Uzbekistan, and Kazakhstan). By using foreign trade and production statistics as well as qualitative data on automobile companies from business news, this paper highlights three different paths: success in post-2000 Russia and Uzbekistan, stagnation and struggle for survival in Belarus and Kazakhstan, and failure in pre-2000 Russia and Ukraine. The existence of an automotive industry before 1991 was not a factor in success because most pre-existing firms collapsed after the break-up of the Soviet Union. Instead, the growth of these post-Soviet automotive industries has essentially relied on the presence of global car makers. This research demonstrates that inward foreign direct investment and licensing agreements were fostered by the combination of protectionist policies that made importation uncompetitive and access of global firms to the large Russian market (both direct access and indirect access via a country with privileged access to Russia). This paper also highlights different strategies adopted by foreign firms: whereas the largest Western and Japanese companies invested directly in Russia, companies from China and Korea used Central Asia and Belarus as back doors to enter the Russian market.

**Keywords:** Industrial Policy, Transition Economies, Automotive Industry, Post-Soviet Countries

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### 1. Introduction

The objective of this article is to offer a comparative analysis of the different trajectories followed by the automobile industry in the former Soviet bloc countries after 1991. Although this industry plays a decisive role in economic growth and the development of industrial technologies, no comparative historical perspective is available to date. Therefore, this paper should be understood as an exploratory research.

With the end of communism, most post-Soviet countries experienced a transition to a market economy in the early 1990s, and the level of transformation differed drastically between them. Baltic countries and Moldova had much faster transitions due to strong support and guidance from the European Union, while the remaining countries had a more complicated, staged and longer transition. The major challenge was that Eastern European and post-Soviet countries moved to capitalism during a period when industrial policies were weakening as a result of the so-called Washington consensus (Williamson, 2009).

The automotive industry is a good example of the broad diversity of economic policies implemented in post-Soviet countries since 1991. It is a major economic sector, with its share of GDP in the early 1990s varying between 5% (France and USA) and 10% (Germany and Japan) in developed countries, and between 1% and 2% in many developing countries. At that time in Russia, the automotive industry accounted for 2% of GDP and employed around 400,000 people directly, around 1 million people in sales, after-market sales, and financing, and over 4.5 million people in related industries (Sintserov, 2000). However, after the transition to a market economy, automobile production in Russia declined—from 1.6 million units in 1992 to 1.0 million units in 1998—due to competition from used vehicle imports from European countries as well as global car makers like Volkswagen, Toyota, Chevrolet, Mercedes-Benz, BMW, and others. These challenges raised the need for new industrial policies to nurture and develop a competitive automotive industry. A similar pattern occurred in other post-Soviet countries.

Hence, this paper investigates the evolution of the new industrial policies adopted in post-Soviet countries to support the development of domestic automobile production. Industrial policy, for our present considerations, is defined by Itoh *et al.* (1991, p. 4) as “the distribution of resources between a country’s industries (sectors), or policies which seek to affect that country’s economic welfare by intervening in the industrial system of specific industries (sectors)”. In practical terms, industrial policies vary depending on the purpose of the policy intervention to a country’s economic structure and the specific industries that are subject to policy intervention (Kohama, 2007). The most widespread industrial policy is protectionism, which may include import quotas, tariffs, non-tariff barriers and other restrictions. Other forms of industrial policies include investment financing (low-interest loans from government funds); export financing (preferential tax measures or accelerated depreciation); and support of technological development (Kohama, 2007).

In this article, we analyze the forces that influenced the development of post-Soviet automotive industries and aim to identify the kinds of policy interventions made by five post-Soviet countries to protect, develop, and grow their automotive industries. The paper is organized as follows: Section 2 presents a review of literature on industrial policy in general and the role of such policies in transition economies. Section 3 describes the methodology used for this research. Section 4 is devoted to the analysis of industrial policies in the automotive industries of our five cases. Section 5 discusses the outcomes of the research and conclusions are presented in Section 6.

## 2. Literature review

This research builds on two major threads in the academic literature. First, there are works on the evolution of the concept of economic policy and developmental states. Since the Second World War, a number of scholars have investigated wide-ranging practical and theoretical issues on industrial policy (Amsden, 1989; Humphrey and Memedovic, 2003; Humphrey and Oeter, 2000; Lee, 2013; Mordue, 2019; Peneder, 2016; Rodrik, 2010; Wad and Govindaraju, 2011; Wade, 1990). These scholars have focused on the role of industrial policy in post-war European (Katzenstein, 1985) and East Asian economies (Callon, 1995; Danju *et al.* 2014; Johnson, 1982; Vestal, 1993; Wade, 1990), notably comparing the East Asian model with the Latin American import-substitution model (Amsden, 1989; Wade, 1990). A major outcome was to demonstrate that protectionist policies can nurture competitive companies, but that protectionism was often a time-limited action (Amsden, 1989; Johnson, 1982; Luosha *et al.* 2014; Peneder, 2016; Sato,

2013; Vestal, 1993). When companies became competitive, protectionism was ended and firms could enter the global market. This is called the developmental state model, which dominated mainly during the period from the 1950s to the 1980s (Sato, 2013). According to this approach, the developmental state model has largely contributed to the rapid growth and modernization of the economies of countries adopting such an approach. For instance, both Japan and South Korea, instead of maximizing competition, imposed restrictions in many areas for the purpose of increasing their investment rate and to promote their technological development. In the meantime, they created intense oligopolistic competition in individual industries among competing companies. Amsden and Singh, (1994) argue that government policies in both these countries were oriented towards creating long-term productivity and stable growth. However, the increase in competitiveness among companies was not merely the result of policies. In Japan, for example, in exchange for protection, the government required export expansion, set performance targets for domestic companies, and maintained oligopolistic competition, rather than providing subsidies to a single national company, as was the direction many governments took in their industrial policies, particularly in Europe (Amsden and Singh, 1994; Bouwens *et al.* 2018; Callon, 1995; Johnson, 1982; Kozminski, 1992; Rugraff, 2008; Stojcic and Aralica, 2018; Vestal, 1993). Private companies thus had to become competitive by their own means and to prepare themselves for the end of protectionism (Odagiri *et al.* 1996).

The objective of East Asian industrial policies is to protect “infant industries,” that is, industries in their first phase of development. Once companies have achieved a level of development sufficient to be competitive in world markets, the government withdraws. However, the efficiency of such policies is highly debated in the literature (Guarino, 2018). The main condition for ensuring the economic viability of infant industries is to offset the welfare loss incurred during that industry’s protected period by the advantages gained after the industry becomes internationally competitive. Prolonged protectionism has major negative aspects and behaviors such as rent seeking become prevalent, resulting in the industry becoming inefficient and the welfare loss from protection becoming larger than its benefits. Therefore, Caves and Uekusa (1976) criticized Japanese industrial policy in creating cartels and high barriers to entry, which led to allocative inefficiency in the economy. Critics against the developmental state became widespread during the 1980s. This opposition emerged in the context of the “Washington consensus,” named after the new policy inspired by neoliberalism and adopted during the same decade by the US government and international organizations (specifically the IMF and World Bank). The promotion of smaller state interventions in developing countries and the liberalization of inward foreign direct investments (FDI) considerably weakened the ability of governments to implement any interventionist industrial policy (Williamson, 2009).

The second type of literature on which this research is built consists of works on economic transition in former communist countries, specifically in Eastern Europe and the former USSR. During Soviet times, some countries possessed more economic freedoms than others, and some had more efficient centralized planning than others. Nevertheless, most post-Soviet countries shared common systemic and institutional features, and usually followed similar economic patterns (Bolesta, 2019). In Central and Eastern Europe (CEE), the transition started with a decline in output that ranged up to 30% from 1990 to 1994; in some post-Soviet countries, output continued to decline for seven years in a row (Albert, 1993; Chang, 2010; Rugraff and Sass, 2016). Works on the various types of capitalism are a useful tool for discussing the different paths followed by former socialist economies. Hall and Soskice (2001) distinguish two main types of capitalism (“liberal market economies” and “coordinated market economies”) and stress that both types demonstrate a potential for building comparative economic advantages. However, there are also political economies that can be classified as “totalitarian regimes” or “bureaucratically coordinated” systems, characterized by the fact that they “displace and dismiss the market” as the underlying coordinating instrument (Kornai, 2000). Accordingly, one can assert that some CEE and former Soviet countries have achieved a transition to liberal capitalism (Armenia, Czech Republic, Georgia, Hungary, Moldova, Poland) whereas others have not (most Central Asian countries, Russia, Belarus) (Bolesta, 2017; Brzeski and Colombatto, 1999; Feinberg and Meurs,

2005; Liargovas and Chionis, 2001; Popov, 1999; Sadler and Swain, 1994; Stojcic and Aralica, 2018). In the case of CEE countries, the choice of the capitalist system was relatively simple and most countries in the region chose to follow their better-off Western European neighbors by liberalizing the political and economic structures, leading to the creation of democratic societies and capitalist market economies and eventual integration into the European Union. Low-cost production factors and access to large consumer markets attracted high levels of FDI to CEE countries from technologically advanced countries like Germany, France, Italy, and others, which fueled over 10 years of fast growth (Bolesta, 2019; Brzeski and Colombatto, 1999; Feinberg and Meurs, 2005; Filatotchev, 1991; Jose and Filippov, 2012; Liargovas and Chionis, 2001; Popov, 1999; Richet, 1990). Bolesta (2017, 2019) and Popov (1999) discuss the transition process to the capitalist system in post-Soviet countries and note that Baltic countries followed the CEE path and entered the EU, while others (Central Asian countries, Belarus, Russia) pursued bureaucratically coordinated economies. Bolesta (2019) argues that capitalism with communistic features based on the concept of a 'post-socialist developmental state' became the major systemic and institutional form in Central Asian area. In the decades since the end of communism, some countries have shifted from one type of system to another. For instance, Russia initially adopted a liberal market economy under Yeltsin, before moving to a bureaucratically coordinated economy in the early 2000s under Putin; however, Russia had moved closer to totalitarianism by the mid-2010s (Bergsman *et al.* 1999; Freinkman and Yakovlev, 2015). Likewise, Ukraine adopted liberal capitalism in the 1990s, shifted to a coordinated market economy in the 2000s and returned to liberal capitalism in the 2010s.

Literature on industrial policies (developmental state) and transition economies shed light on the conditions in which new automotive industries have been shaped and developed in post-Soviet countries since the 1990s. It occurred in a post-Washington consensus context, where the idea of small government and free trade and investment were the norm. It shows also that there were clear differences between liberal market economies, such as most Eastern European countries and Russia in the 1990s, and countries that maintained strong government intervention, such as Russia after 2000 and Central Asia (Freinkman and Yakovlev, 2015; Sadler *et al.* 1993; Sadler and Swain, 1994). The role of foreign firms in the development of former socialist economies since the 1990s is also closely related to their type of economic system (Demekas *et al.* 2007; Fischer *et al.* 1996).

The automotive industry is a good example for discussing the impact of changing economic policies on the formation and development of an industrial sector over time. However, this is an under-addressed issue in the literature. Sintserov (2000) offered a view on the general development of the automotive industries in these countries in the 1990s. After the 2000s, attention shifted to foreign multinational corporations that relocated production units to former Soviet countries to benefit from cost reductions and local adaptations (Kotosaka, 2014; Tomiyama and Shioji, 2011; Tomiyama, 2016) as well as the influence of trade relations between Central Asian republics on the growth of the automotive industry in this region (Myant and Drahokoupil, 2008). We lack a general overview on the development of the automotive industries in post-Soviet countries since the 1990s. Therefore, the objective of this article is to contribute to the literature on transition economies by examining various industrial policies implemented in post-Soviet countries since 1991 that were directed at their automotive industries. By using a comparative approach, the conditions in which these policies were adopted, the extent to which they succeeded in nurturing competitive firms, and the lessons learned over time are discussed herein. The research questions addressed by this paper are as follows. How and to what extent have industrial policies contributed to automotive industry development in post-Soviet countries? Which types of companies (state-owned, private, foreign, and domestic) played a major role in this process?

### **3. Methodology**

This paper follows Mahoney and Reuschmeyer's (2003) comparative historical research methods by utilizing temporal processes, path dependence, conceptual formation and measurements, strategies of causal inference. It is based mainly on the analysis of secondary data, which includes statistics and reports published by the World Bank, International Organization of Automobile Manufacturers (OICA), Belarusian Automobile Association, Ukrainian Automobile Association, Kazakhstan Automobile Association, news feeds, and articles in business magazines. Data regarding production, sales, and localization were collected from the databases of OICA, national statistical organizations (such as Fedstat and Ukrstat), and internal records of automobile companies such as Uzavtosanoat (Uzbekistan). The time frame spans from 1991 to 2019.

These sources were used to make a qualitative comparative analyses of industrial policies adopted by five post-Soviet countries — Russia, Ukraine, Belarus, Kazakhstan, and Uzbekistan — in the automotive industry. In particular, we identified the main types of companies involved in each of these cases, to discuss their respective role in fulfilling the goal of the various policies implemented.

### **4. Industrial policies in five post-Soviet countries**

The start of automobile production in the Soviet Union was the result of a technology transfer from Western countries. The first motor vehicles were produced in the Soviet Union in the 1930s in the Gorkiy Automobile Factory (GAZ), using American design until the 1950s. Until 1947, motor vehicles were produced only in Russia, and later in Belarus (1947–1958), Ukraine (from 1958), Latvia (from 1961), and Armenia (from 1966) (Prokofyeva, 2011). The production of buses in Latvia continued until 1998 when the firm went bankrupt. The Erevan Automobile Factory also inherited the production of minibuses after Armenia became independent in 1991; however, it was not profitable after the collapse of the Soviet Union. The producing firm was privatized in 1995 and eventually went bankrupt in 2002. Failures to maintain automotive industries in Armenia and Latvia were the result of political and economic changes in those countries as well as the lack of a competitive advantage for nurturing this industry (Sintserov, 2000). Both countries chose to pursue a free market economy at a fast pace of trade liberalization and privatization. As a result, all weak and vulnerable industries collapsed within the first decade in the free market economy due to global competition. Although fast transition to liberal capitalism facilitated rapid growth in Eastern European countries, it was not the case with the automotive industry in Armenia and Latvia because of the absence of competitive advantages for nurturing this industry and a lack of interest from European carmakers for investing in these countries (Sintserov, 2000).

Nevertheless, the Soviet Union had a quite comprehensive automotive industry before its collapse. In 1990, production totaled 2 million motor vehicles, of which 1.2 million were passenger vehicles and 454,000 units (22.7%) were exported to more than 40 countries. The Soviet Union was the fifth largest automobile-producing country in the world after Japan, the U.S., Germany, and France. It was third in terms of truck production and number one in bus production. As of 1990, the Soviet Union produced 1.5 times more vehicles than South Korea, 2.2 times more than Brazil, 4 times more than China, and 5.6 times more than India (Afanasiev, 2013); however, by the 2000s, combined motor vehicle production in Russia and other post-Soviet countries was lower than in each of these countries. The loss in competitiveness of the automotive industry at the beginning of the 21st century, and what happened in the following years, is analyzed through the following five cases.

In 1991, the Soviet Union comprised 15 republics with a total population of 293 million people. After the collapse of the union, Russia had 148 million people, with the remaining population dispersed among the other 14 countries, which made them unattractive in terms of market size. The development of an automotive industry requires large-scale production and, consequently, access to a large market. The formation of the Commonwealth of Independent

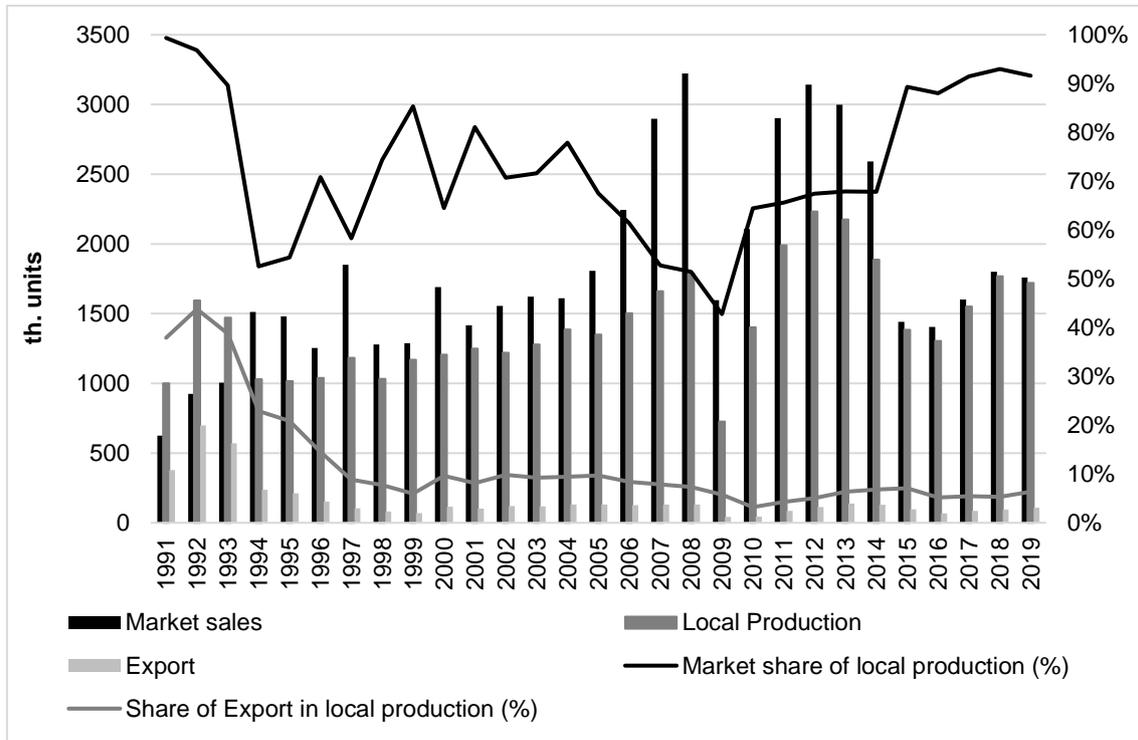
States (CIS) and signing of a free-trade agreement among the member states was an attempt to foster the market integration of post-Soviet countries and to guarantee access to the Russian market (Roberts and Wehrheim, 2002). This free-trade agreement was essentially an opportunity for small countries to overcome limits to their economic development posed by their small size. However, the wide range of political agendas among the 15 post-Soviet countries (including protectionist policies and rapprochement with the EU) weakened their access to the Russian market.

In 2010, Russia initiated the creation of the Eurasian Customs Union, with the aim of making a larger single market (similar to the EU) for free trade between member countries. Belarus, Kazakhstan, Kyrgyzstan, and Armenia have joined the Union (Iceberg, 2015). This market factor is essential for understanding the kinds of economic policies implemented by various governments to support the formation and growth of an automotive industry. The (temporary) access to the Russian market enabled small countries to adopt policies (mainly protectionist) that usually can only be carried out by large economies.

#### **4.1. Russia**

Since the collapse of the Soviet Union, the Russian automotive industry has experienced two phases of transition: first, trade liberalization with free inflow of imports during the 1990s, and second, protectionism for attracting inward FDI from 2000 onwards. As a result of trade liberalization, Russia was flooded with used car imports from Europe and other countries, which negatively impacted the sales of local producers using outdated technology. Furthermore, trade liberalization did not result in FDI to the automotive industry because it was more efficient in a free market for global manufacturers to simply sell their vehicles in the market (Gricunova and Nikolaenko, 2015; Sintserov, 2000). The turning point toward protectionism occurred in 1998, when the Russian government started to develop a strategy for attracting inward FDI (Cooper, 2006; Ernst and Young, 2018; Krkoska and Spencer, 2008; Sintserov, 2000). Inspired by the successful industrial policies of China and Brazil, the Russian government decided to attract global vehicle manufacturers to set local production (private or joint ventures) by establishing protective barriers for local manufacturing and implementing various financial incentives. At the same time, the policy set requirements and targets for investors, such as making production capacities of 300,000 units within four years and reaching a localization level of 60% within six years (Antsiferov, 2010; Boston Consulting Group, 2013; Dementiev, 2005). As a result, Renault opened a joint venture with the Municipality of Moscow in 1998 and Ford opened its fully owned plant in 2002 (Renault, 2021). Other major carmakers followed and established fully owned production facilities in Russia (Toyota and Volkswagen in 2007, General Motors in 2008, Nissan in 2009, Hyundai in 2010, Mazda in 2012, Mercedes and Haval in 2019) (Autostat, 2021). Peugeot Citroen and Mitsubishi founded a 50–50 joint venture in 2010 (Ria Novosti, 2010). The government shares in Russian vehicle manufacturers were sold to either foreign investors such as the Renault-Nissan-AvtoVAZ Alliance in 2014 or to local private investors such as the Gaz Group and UAZ (Boston Consulting Group, 2013). The government retained some shares only in strategic companies such as AvtoVAZ and KAMAZ to preserve Russian legacy brands such as Lada and Kamaz (Chirkina, 2017; Richet, 2003).

Consequently, local production capacities developed, and the share of locally produced vehicles increased up to 98% by 2019 from its lowest level of 40% in 2009. As shown in Figure 1, the local production of automobiles in Russia between 2004 and 2008 experienced a stable 8%–10% annual growth. However, growth in demand exceeded the local production capacity. As a result, the share of imported vehicle sales increased over the period (Savin, 2015). Between 2000 and 2008, the Russian automobile market more than doubled, reaching around 3.3 million vehicles, which attracted further FDI in the industry.



**Figure 1. Motor vehicle (passenger and commercial) sales, exports, and local production in Russia for 1991–2019.**

**Source:** International Organization for Motors Vehicle Manufacturers (OICA), (2020); State Statistics of Russian Federation (2020)

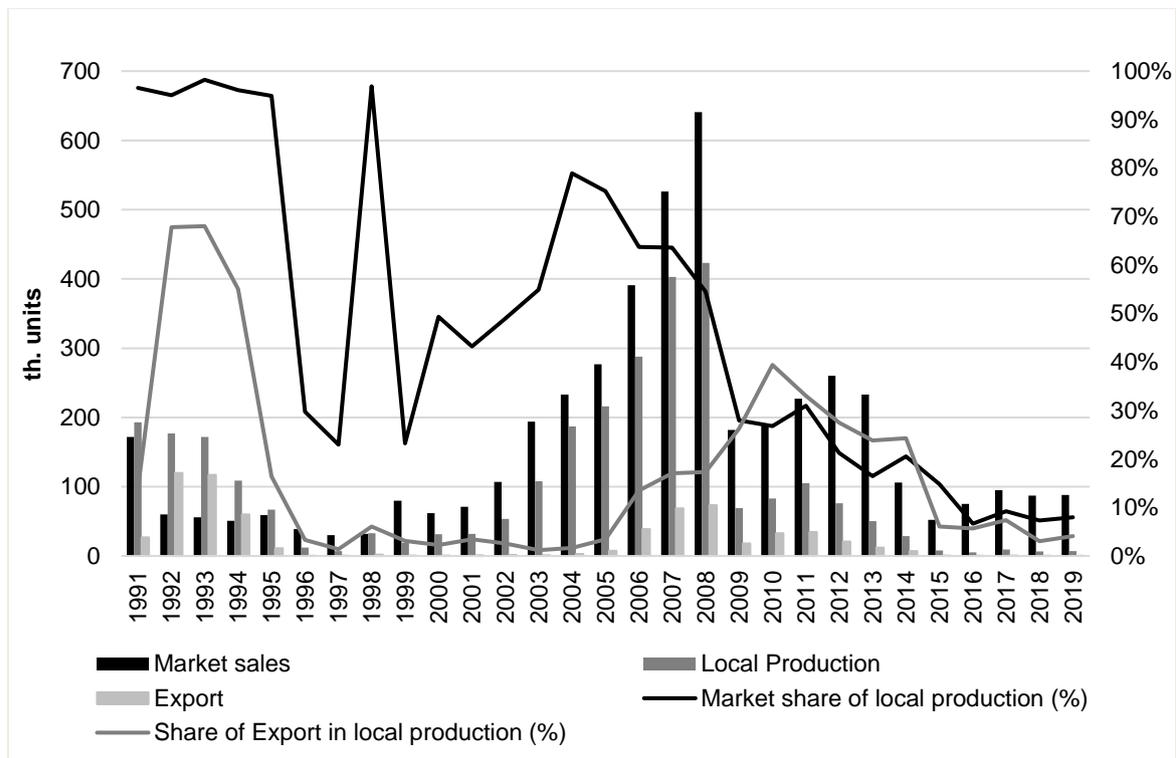
The global financial crisis of 2009 impacted overall sales, which were later supported by the government through various measures, such as financing additional government purchases, scrapping bonus programs, and increased import tariffs. The reorientation of industrial policy resulted in local production increasing nearly doubling between 2009–2013 (Figure 1) (Afanasiev, 2013). Similar support measures were used during the crisis of 2014–2016, when demand fell almost by half and bottomed out at 1.4 million units of motor vehicles sold in 2016 (Dyker, 2004). The share of exports from local production was 44% in 1992, which declined over time until it reached 6% in 1999 because the cars produced in Russia that were inherited from the Soviet Union became unattractive in the main export markets (post-Soviet and Eastern European countries) due to harsh competition from global automakers. From 1999 to 2019, the average share of exports from local production remained at around 7%, which shows clearly that, unlike China, foreign firms did not use Russia as a basis for exports, but rather invested in this country due to its large size. The Russian automotive industry developed in a protectionist environment through inward FDI but this did not lead to the emergence of local firms that were globally competitive.

#### 4.2. Ukraine

Ukraine inherited four automobile producing factories from the Soviet Union, which were used to produce passenger vehicles, small SUVs, buses, and heavy-duty trucks. These factories struggled for survival because of disrupted supply chains as well as weak sales to other post-Soviet countries (Gavrish, 2008). The Ukrainian government began privatizing the industry, and by the middle of the 2000s, all state-owned assets in the automotive industry were privatized, mostly through purchases by domestic investors. Several foreign companies like Daewoo Motor

(1998–2001), Skoda, and Volkswagen (2003–2008), and Lada (2002–2014) started local assembly in Ukraine through license agreements with the facilities of local private companies (Podronosti, 2014; Rowe, 2015).

The evolution of the automotive industry in Ukraine can be split into three different stages. The first stage lasted from 1991 until 1998, and can be described as the death of the automotive industry inherited from the Soviet Union. Annual production volume of motor vehicles experienced a continuous decline from 193,000 units in 1991 to 7,100 in 1997 (Figure 2). The main reasons for such sharp decline were the liberal trade policies that allowed for easy entry of used cars from European countries, outdated production technology, an uncompetitive, outdated model range, lack of investment in R&D, and the inconsistent industrial policy for the sector (Oxford Business Group, 2008; Yegorov, 2004).



**Figure 2. Motor vehicle (passenger and commercial) sales, exports, and local production in Ukraine for 1991–2019**

**Source:** Ukrainian Automobile Association (2020); Ukrainian Statistics Agency (2020); International Organization for Motors Vehicle Manufacturers (OICA), (2020)

The second stage, characterized by local assembly growth, started in 1998 when the government decided to rehabilitate the automotive industry by raising customs duties for automobiles from 15% to 25%. This protectionist policy yielded its first results starting in 2003, when local production grew from 48,100 units in 2002 to a peak of 423,100 units in 2008. Similar to the Russian case, the share of exports in local production was 66% in 1992, with the bulk of exports going to post-Soviet countries. The share of exports declined to a mere 1% in 1997 due to outdated technology and uncompetitive products, and remained low until 2005.

The second stage lasted until 2008 and gave way to the third stage, which can be described as the decline of the local automotive industry, when Ukraine became a member of the World Trade Organization (WTO) and automobile import tariffs were lowered to 10% (and later to 5% in 2013) for passenger vehicles, and from 20% to 10%–15% for buses and trucks (Autoconsulting, 2015). Thus, local producers became uncompetitive against imported vehicles

and local production started to decline. The global financial crisis had a severe impact on overall market sales, which fell from 641,000 units in 2008 to 181,000 units in 2009; similarly, production of new vehicles declined from 423,000 units in 2008 to 69,000 units in 2009. This triggered the insolvency and bankruptcy of many vehicle assemblers. Starting in 2006, the share of exports in local production started to increase, peaking at 39% in 2010; however, this trend was short-lived and the share of exports declined to a mere 4% in 2019, which is a clear sign of the non-competitiveness of the industry. Moreover, Ukraine was hit by several political crises that had a profound impact on domestic demand. The Orange revolution (2004-2005), Euromaidan (2013), and the war against Russia (starting in 2014) all contributed to the stagnation of the automobile market.

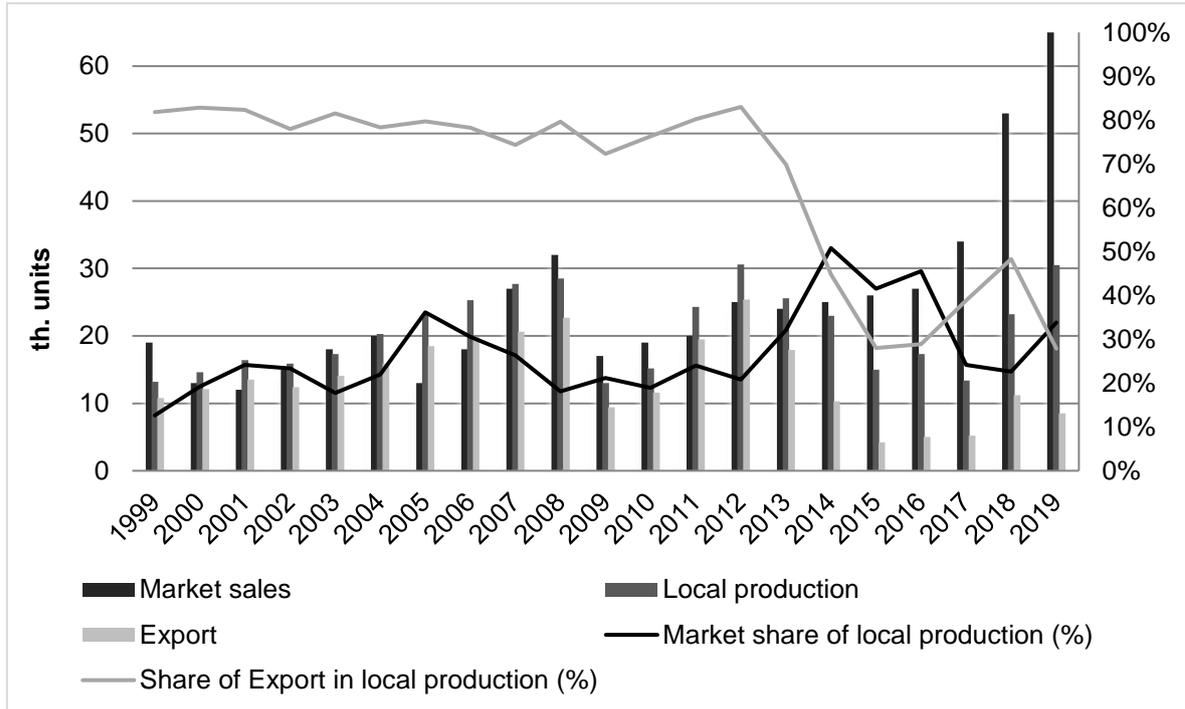
To support its automotive industry, the government adopted a new protectionist policy in 2013, characterized by non-tariff barriers (e.g., special protection tax, ecological tax). Thus, local producers started to grow again and their share in the market increased from 21.7% in 2013 to 27.1% in 2014 (Autoconsulting, 2015). However, the support measure lasted only for one year due to strong domestic opposition against the policy. Again, political instability led to a decline in production. Moreover, the Ukrainian market was too small for foreign companies to invest in and poor relations with Russia made it difficult, if not impossible, to negotiate a free-trade agreement that would give access to the Russian market. Hence, the protectionist policy in place since 2013 has had a very different impact than it did in Russia.

### **4.3. Belarus**

During the 1980s, Belarus was third (after Russia and Ukraine) within the Soviet Union in terms of motor vehicle production, with an annual production of 40,000 commercial vehicles, most of which were trucks and agricultural vehicles (Vallejo, 2011). The evolution of the automotive industry in this country since 1991 has three major characteristics. First, Belarus is one of the post-Soviet countries that changed the least. It followed the “totalitarian regime” or “bureaucratically coordinated” model of political economy. The state has maintained ownership, control, and management of its automobile companies. For instance, in 2004, all firms producing motor vehicles in Belarus, except for the joint venture MAZ-MAN, were state-owned, whereas more than 84% of parts manufacturers were more than 50% government-owned (Vallejo, 2011). Second, there were several attempts to adopt global production technologies via joint ventures with foreign automakers (Ford, Samand, Geely), but these were mostly unsuccessful. For example, the joint venture MAZ-MAN was established in 1998 with the aim of producing European heavy-duty trucks for regional and international transport in Belarus but was under the strong control of the Belarusian government (MAZ-MAN, 2021). Despite several attempts to create alliances or joint ventures with global players in the automotive industry, Belarus lacks the participation of foreign vehicle manufacturers, despite its attractiveness as a point of access to the larger Russian market. This lack of foreign involvement can be attributed to the high political risks in its relations with Russia as well as its status as a totalitarian regime. Third, the Belarusian automotive industry is concentrated in the production of heavy commercial vehicles and largely depends on the Russian market. In 2010, 65% of the vehicles produced in Belarus were exported to Russia (Vallejo, 2011). Changes in technical requirements, import tariffs, financial fluctuations, and economic slowdowns in the Russian economy all have the potential to strongly impact the automotive industry in Belarus. For instance, when Russia introduced the mandatory payment of scrapping fees in 2012 and kept upgrading emission standards (EURO III-IV-V) for all vehicles sold in Russia, the sales of Belarus commercial vehicles in Russia declined three-fold (Vallejo, 2011).

Despite several attempts by the government to modernize production capacities and technologically upgrade the model range of domestically produced commercial vehicles, the Belarusian automotive industry is lagging far behind its global competitors in terms of production technologies, R&D, and compliance with emission standards. As a result, although global production of commercial vehicles has increased by about 1 million units between 2005 and 2010,

the production of commercial vehicles in Belarus decreased by more than 40% over the same period (Vallejo, 2011).



**Figure 3. Motor vehicle (passenger and commercial) sales, exports, and local production in Belarus for 1999–2019**

**Note:** data unavailable before 1999.

**Source:** Belarus Automobile Association (2020); International Organization for Motor Vehicle Manufacturers (OICA) (2020)

Since independence, Belarus has been trying to establish the production of passenger vehicles in the country to diversify its automotive industry. The government initiated the assembly of passenger cars in cooperation with Ford in 1997 at the private company “Ford Union,” and later with the Iranian company Samand in 2006 at the private company “Unison,” which sold only few thousand vehicles (mainly to government organizations) over several years (Unison, 2021). As a result, operations were discontinued due to low sales (Smok, 2017). Next, in 2011, the Belarusian government established the joint venture Belgee with the Chinese firm Geely. Its production of passenger vehicles amounted to only 3,580 units in 2018, which lagged behind imports such as Renault, LADA, and Volkswagen (Smok, 2017). In general, the Belarusian automobile market reached its peak in 2019 with sales of 65,000 vehicles (Figure 3).

Export volumes have been stable at around 80% from 1999 to 2012, mainly to post-Soviet countries, owing to the unique features of the super heavy-duty commercial vehicles produced by MAZ and BELAZ. However, as a result of intensified competition, exports fell to around 40% in 2019. The figures clearly show the export orientation of the commercial vehicles produced in the country. Nevertheless, global companies have been reluctant to invest in the country because of the government’s strict control over the industry.

#### 4.4. Kazakhstan

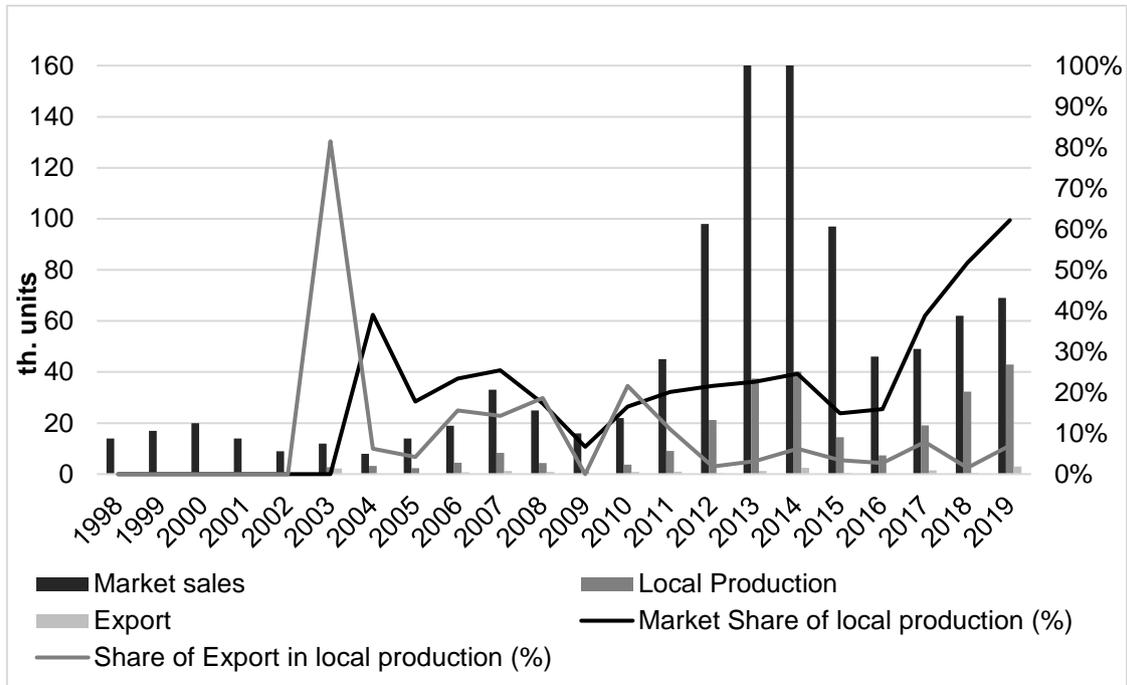
Kazakhstan did not inherit an automotive industry from the Soviet Union and the country did not pay much attention to this industry during the early 1990s. However, to take advantage of

abundant reserves of natural resources such as crude oil, the Kazakh government concentrated at that time on a growth path focused on the extraction and production of natural resources. Consequently, Kazakhstan was the leading country in Central Asia for inward FDI, mainly to the oil and gas extraction and refining industries. Kazakhstan also had the highest GDP growth per capita in the region from 1991 to 2018 (World Bank, 2019).

The automotive industry in Kazakhstan started in 2003, with the assembly of one model of car (the LADA Niva) by a private domestic company, AziaAvto, in the city of Ust-Kamenogorsk (Iceberg, 2015). Another important step was made in 2011, when two new private enterprises were established: SariArkaAvtoprom, which assembles vehicles from South Korea's SsangYong Motor Company, and Hyundai Trans Auto, which assembles buses and special utility vehicles from Hyundai, also from South Korea. The production was organized under license agreements by local investors, and thus no foreign capital entered this industry. The government subsidized loans to finance these private companies, lifted protective barriers from import, and issued exemptions from taxes and duties (Iceberg, 2015). The automobile market in Kazakhstan was small, with around 10,000 units sold annually through 2010 (Figure 4). The market grew to 165,000 units in 2013–2014 thanks to devaluation of the Russian ruble against the US dollar, which stimulated the import of cars from Russia. At the same time, local production also grew and reached a peak of 69,000 units in 2019 thanks to a government stimulus package with low-interest-rate loans, which were applicable to domestically produced cars only.

The Russian crisis of 2014–2015 had a detrimental effect on the Kazakh automotive industry. The reduction of hard currency into the country devalued the national currency, thereby causing the purchasing power of the population to drop almost twofold. Sales of new vehicles declined from 163,500 units in 2014 to 46,200 units in 2016. At the same time, sales of locally assembled vehicles fell from 40,100 units in 2014 to 14,500 units in 2017. One of the main reasons for such a substantial drop in the sales of locally assembled vehicles was low localization levels—in other words, the cost of vehicles was highly dependent on exchange rate fluctuations (Iceberg, 2015; Informburo.kz, 2017).

During the crisis, the government supported local manufacturers by providing subsidized consumer credit, restructuring industry loans, offering incentives for exporting vehicles, and propping up local sales (RFCA Ratings, 2017). Moreover, the government initiated a program to scrap old vehicles, under which owners of old vehicles who scrap their vehicles received discount certificates for the purchase of a new vehicle (Informburo.kz, 2017). Yet, after becoming a WTO member in November 2015, Kazakhstan was required to reduce import duties for motor vehicles down to 15%–20% (Informburo.kz, 2017). Thus, with an unprotected market, local manufacturers lost much of their incentive for continuing operations. In 2016, based on the experience of Russia, to protect the domestic automotive industry, the government mandated scrapping fee for all imported and domestic vehicles. However, the local manufacturers had these fees refunded in various ways.



**Figure 4. Motor vehicle (passenger and commercial) sales, exports, and local production in Kazakhstan for 1998–2019**

Note: data unavailable before 1998.

Source: Kazakhstan Auto-business Association (2020)

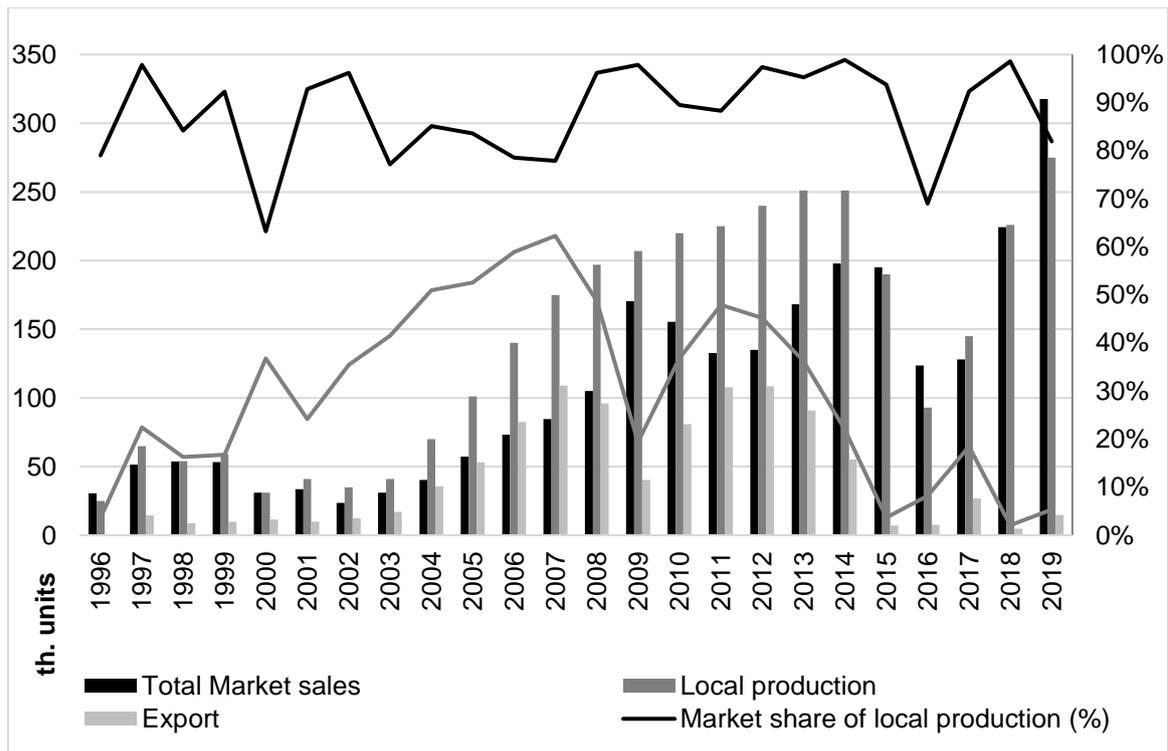
After reaching its bottom in 2016, the Kazakh automobile market started to grow with sales of 49,200 vehicles in 2017 and 62,400 vehicles in 2018. The share of locally assembled vehicles grew from 15.9% in 2016 to 62% in 2019. With the support of government incentives, exports to neighboring countries also increased between 2016 and 2019. Local producers increased exports of vehicles from 1,500 vehicles in 2017 to 2,629 vehicles in 2019 to Russia (27%), Kyrgyzstan (24%), Uzbekistan (23%), Tajikistan (20%), and China (6%) (AKAB, 2019). However, overall export volumes remained small due to the low level of locally added value and the high production costs due to the overly broad model range, which did not allow firms to achieve economies of scale for localization and cost reduction. The prices of cars made in Kazakhstan were simply uncompetitive. Moreover, most of the neighboring countries and post-Soviet countries have protective barriers to support their own local assemblers.

#### 4.5. Uzbekistan

Similar to Kazakhstan, Uzbekistan did not inherit an automotive industry from the Soviet Union in 1991 when the country gained independence (Tadjiev and Donze, 2020). Being a double-landlocked country, Uzbekistan did not have access to the sea, nor did it have abundant natural resources. However, Uzbekistan has had one of the fastest growing populations among former Soviet Union countries since independence (22.8 million in 1995 and 33.9 million in 2018) (World Bank, 2019). The Uzbek automotive industry started with the joint venture UzDaewooAuto, with ownership equally divided between the government and the South Korean Daewoo Motor company in 1992. The government provided comprehensive protection for the local market, including increased import tariffs and exemptions from all duties and taxes on the imported machinery, equipment, and parts for vehicle production. These privileges were also applicable for all local manufacturers of parts for the joint venture (Decree, 1992). The authorities also created a holding company (Uzavtosanoat) to manage the government shares in the joint ventures and

to make policy for the development of automotive industry. Therefore, the chairman and vice-chairman of the state-owned holding company were also a minister and deputy minister in the government, respectively. In other words, Uzavtosanoat became a policymaker and policy user at the same time (Tadjiev and Donze, 2020).

The first cars came off the UzDaewooAuto assembly line in July 1996 under the Daewoo brand. Production was organized as a complete industrial process, which included stamping, welding, painting, and assembly processes. Taking advantage of customs duty exemptions under the free-trade agreement signed between most of the former Soviet Union countries, UzDaewooAuto was able to develop its sales network and sell its vehicles in most of the former Soviet Union countries. In the early 1990s, most of these countries did not yet have significant protective barriers for their automobile markets and UzDaewooAuto enjoyed fast sales growth in those markets. As a result, the export volumes increased from 900 units in 1996 to 109,000 units in 2007, and total domestic production reached 168,600 units in 2007 (Figure 5). Within 12 years, UzDaewooAuto had exported 361,000 vehicles with the largest share going to Russia (88%) and Ukraine (7%) (Tadjiev and Donze, 2020). Large production volumes allowed the company to invest in the localization of parts in the country, thereby advancing the technological development of the industry (Tadjiev and Donze, 2020).



**Figure 5. Motor vehicle (passenger and commercial) sales, exports, and local production in Uzbekistan for 1996–2019**

**Note:** data unavailable before 1996.

**Source:** Uzavtosanoat (2020)

After Daewoo Motor went bankrupt in 2000, Uzavtosanoat took over the company and finally reached an agreement in 2008 with GMDAT (General Motors Daewoo Auto & Technology) to establish a new joint venture, GM Uzbekistan, building on the model of UzDaewooAuto. This joint venture was granted the same privileges and government support as the previous one. Between 2008 and 2017, GM Uzbekistan organized the production of four new models and

increased its capacity to 300,000 vehicles a year. Between 2008 and 2019, Uzavtosanoat invested in the expansion capacity of local suppliers, increased localization of imported sub-components, and established 12 new domestic companies for parts production, mainly with South Korean partners (Tadjiev and Donze, 2020).

The Russian economic crisis and the drop in oil prices in 2014 resulted in exchange rate fluctuations and a sharp drop in the purchasing power of consumers in Uzbekistan and its export markets. As a result, the production volumes of GM Uzbekistan dropped from 235,100 units in 2014 to 84,800 units in 2016 (Figure 5). Moreover, Russia's increasing support for its own automotive industry made it harder for Uzavtosanoat to compete in the Russian market.

Inspired by the previous success of the joint venture model for passenger vehicle production, Uzavtosanoat created joint ventures with the Japanese firms Isuzu and Itochu for midsize truck and bus production in 2006, and with the German firm MAN for heavy-duty truck production in 2009. The product portfolio of Uzavtosanoat was organized in such a way that each product fills the needs of a specific automobile segment and does not cannibalize sales in other segments. However, due to government protection from outside rivals, domestic manufacturers enjoyed monopolistic power, attaining a market share of over 95% in Uzbekistan, and thus the company could charge higher prices for their products (Bae and Mah, 2019).

## 5. Discussion

Although three of the five largest automobile producers in the former Soviet Union inherited a vehicle industry, this factor has had little if any impacts on the successful development of this industrial sector since 1991. Russia was able to develop its automotive industry starting in 2000 following a shift from liberalism to protectionism and strong state intervention that attracted inward FDI owing to the large size of the domestic market. It is important to stress the lack of continuity between Soviet-era car production and post-2000 production in Russia because most of today's car companies in Russia are foreign-owned. Ukraine and Belarus were unable to maintain or build upon the automotive industries they inherited from the Soviet Union because they enacted ill-conceived policies (free trade in the former case and Soviet-style totalitarianism in the latter). In contrast, Kazakhstan and Uzbekistan built their post-Soviet automotive industries from scratch. Consequently, the pre-existence of a vehicle industry cannot be considered a factor in the successful development of an industry since the end of communism in 1991. Hence, what are the factors that can explain the growth of automotive industries in post-Soviet countries?

**Table 1. Summary of main features of industrial policies and economic indicators for Russia, Ukraine, Belarus, Kazakhstan and Uzbekistan**

#	Countries	Inheritance of Auto industry from Soviet Union in 1991	Population <sup>a</sup> (in Millions, 2019)	GDP / capita <sup>b</sup> (in USD, 2019)	Annual car production in 2019 <sup>c</sup> (th. units)	Number of local car producers in 2019	Ownership structure of automobile companies	Inward FDI	Access to Russian market	Industrial policy
1	Russia	Yes	145.9	11,585.0	1,719,8	> 30 <sup>d</sup>	Private	Yes	-	Liberalism (1990s); protectionism (since 2000)
2	Ukraine	Yes	44.0	3,659.0	7.3	> 3 <sup>e</sup>	Private	Yes (till 2008)	No	Liberalism
3	Belarus	Yes	9.4	6,663.3	30.5	> 4 <sup>f</sup>	State	No	Yes	Protectionism; authoritarian regime
4	Kazakhstan	No	18.6	9,731.1	49.4	> 2 <sup>g</sup>	Private	No	Yes	Protectionism
5	Uzbekistan	No	33.0	1,724.8	277.0	4 <sup>h</sup>	State	Yes	Yes (till 2014)	Protectionism, authoritarian regime

**Source:** World Population Review (2019)<sup>a</sup>, World Bank (2019)<sup>b</sup>, International Organization of Motor Vehicle Manufacturers (OICA) (2020)<sup>c</sup>, Autostat (2021)<sup>d</sup>, Ukrainian Motor Vehicle Manufacturers Association (2020)<sup>e</sup>, Belarus Automobile Association (2020)<sup>f</sup>, Kazakhstan Auto-business Association (AKAB) (2020)<sup>g</sup>, Uzavtosanoat (2020).

The main features and economic indicators of the five countries analyzed in this paper are summarized in Table 1. Production in 2019 shows two successful cases (Russia and Uzbekistan), two intermediary cases (Belarus and Kazakhstan), and one failure (Ukraine). Population and GDP per capita had no direct impact on these different paths. Moreover, the form of ownership, whether private (Russia, Ukraine, and Kazakhstan) or state (Uzbekistan and Belarus), did not play a major role.

The most important factors are market size (or access to markets) and industrial policy. The development of an automotive industry after 1991 required cooperation with foreign companies to implement new design and production techniques. Inward FDI—or licensing agreements in the case of Kazakhstan—was also necessary. Yet, to attract automobile giants, governments needed to offer access to a large market and to adopt protectionist measures that would make direct importation unprofitable. Russia is the perfect example of a country that failed to develop a car industry in a liberal environment but succeeded in a protectionist one. Moreover, unlike Ukraine, Russia did not decrease protectionism despite joining the WTO. As for the other four countries, the relatively small size of their domestic markets was not necessarily an obstacle. Free access to the Russian market, through the free-trade agreement among CIS countries, made them part of a large market, similar to other free-trade agreement zones such as ASEAN, the EU, and NAFTA. Investing in Uzbekistan and Belarus or making a licensing agreement with Kazakhstan automakers was attractive because foreign companies aimed to access the Russian market. In addition, the companies that invested in these three countries were mostly secondary players on the global market (e.g., Korean firms in Uzbekistan and Kazakhstan, and Chinese firms in Belarus), while major multinationals entered Russia directly. This was obviously the strategy of latecomer firms attempting to improve their international competitiveness.

However, access to a large market is not the only factor. To succeed, access must be coupled with appropriate industrial and diplomatic policies, characterized by the twofold need to adopt protectionism to incentivize foreign companies to invest in the country and to keep a close proximity to Russia to maintain access to its market. Ukraine failed to develop an automotive industry because of its different political agenda (liberal economic policy and proximity to the EU). Uzbekistan was cautious about joining the Eurasian Customs Union due to uncertainty about its real advantages because the existing free-trade agreement between CIS countries provided nearly the same privileges.

## **6. Conclusion**

This analysis of the development of automotive industries in five post-Soviet countries since 1991 enabled us to discuss the role of industrial policies in this process. Our cases offer a general confirmation of the infant industry theory, which posits that nascent industries in less-developed countries initially require state protectionism to catch up with their competitors in more advanced nations. In an open global economy, Russia (until 2000) and Ukraine have been unable to develop their own automotive industries. However, the growth of domestic automobile production is not merely the result of protectionism. Automobile manufacturing is a complex industry dominated by multinational corporations and it is therefore necessary to cooperate with these companies to support the development of a domestic industry. Foreign capital is present in the automotive industry in each of the five countries examined in this research, no matter who the dominant actor is (state-owned or private companies). Thus, to succeed, governments were required to offer attractive incentives to attract multinational firms. Unlike China, before the global financial crisis and Southeast Asian countries, low labor costs were not the primary factor for attracting major global automotive companies. Indeed, none of the five post-Soviet countries has become a competitive exporter to the global market. Rather, it was access to a large market that made foreign firms invest in Russia and other post-Soviet countries. For Central Asian nations and Belarus, this required their governments to reach agreements with Russia. Thus, free-trade agreements and regional market integration can be considered as policies that supported local industrial development.

Because this paper focused mainly on industrial policies, the various strategies carried out by multinational corporations that invested in these five post-Soviet countries remains unclear. In particular, the backdoor strategy adopted by Korean and Chinese companies in Central Asia and Belarus to access the Russian market requires further research. Moreover, to broaden the discussion on the importance of the Russian market in attracting foreign investment in post-Soviet countries, a general analysis of the largest multinational corporations in these countries would be an important step, as Forbes (2019) did for Russia.

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