

Impact of Audi Hungária Motor Kft. on the local economy

*Dr. János Rechnitzer (rechnj@sze.hu), Katalin Czakó, Tamás Tóth
Széchenyi István University, Győr, Hungary*

Abstract

Role of foreign direct investment in a given region can be potential success factor according to the literature (Lengyel 2010). Level of private capital and connected owner networks are quite objectively measurable items in the framework of new conception of territorial capital (Camagni 2009). In case of Győr, entrepreneurialism is strongly affected by foreign capital, which has visible and institutionalized outcomes in everyday life. The following study introduces the main points of cooperation between Győr and Audi Hungaria Motor Kft. Beside this the study highlights the main characteristics of the hosting region and the company itself, which have possible effects on each economic actor. The study has five main points. First point is a general introduction of Audi Hungaria Motor Kft. Secondly the study analyses the demography, especially data of labor market in Győr and surroundings and introduces the main points of the expansion process. Third point gives detailed picture of the logistics and supplier group of the company. After that the study introduces the economic developer role of the local government through the given industrial infrastructure and the tax system. Finally CSR activities of the company are collected. The study is aiming to highlight those effects, which can be originated from the presence of AHM and can be potential critical points in aspect of long-term regional development.

Keywords: territorial capital, foreign investments, regional development

Introduction of Audi Hungária Motor Kft.

Audi Hungária Motor Kft¹ develops and produces engines in its Győr based facility for the AUDI AG and other premises of the Volkswagen Concern. Besides this, in cooperation with the Ingolstadt based facility, the models Audi TT Coupé, Roadster and A3 Cabriolet are produced here. Following its 1993 establishment, the company soon grew to be one of Hungary's major exporters and one of the best-capitalized corporations in Hungary. Its share capital was 100 million Euros at the time of establishment. Its major fields of activity are production of engines, engine components, automotive devices², tool engineering and technical development. The history of AUDI AG goes back to the end of the 19th century. Audi was founded in 1909, at the end of the 1800s, in the era of the German automobile factory establishments. Later, in 1932 it merged to Auto Union AG with the 1885 established Wanderer, the 1899 established Horch and the 1907 established DKW. In 1949 the

¹ Hereinafter: AHM

² Designed and produces devices and catchers, which make it possible that -with the use of the most modern technologies- the single parts of the auto body are linked with geometric accuracy to each other. These devices for almost all models of the VW Concern are produced at the AHM (i.e. for Audi, Porsche, Seat, Škoda, Volkswagen).

corporation was renamed to Auto Union GmbH. The next important date in the company's life was 1969, when, following the merger with NSU Motorenwerke AG -the successor of 1873 established, Neckarsulm based NSU- Audi NSU Auto Union AG was established with its head office in Neckarsulm. From 1985 on the Corporation was operated under the corporate name of AUDI AG with new headquarters in Ingolstadt. Today Audi is a member of the VW Concern and its facilities are present across the globe: from Japan to Brazil, from Italy to Australia.

Demography, economy and industry of Győr

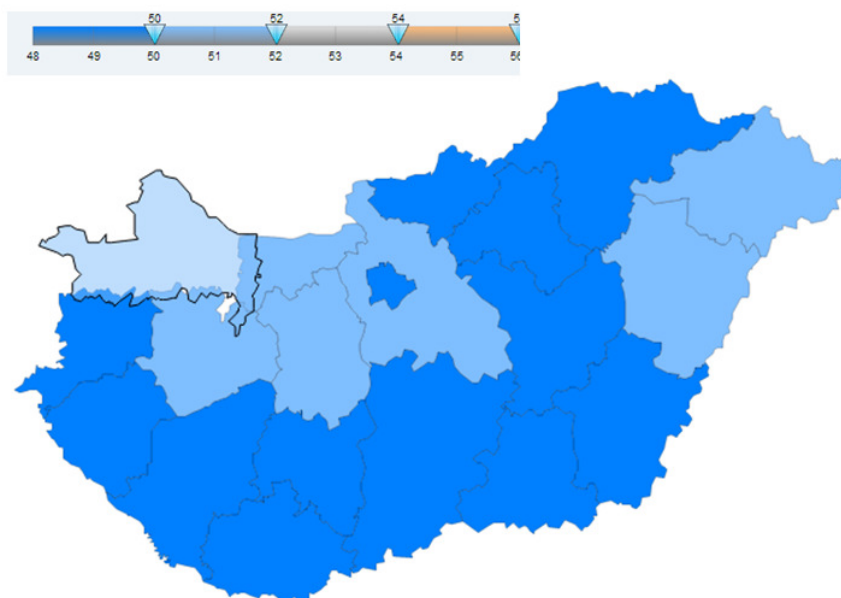
The city of Győr –due to its favorable geographic features- has been of central importance for centuries. In the Roman times a fortified town was fulfilling defensive functions here. It became an important nod in the Pannonian road network; the map of the subsequently important commercial routes evolved in this era. At this time have people started to exploit those excellent geographic features, which rendered Győr to the trade center the region. At the time of the Turkish occupation, as a strategic border stronghold, its defensive role got accentuated again. The town has been expanding steadily and getting wealthier throughout the long years of its defensive function. Till the end of the 18th century baroque architecture had been gaining space in the town, the palaces still add to the beauty of the historic center. Considering the city's current commercial and industrial functions the role of the 19th century has to be highlighted, when the Győr became a significant industrial center, a function, which has been kept until today. Due to the long and rich history a significant number of foreign investments settled in the city after the transitional period. Business activities lacking any historic predecessors have been started. The area of Győr, mainly through the establishment of the later Győr Industrial Park became ready to welcome new branches of industry. The interest of foreign capital investors in the well-equipped industrial sites has been unbroken ever since (GYMJVÖ 2008). The city is one of the Hungarian front-runners considering its population, industrial output and the level of the average income.³

Impacts of the company's presence on manpower

From among the demographical data of Győr, as a county seat, this study investigated the relationship between the working population and the number of businesses at the time of the establishment of AHM. Figure 1 represents the proportion of the active population in the county. Disassembly of the data was completed on county-level. The catchment area of Győr is bigger than this; however, Hungary's western part was detached when analyzing the proportions of the active population, since there we can assume that the major volume of settling was partly motivated by the intention of working abroad. This might have a distorting impact considering the object of our analysis. When studying the 2009 data we can see, as displayed in Figure 1, that the proportion of active population in Győr-Moson-Sopron County is 50.37%. In comparison with the other counties this number is rather high, since the figure shows counties- marked with dark grey color- where this proportion does not reach 50%. The figure shows the 2009 data. If we regard the respective data of the previous years (1996-2008) and compare them with the data of the other counties we can say that Győr-Moson-Sopron County has been always in the group of counties with rather high employment rate: 56-57% in the 10 year period before 2008 (TEIR).

³ 2011-2012-data, KSH (Hungarian Central Statistical Office)

Figure 1 - Active population in the labor market (% of total population)



Source: TEIR, time series analyzer (2013).

It can be seen in Figure 1 that, in comparison with the other counties, the proportion of active population is not outstanding in Győr-Moson-Sopron County. The proportion of working-age population had been stagnating according to the analysis of the time period preceding 2008. In this territorial delimitation this is a rather static index, which – due to the impacts of the crisis – is showing a decreasing trend. The data of labor force analysis on the previous years clarify that the already static index did not show outstanding values in the studied time period, not even in the years when AHM was established.⁴ From all this we can conclude for the year 2011, that in case of a Győr sized city (131,267 inhabitants) the recruitment of qualified manpower necessary for a large-scale factory extension might need significant additional labor force. This hypothesis has been proven. As a result of the 2011 extension the labor demand of AHM - mainly for qualified manpower- rocketed. This phenomenon has realized different impacts, whose effects on regional economy are questionable. In respect of manpower a temporary scarcity of experts was to be seen; from the company's point of view the attraction of far lying man power might lead to incidental expenses. In the region, the brain draining effect of AHM was becoming visible. Regarding this area, the wage level at AHM is rather high, thus it attracts manpower from smaller businesses. The proportion of the manpower coming from Germany has reached a level in the company that made their institutionalized integration necessary. These institutions (Audi School, Audi Academy) have a direct effect on the life of the employees coming from Germany. Since these operate as separate organs in the institutional system, mainly for the foreign employees, the question of complete integration's necessity and facilitating measures may rise. Several questions may rise regarding the integration of the management elite as well that may form parts of the local development measures.

⁴ Based on the partial results of actual researches

Logistic processes, suppliers

Logistics are operated in a separate center within AHM, taking responsibility for their own measures. The dominant fields are purchasing logistics and distribution logistics. Logistics is of primary importance, in case of many companies: it is a general activity. The following introduction into AHM's logistics is intending to present its severe set of requirements and impacts on suppliers. The logistic department is composed of three main parts as follows:

- Engine logistics: program planning and materials requirements planning of different engines, pre-series logistics, CKD and OT logistics
- Vehicle logistics
- Business logistics: Transport logistics, Planning, Operative logistics.

Engine logistics stands for the logistic processes facilitating engine production. CKD-Logistics serves overseas clients, and -as it is shown by its denomination (Completely Knocked Down)- it manages the transport of engines ordered in fully disassembled form. The OT (Originalteile, i.e. Original Parts) Logistics operates the transport of spare parts of former models. The Pre-Series Logistics' task is to provide services in line with the customers' demands before a product's or component's mass production is started. The divisions Program Planning and Engine Materials Requirements Planning are so closely interrelated that they merged at the end of 2007 to form the Engine Segment. Program planners assemble the production plan according to the customer's demands, while the materials requirements planners' duty is to order components and materials necessary for the manufacturing procedure and to ensure that parts are available throughout the production process. There are four divisions within Engine Logistics: R4 Otto engines, R4 Diesel engines, V6 engines and V8/10/12 engines (BGF 2007).

AHM is knowingly applying different stock optimization methods on strategic level, they are incorporated into the company's life. These methods are all present in the above logistic fields. Engine Logistics, as the oldest logistic field in the company's life, applies several stock optimization solutions in different terrains. The main results of stock reduction are displayed in Table 1.

Table 1 - Decreasing inventory in AHM

2006	The central management of AHM decides on the importance of inventory reduction. The goal is to achieve an inventory reduction of 50% in a project aiming to reduce inventory and optimize.
At the end of 2007	After achieving the gradually prescribed goals by 2005-2006 the annual average range of coverage has decreased ca by half. ⁵
After 2007	Following the closure of the project the company analyzed the factors, which added the most to the reduction. (ABC Analyze ⁶ , analysis of transport times, control of suppliers, harmonization of production demand with transport time, assigning packaging units according to production, overdelivery sanctions)
2008	Continuously applied, centrally controlled and supervised outlook forming logistic control, which regularly applies the tools of the first inventory reduction project.

Source: author's own construction based on web information and interviews (2013).

Impact of Audi's suppliers on local businesses

Figure 2 illustrates the logistics related structural operations: it is depicting transport activities between premises and suppliers. AHM sets different transport conditions for the single suppliers. Due to its position, as large company, it applies a well-elaborated system of conditions for freighters and suppliers.⁷ Classification of transport methods and correction of defects is continuous. Transport methods can be classified in three main groups:

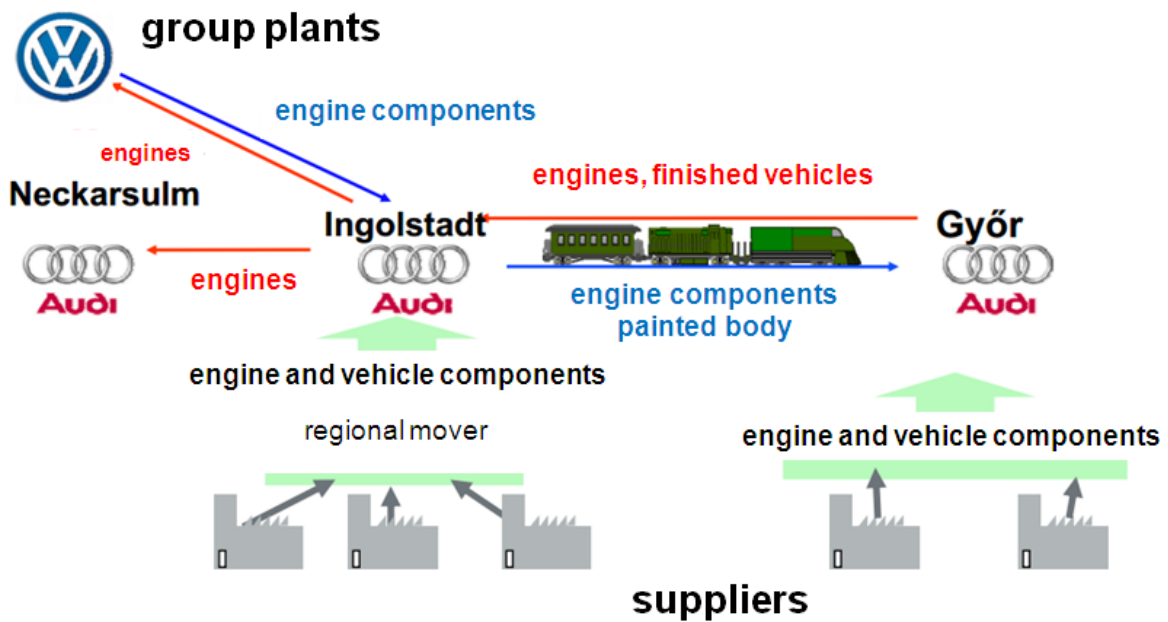
- **Direct transport:** road traffic, or in case of overseas suppliers, maritime transport, then the freight is forwarded from the port on the road.
- **Indirect transport:** the goods are collected and forwarded to the Ingolstadt based consolidation warehouse by the territorially competent freight organizer. From here, in the organization of AHM, the freight is moved by rail. Transport between Győr and Ingolstadt occurs based on a to-the-detail elaborated system and they apply mainly rail transportation. AHM has an own railway depot and good management system on the Győr railroad line. For environmentally conscious reasons, the first choice in this type of transport is the railroad. Beside this, in special cases road transport is chosen, whereas the exploitation of Pér airport, in the vicinity of Győr, is another potential option.
- **Round transport:** a road transport group established on basis of a framework contract concluded between Audi and its supplier, who may take advantage of the economies of scale if the trucks are loaded to the legal maximum.

⁵ In 2005 the annual average range of coverage was 6.34 working days in the field of Engine Materials Requirements Planning. This means that the annual average stock was sufficient for the production of 6.34 working days. At the start of the project the first goal was to reach 4.65 days by the 2006 inventory, and then this number kept on decreasing, at the end of 2007 the goal was 3.1 days. These goals were to reach gradually. For the first year a 20% decrease was prescribed, from which 17% was reached. The goal for the second year was a further 30%, which objective could only be achieved by the end of 2007.

⁶ The ABC analysis is an inventory categorization technique, dealing with the materials and parts purchased by the company. The aim of the analysis is to find the valuable parts and set up their ratio related to the total inventory. The ABC analysis applied at AHM uses the data available from the ERP system and classifies the components based on the product of unit price and demand.

⁷ E.g. the date of order – regardless of the type and length of transport- is the date of arrival at AHM's premises; the freighter and the supplier are bound to use this date in their calculations.

Figure 2 - Suppliers of AHM



Source: Horváth (2011).

The Logistics Department of AHM succeeded in decreasing inventory. In order to make production effective, stockpiling has to be adjusted to the actual production volume. To achieve this goal complex corporate government tools and set of rules are applied, which were all incorporated into the everyday life of the company. Infrastructural background is given for inventory optimizing transportation, which is adjusted to production; it can be substituted if necessary. Moreover, we need to note the composition of suppliers. The proportion of businesses of Hungarian ownership is only 4%. This shows that the 58% of the suppliers in German hands can effectively use the presented supplier methods and they effectively solved the problem of long distance by settling here. Although the number of local suppliers has grown, generally we speak about foreign controlled companies. The proportion of Hungarian owned suppliers is relatively low, on Tier3 level. In order to make conclusions for the economic policy this index needs to be observed on the long-run. Besides it is worth considering the length of the company-supplier relations. Furthermore, we need to see that the supplier network of a company may have a certain innovational impact on the local business environment. In a dynamic industrial milieu there is a bigger chance for new business to be organized and spin-off companies to be established.

Economy developping of the local government

The major goal in Győr is to establish and maintain a strong, diversified and competitive economy. The AHM's presence is dominant in the city; however, it is the city's duty to provide the appropriate business milieu. Among these tasks the city needs to ensure accessibility and the appropriate working conditions for the companies. The Győr Industrial Park has been providing quality infrastructure since 1992 both for major investments and small businesses. The extensive area, which has been assigned consciously, in the strategic proximity of the main roads, is offering such a business environment, which provides the safety of stabile operation and the opportunity of further development for the companies. The Győri Nemzetközi Ipari Park Kft. (International Industrial Park Győr Ltd) - owned by the

local government of Győr, City of with county rights - has been providing the following services for a long time:

- Direct connection to the highway and railroads
- Systematization of ownerships/Settling ownership questions
- Measuring soil contamination
- Providing utilities
- Administration at the Local Government
- Assistance to the settlement of new companies, support activities after the settlement.

The presence of AHM is reflected also by the composition of the industrial activities. The Industrial Park Győr has assisted recently in the settlement of several automotive industry related businesses. Besides this, the Industrial Park is open for other industries as well. It is a major focus on this territory of 191 hectares, which is being unceasingly developed by the city, to create an environment attractive for SMEs too in order to enhance the development of the automotive industry's supplier network. Regarding taxation the city of Győr decreased the rate of local business tax by 20% from January 2014 (GYMJV 2013). As we speak about the dominant company of the industrial district, it is needless to say that the major part of the city's local business tax revenues was paid by AHM. On local taxation we can say that up until December 2013 the city offered an opportunity for the Győr based companies: they could dispose over a certain percentage of their local business taxes if they form a reserve a given percentage of their costs for the same purpose. AHM had been using this option till December 2013, thus the company could dispose over 4% of the taxes paid in a manner that it could decide on which cultural, sporting or artistic activities were to be supported from this 4%. In return the AHM undertook the obligation to expend an additional amount – the equivalent of the 4%- on the chosen activity in form of CSR.

CSR activity

The phenomenon described above granted certain latitude to companies. This should be acknowledged as a positive impact regarding the supported activities, since this approach might contribute - on some level- to the calculability and transparency of subsidies.

- Sports: Besides the fact that the company supports sporting events on a regular basis, since 2006 it has been the eponymous main sponsor of the woman's team of the Győri ETO Handball Club and the Győr International U16 Football Tournament. Since 2013 it has been the main sponsor of Győri ETO Football Club. In 2013 the company became a Gold level supporter of the Hungarian Olympic Committee.
- Culture: Beyond funding cultural events on a regular basis, since 2002 the company is the main supporter of performers at the annual summer's end concert in Győr. Also since 2002, AHM is the main supporter of the world-renown Győri Balett.
- AHM and education.

AHM recognized that the cooperation with the University is of primary importance to achieve the necessary supply of qualified labor force; based on this it might lead both to the increase of the value of the human capital in the Győr region and at AHM. The annual report of 2011 puts it this way: "The key to future is education" (Jahresbericht 2011). At the Technical Faculty of the Győr based Széchenyi István University there are four Audi Hungaria Departments: Department of Materials Science & Engineering, Department of Internal Combustion Engines, Department of Automobile Production technology and from 2013 the Department of Automobile Development. These four departments form the Audi Hungaria

Automotive Engineering Department Group, strengthening Audi's presence at the Széchenyi University (AHM 2013). In September 2010 was opened the Audi Hungária School, where Hungarian pupils study German in a bilingual educational program from the first year on, while the German students follow the German curriculum, so that the reintegration into the German educational system after their homecoming will not be a problem. The question of integration is of crucial importance in this institution. The research activity -formed on the basis of the cooperation between Audi and the Széchenyi István University, Győr dating back to 2008- is directly sponsored by AHM. Achievements have resulted from this cooperation that might be valuable even in the Ingolstadt center. This proves that the Győr based R&D is a useful outcome of the cooperation (SZE 2013). We need to note that this R&D is not a part of the company's development policy. In local context, however, we can say that the level of direct sponsorship offered by AHM is rather high. Mobilis is a scientific playhouse focusing mainly on automotive industry and traffic, where the goal of the interactive games and extraordinary scientific shows is to make natural and technical sciences popular with the visitors; based on these impulses the young generations might become more susceptible for these domains and it might influence their career choices as well (Mobilis 2013).

Summary

The study gave a descriptive overview on the environment and time period, in which the global corporation was inserted. The institutionalized impacts were described. The analyze of AHM presented the most important milestones of the settlement that indicated that the company – settled in 1993- sees future prospects in the city of Győr up to the present day. This is supported by the fact that in 2011 a large scale extension was carried out and the value of the city was highlighted in the communications materials of the company. Impacts on the local labor force, local wage costs, integration process, businesses, SME sector, taxation and education are the most critical factors, which need the special attention of the local economic development actors. This is necessary because the company is undoubtedly the protagonist of the creation of the industrial district. These phenomena might trigger special and questionable impacts on regional economy. The city has been continuously monitoring these impacts. This is proven by the willingness to cooperate, especially in the maintenance and development of the infrastructure and the achievement of common goals related to R&D.

Bibliography

- AHM (2004) *Környezetvédelmi kézikönyv*. AHM, Győr. Available at http://www.audia3limousine.hu/?utm_campaign=FB_POR034_2013_Audi_A3_Limousine_0923_1020&utm_source=prcikk&utm_medium=%2Ffn24%2FPRcikk%2Fprcikk (accessed date November 22, 2013).
- BGF (2007) *Az Audi Hungária Motor Kft. Magyarországon*. Budapesti Gazdasági Főiskola, Szakdolgozat, Budapest, 2007, 37.p.
- Camagni R. (2009) Territorial Capital and regional development. *Handbook of regional growth and development theories*. Edward Elgar, Northampton, 124.p.
- Horváth G. (2011) *Handout-Egy motorgyár létesítése*. Széchenyi István Egyetem, Győr, 2011. Available at http://www.sze.hu/~kardos/AUDI2011/Handout%20-%20Egy%20motorgy%20-%20E9tes%20-%20SZE_20110920.pdf (accessed date November 22, 2013).
- GYMJVÖ (Győr Megyei Jogú Város Önkormányzata) (2008) *Győr Megyei Jogú Város Középtávú Integrált Városfejlesztési Stratégiája*. Győr, 2008, 19.p.
- Jahresbericht (2011) *Audi Hungária Motor Kft. 2011 éves jelentése*. Győr, 2012. 42.p.
- GYMJVÖ (Győr Megyei Jogú Város Önkormányzata) (2013) *Előterjesztés, Javaslat a helyi iparűzési adóról szóló 34/2010. (XI. 26.) GYMJVÖ rendelet módosítására, valamint 8/2000. (III. 10.) Ök. rendelet hatályon kívül helyezésére*. 2013, Győr.
- Lengyel I. (2010) *Regionális gazdaságfejlesztés, Versenyképesség, klaszterek és alulról szerveződő stratégiák*. Akadémiai Kiadó, Budapest, 2010. 126-130.p.
- Mobilis. Available at <http://mobilis.gyor.hu/mobilisrol/a-kozpontro> (accessed date November 22, 2013).
- NSAI (National Standards Authority of Ireland), (2012) *Main elements of ISO 9001, 2012*. Available at <http://www.nsai.ie/NSAI/files/db/db3c0675-bb94-4608-a1cd-9f458699561e.pdf> (accessed date November 22, 2013).
- Porter M. E. (1985) *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York, NY: The Free Press.
- Széchenyi István Egyetem (2013) *webpage*. Available at <http://uni.sze.hu/dobog-a-szengine-gyori-egyetemistak-versenymotort-epitettek> (accessed date November 22, 2013).
- TEIR, VÁTI, (2013) *Idősoros elemző*. Available at <https://www.teir.hu/idosor/index.html> (accessed date November 22, 2013).