

Heavy Industry in Transylvania 1880–1914

State and Private Investments

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Călan (Kalán, Klandorf),
Iron Plant, postcard, 1900

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IF WE take a look at the latest data about the rate of industrial growth of the states from the so-called periphery, the two halves of the Austro-Hungarian Empire had the same numbers, 5.0 per cent between 1870 and 1896, and 3.8 per cent between 1896 and 1913.¹ However, the rate of industrialization was much higher in the Austrian provinces than in the Kingdom of Hungary. In the eastern provinces of the Habsburg Monarchy, industrialization and modernization began during the second half of the 19th century. Within its border regions this process was even further delayed until the end of the 19th century and the beginning of the 20th century. According to macro-economic indicators, Transylvania, the easternmost statistical region of the Kingdom of Hungary, began its slow but still measurable development late after the Austro-Hungarian Compromise, between 1900 and 1910. Based on the development of one of the most spectacular indicators, per capita GDP, we can state that this tendency started to accelerate during the period between 1900 and 1910.²

The greatest changes within the region's economy and society, like in other regions of Europe, occurred with the appearance of large industrial plants. Industrialization primarily brought radical changes to the western European societies, but it also left its mark to some extent on the continent's eastern part. Significant changes also occurred in the lands of the Kingdom of Hungary. If we look only at the increase in the number of people working in industrial sectors, we see that in 1869 only 12% were employed in such sectors, but by 1910 this figure reached 24%. It also included artisans and craftsmen whose numbers were always high. If we analyze the number of people employed strictly in the industrial field during the period regarded as the height of the Hungarian "Industrial Revolution," which is 1890–1910, we find a smaller increase, from 12% to 16%, as a percentage of the country's population.³

Transylvania, with its mountains covered by thick pinewood and beech forests, with rich coal, iron ore, gold, and silver deposits, was predestined to become an industrialized region of the Austro-Hungarian Monarchy. The unfavorable conditions, like the large distances from the markets or the absence of railways that should have linked Transylvania to the economy of the monarchy and Europe, delayed the development of this sector.

The aim of our study is to present the evolution of the heavy industry, more precisely that of iron and coal mining and of ferrous metallurgy in Transylvania. The focus is on the relevant companies, which were located in Hunyad (Hunedoara) County and which could be compared to those from the central and western parts of Europe.

AFTER 1873, the Hungarian governments tried to stimulate the economy of the country through the development of the rail network and a competitive industrial sector. These measures were supported by legal initiatives starting with the 1880s. The laws XLIV of 1881, XXIII of 1888, XLIX of 1899, and III of 1907 granted tax exemptions for 15 years to all new or expanding plants, assigned free lots for the construction of new factories, provided subsidies and state funds for the purchase of machines and tools, as well as preferential railway fares, and finally allowed the ministry to buy shares for the state in the newly established or expanded companies. Alongside these measures, Law XXXI of 1880 and Law IV of 1888 facilitated the construction of local railway networks.⁴ In the heydays of the industrial development program (1900–1914), 47 million Austro-Hungarian kronas were paid as state subsidies, but this amount of money represented only 5.9% of the capital invested in joint-stock companies. During this period, the shareholder capital in the kingdom's industry increased by 800 million Austro-Hungarian kronas.⁵



Hunedoara (Vajdahunyad,
Eisenmarkt) State Iron Plant 1

The establishment of the Hungarian State Railway Company (*Magyar Királyi Államvasutak* or MÁV) was another measure which undoubtedly had a huge impact on the development of the heavy industry. The role of the company was to establish and operate a state-owned, profitable, common railway system. The target was reached under state secretary, then minister, Gábor Baross.⁶ At the end of the period, 90 per cent of the country's railway tracks were managed by the state company. From the very beginning it was a profitable enterprise. The success was based on two elements, the affordable zone-tariffs and the constantly expanding local railways. Profits grew, to the point where at least 200 km of railway tracks were inaugurated every year.⁷ Apart from two temporary slumps in the construction work (after the railway boom in the early 1870s and after the turn of the century), there was no significant slowdown in this sector.⁸

The construction of railways increased the demand for railway equipment, as well as for metallurgical products and coal. Because of the low national production, a huge quantity of materials was imported, so the prices were high. As a result, the Hungarian government began to invest in state-owned iron mills or built new furnaces and rolling mills, and opened coal mines. At the beginning, the state owned some mills in Transylvania at Govăjdia (Govasdia, Sensehammer), Cugir (Kudzsir, Kudschir) and Sibîşel (Kissebes, Sebeschel), in Maramureş at Pădureni, in Upper Hungary (today Slovakia) at Tisovec (Tiszolc, Theisscholz), Hronec (Kisgaram), L'ubietova (Libethen), Pojnik (Ponik, Poniky), and at Diósgyőr (today Hungary). These plants were geographically distributed across the whole country. Before the railways, because of the huge distances, there was no chance to integrate the different manufacturing lines. A slow process of investments and rationalization began after 1870.

From 1881 the state-owned iron mills were administrated by Antal (Anton) Kerpely, state secretary in the Ministry of Finance. A new era began. He reorganized the system and initiated the concentration of pig iron production at Hunedoara and the subsequent manufacturing at Diósgyőr and Podbrezová. In 1912 the plants at Diósgyőr, Hunedoara (Vajdahunyad, Eisenmarkt), Cugir, Podbrezová, Tisovec and the machine-building and railway cart plant of the Hungarian State Railway Company in Budapest were still functioning. The latter had been established in 1870.⁹ Parallel to them, state-run coal mines operated in Transylvania in the Jiu Valley—Petroșani (Petrozsény, Petroschen), in the Banat region at Bozovici, near Diósgyőr, in Komló, in Disznóshorvát and Nagybátony (today northern Hungary), and at Vrđnik (today Serbia).¹⁰

In Transylvania the state-owned iron mills and coal mines were concentrated in the southwestern part of the province, in Hunedoara County. The good quality iron ore in the nearby mountains, around the village of Ghelari, and the large beech forests on the state domains had favored the establishment of forges since the 18th century.¹¹ The construction of a new, modern plant started to be prepared in 1881 and the work began in August 1882. First, the existing installations were moved from the old iron plant at Govăjdia, then two furnaces (charcoal fired) were raised, with a third one planned; warehouses and a funicular railway were added, without forgetting a 16 km-long normal gauge railway from Simeria (Piski, Fischdorf) to Hunedoara. 1884 was the first year of production, which saw the construction of a Bessemer converter. The third furnace began to be built in 1889, becoming operational in July 1890. A Siemens-Martin furnace was built in 1891. In the same year, because of the lack of charcoal, the furnaces used charcoal mixed with coke brought in from Ostrau (Austrian Silesia), Zabrze (Germany) and Karwin (Austrian Silesia). Between 1883 and 1892, an amount of 612,202.78 florins (guldens) was invested to move the installations of the iron plant from Govăjdia to Hunedoara and erect the new state iron plant.¹² The extension and modernization of the existing cableway system, which linked the mines with the industrial railway lines and had a total length of 54 km at the end of the works, cost 643,696 florins (guldens).¹³

In 1894 the fourth furnace, which used only coke and roasting kilns, was erected. Lighting was provided by the electric power plant. In 1895 the fourth furnace became operational and the tempered steel production began.¹⁴

In 1899, construction work began on a narrow-gauge industrial railway with a total length of 16 km, which linked the three main production units of Hunedoara, Govăjdia and Ghelari.¹⁵ The fifth furnace was built between 1901 and 1902.¹⁶ Beginning with 1901, the first three furnaces were rebuilt to meet the modern production requirements. Because of the large beech forests in the area, and given the huge distances from the big coke-producing plants of Germany

and Austrian Silesia, the furnaces more often than not used charcoal.¹⁷ Between 1900 and 1913 the state invested 3,066,484 Austro-Hungarian kronen in the mines, transport infrastructure (normal and narrow-gauge railway lines, electrified mine railways) and in the iron plant of Hunedoara and Govăjdia.¹⁸

The continuous investments resulted in a modern, competitive iron mill that supplied the state-run forges and rolling mills. The Hunedoara plant was profitable from the beginning of its activity. In 1893 the production cost of a quintal of pig iron was 2,80 florins (guldens) and the price on the free market stood at 3,55 (a profit of 22%).

The number of employees grew from 533 (233 miners and 300 furnace workers) in 1888 to 2,900 in 1912.¹⁹ For the miners in Ghelari, the company built houses, a hospital, a water pipe, steam baths, and a school, and for the workers in Hunedoara houses, two steam baths, and founded a trade school. A high number of skilled workers and technicians moved from other state-run plants, coming mostly from northern Hungary (today Slovakia). The migration of the skilled workforce was something common in that period. Hunedoara gradually became a town and one of the most important industrial centers of the Kingdom of Hungary. It developed into an interesting mixture between an industrial town and a village with a medieval castle (of the Hunyadi/Corvin family).

The Călan Mining and Furnace Company

THE BRAȘOV Mining and Furnace Company (*Kronstädter Bergbau und Hütten-Actien-Verein/Brassói Bányá- és Kohó- Részvénytársaság*), the biggest in the heavy industry field in Transylvania, began the construction of two furnaces in Călan (Kalán, Klandorf), just 13,9 km (by road) from Hunedoara, in 1868. The construction work was completed in 1870, respectively in 1875. In 1898 the plant was transferred to the Călan Mining and Furnace Company (*Kaláni Bányá- és Kohómű Részvénytársaság/Kalamer Bergbau- und Hütten-Actien-Gesellschaft*), founded by German and Hungarian investors. The new company was established with the help of the Wiener Bankverein and the Hungarian Industrial and Commercial Bank.²⁰ Half of the shares were bought by the Bank for Mining and Industry (*Bank für Bergbau und Industrie*) of Berlin, the other half by investors from Vienna and Budapest.²¹ In June 1901 most of the shares were taken by the German *Depositbank*. In 1906 the society was bought up by the Rimamurány-Salgótarján Forge Company,²² which was the biggest metallurgical manufacturer in Hungary.

The Călan Mining and Furnace Company took over the iron ore mines in Rușchița, Rusca Montană, and Teliuc (Telek, Eisenhammer), the furnaces in

Rușchița, Rusca Montană (in the neighboring Krassó-Szörény/Caraș-Severin County) and Călan, and the Oțelu Roșu (Nándorhegy, Ferdinandsberg) (in Caraș-Severin County) rolling mill of the Brașov Company. The new owners continued to invest in modern technologies. In 1899 the company began the bed-mining of new iron ore deposits at Plosca, Hunedoara County. They built a railway line between the mines and the furnaces at Călan and modernized the existing one between the furnaces of Călan and the iron ore mines at Teliuc, and had 1496 employees in the mines and plants of the company.²³

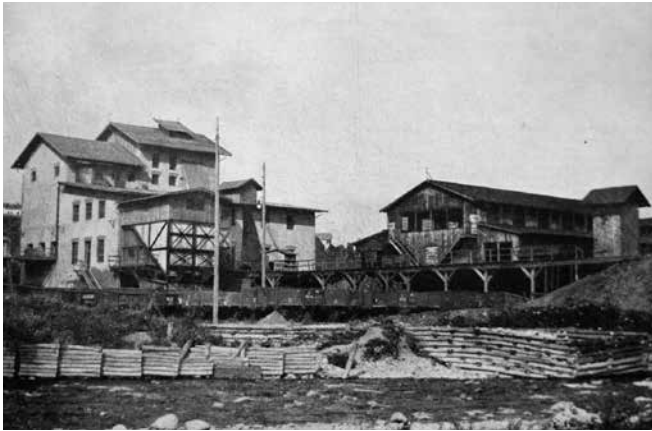
After a slump on the metallurgical products market at the beginning of the 20th century, the reorganization of production and the reconstruction of one of the two furnaces in Călan in 1907 resulted in a recovery and increase in production.²⁴ The annual pig iron production rose from 9,771.4 tons in 1901 to 24,178.5 tons in 1913.²⁵ The company's single furnace on coke supplied the two open hearth furnaces, and the company modernized the rolling mills in Oțelu Roșu. This was partly due to the Caransebeș (Karánsebes, Karansebesch)–Hațeg (Hátszeg, Hötzing) railway line being finished in autumn 1908, which linked the Călan furnace with the plants in Oțelu Roșu.²⁶

The relatively cheap coke produced in the Jiu Valley was also important for the competitiveness of the business. The coke made from bituminous coal was mixed with coke from anthracite imported from Zabrze (then the German Empire) and Karwin (then Austrian Silesia), which made it possible to decrease the production costs.²⁷ To assure the necessary amount for the functioning of the furnaces, between 1899 and 1900 the company bought 270,000 tons of iron ore from the mines which belonged to the state iron plants of Hunedoara.²⁸

The society had the fourth largest metallurgical complex in the Hungarian part of the monarchy, coming after the Rimamurány-Salgótarján Forge Company, the Hungarian State Iron Plants, and the Austrian State Railway Company (or STEG).²⁹ The Călan Mining and Furnace Company was a profitable business, except for the year 1903.³⁰

Coal Mining

THE JIU Valley is situated in the southern part of Transylvania, in Hunedoara County. This micro-region includes two intermountain valleys in the Southern Carpathians and its 14 communities formed a single administrative territorial unit. Due to its rich deposits of good quality, including even coking brown coal, the importance of this area increased in time. Large-scale mining began right after the first railway track (Simeria–Petroșani) was put into operation in 1870.



Lupeni (Lupény, Schylwolsbach) coal washery and preparation plant

The real industrial boom began in the 1880s, when coal mining gained momentum in this region.³¹ State-run mines and private mining companies were founded in the area. Immediately after the completion of the Petroșani–Simeria sector of the First Railroad Company in Transylvania, the Brașov Mining and Furnace Company, owned by Austrian investors, began its mining activities in the valley. In 1891 investors from Vienna and Lyon founded the Uricani-Jiu Valley Hungarian Coal Mining Company (*Urikány-Zsilvölgyi Magyar Kőszénbánya Részvénytársaság/Urikány-Zsilthaler ungarische Kohlen-Bergbwerks-Actiengesellschaft*). In the early 20th century this company became the third largest producer of bituminous coal and brown coal in the Hungarian part of the dual state. After the bankruptcy of the Brașov Mining and Furnace Company, on 1 January 1895 the coal mines in Petroșani were sold to the Coal Mining Company in Salgótarján (*Salgótarjáni Kőszénbánya Részvénytársulat/Salgótarjáner Kohlen-Bergbau Gesellschaft*), held by investors from Budapest and Vienna.³²

Between 1880 and 1914, four major companies operated in the region. The largest one was the Coal Mining Company in Salgótarján, the second the Uricani-Jiu Valley Hungarian Coal Mining Company, the third the Royal Hungarian Coal and Graphite Mining Company (*Magyar Király Szén- és Grafitbánya/Königliche ungarische Braunkohlen- und Grafit-Bergbau*), and the fourth the Upper Jiu Valley Coal Mining Company (*Felső Zsilvölgyi Kőszénbánya Társulat/Ober-Zsilthaler Steinkohlen-Bergbau-Gewerkschaft*). The first two were companies whose annual production exceeded 1 and 0.5 million tons, while the other two extracted only 0.1–0.2 and under 0.1 million tons.³³ Most of the shareholders in the Salgótarján Company were big investors from Vienna and Budapest, while the Uricani-Jiu Valley Company belonged to a Franco-Austrian group. The Upper Jiu Valley Company's owners were a group interested in the Salgótarján



Terézia pit, Vulcan
(Zsilyvajdejvulkán, Vulkan),
1900

Company.³⁴ As a result of consecutive investments, the Jiu Valley became the most important mining area in the Hungarian part of the monarchy. Despite unfavorable climatic and geographic conditions, the area had some advantages. For example, in 1870 a rail line linked it to the main Braşov–Arad–Budapest railroad. It also enjoyed convenient transportation facilities. The quality of its bituminous coal was superior to that extracted from the other coal fields. In 1900 the calorific value of the bituminous coal extracted in Petroşani and Lupeni (Lupény, Schylwolfsbach) neared or even equaled that of the anthracite coal in Doman (near Reşiţa).³⁵ That's why both state and private companies preferred it to other types of brown coal. Although the price of this bituminous coal had always been higher, even by 30%, than the one extracted from other regions, the demand remained constant. The coal production of the valley grew from half a million tons to 2.5 million between 1880 and 1913.³⁶

With the development of the coal mining companies in the area, in 1913 the Jiu Valley became the largest brown and bituminous coal-producing field of the Hungarian part of the monarchy (25%, with 2,229,885 tones).³⁷ Most of the coal used by the State Railway Company was ordered from the Jiu Valley companies. In 1912, the annual production of the subsidiary from the Jiu Valley of the Salgótarjáni Coal Mining Company was higher than that of the mother establishments around Salgótarján (1,156,800 tons/51–54%).³⁸

In addition to the exploitation of bituminous coal, investors very soon began exploring ways in which the coal could be processed into derived products that were increasingly sought-after on the national market. The proximity of an iron and steel industrial plant and the need to provide coke for the furnace in Călan prompted the owners of the Uricani-Jiu Valley Coal Mining Company to establish a coke plant in Lupeni. The Uricani-Jiu Valley Coke Plant PLC was

founded in 1900. Amongst the shareholders we find a German company, the *Oberschlesische Kokswerke und chemische Fabriken-Actien Gesellschaft* with its headquarters in Berlin. Coke production in the valley began in 1901.³⁹ The main client was the nearby furnace of the Călan Mining and Blast Furnace Company (*Kaláni Bányá- és Kohómű Rt/Kalaner Bergbau und Hütten-Aktien Verein*). In 1906, after an accident, the shareholders of the German company withdrew. Before the reconstruction works began, the investors in the Uricani-Jiu Valley Coal Mining Company, interested in coke production, bought the coke plant with the intention of integrating it into their company. In 1908 the new coke plant was completed. In 1913 the plant was supplemented with a benzol factory. In 1913 the production (47,227.4 tons) amounted to 29% of the coke obtained at national level.⁴⁰

The lack of skilled and unskilled workforce was so high that the mining companies were forced to bring in workers from other parts of the Austro-Hungarian Monarchy. Of the eight large coalfields in the Kingdom of Hungary, the one in the Jiu Valley had the highest number of colonized colliers and workers. In 1911 only 853 of the 11,912 workers were natives of one of the 14 localities in the valley. Thus, 93% of the employees were brought in from outside the region.⁴¹ Some of the immigrants were skilled workers from the western part of the monarchy (Bohemia, Moravia, Styria, Lower Austria), or from Germany and Italy.⁴² The phenomenon is well documented by historiography. At the beginning of the 19th century, skilled workers and entrepreneurs from Great Britain and France came to the western part of the monarchy.⁴³ Due to this large number of immigrants the number of mining company employees tripled in the period 1890–1910. The number of inhabitants of the valley rose from 12,000 to over 50,000.⁴⁴

As a result, a multi-ethnic and multi-confessional community emerged during these decades. The mining companies (both state and private) were forced to establish worker colonies consisting of houses with floor plans that had already been used in Central and Western Europe. The three largest companies had already built a total of 2,450 residential units by 1903.⁴⁵ The companies also built drinking water networks, electric power plants, founded hospitals, schools and food storehouses. The region became an industrial landscape in a relatively short time.

BEFORE WORLD War I, this region (Hunedoara County), together with the Highland Banat (Caraș-Severin County), generated 41 per cent of the mining and ferrous metallurgical products and 40 per cent of the wood products of the Hungarian part of the monarchy.⁴⁶ Despite their geographical location (at the periphery of the country), these two counties, with

big iron ore and bituminous coal and anthracite mines, iron mills and machine factories, and with 19,543 and respectively 16,112 industrial workers, became one of the most important industrial regions of the Kingdom of Hungary.⁴⁷ □

Notes

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Abstract

Heavy Industry in Transylvania 1880–1914: State and Private Investments

After the Austro-Hungarian Compromise of 1867, one of the priorities of the Hungarian government was the creation of a railway network that would facilitate the economic development of the country. The boom in railway constructions and the general demand for iron products in the economy stimulated the investments in the metallurgic industry. Transylvania, the easternmost statistical region of the Kingdom of Hungary, was one of the richest lands in iron ore and coal. The state iron ore mines and furnaces around Hunedoara and the private company at Călan (Kalán, Klandorf) became the most important actors in the field. The state investments in Hunedoara and the German (later Viennese) capital inflow to Călan increased the production capacities and the quality of the products. The need for coal of the developing railway network encouraged coalmining. In Transylvania, the 1880s saw the beginning of large-scale coalmining in the Jiu Valley. Alongside the State Coal Mining Company, two large companies and a smaller private business were interested in the region. The French, and the Viennese capital in partnership with the big investors from Budapest, brought about the most important industrial developments in the southwestern part of Transylvania. Apart from coal extraction, they were interested in the processing of brown coal. The Uricani-Jiu Valley Company (with French and Austrian capital) also built coke ovens and a benzene distillery.

Keywords

Transylvania, 19th century, industrialization, heavy industry, state investments, private capital