The Oil Industry in the Second Republic. Light and Shadow

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Abstract: This text is an attempt to outline the main challenges facing the Polish oil industry in the interwar period. It discusses the achievements of the second half of the 19th century and the first decades of the following century. It discusses the process of reconstruction and development of the oil industry, primarily in the field of mining and processing of extracted raw material. It reveals the most important issues, related to the domestic situation, foreign markets, the economic crisis, and capital challenges. The article also signals attempts to improve and develop the oil industry, including those based on exploration of new fields and cooperation with the automotive industry.

Keywords: Second Republic, oil industry, refineries, automobiles

> *"Oil occupies a prominent position in the social economy, for its distillates are indispensable articles in every home.Oil provides an opportunity for the existence and development of mineral and chemical oil factories, contributes to the emergence of ancillary industries, such as pipe factories, wire rope factories, belt factories, etc.Oil is of momentous importance in the inventions and experiments of our century. Diesel engines, automobiles, aeroplanes, these harbingers of new times, today make possible ventures formerly considered impossible. These gains allow active participation in the depths of the sea and the skies of the world and are therefore a crucial factor in the defence of the state in case of the turmoil of war.Drilling for oil requires large inputs" (Loewenhertz 1937: 3).*

At the beginning of the 20th century, oil extraction and processing were still new, but very vigorously growing strategic industries. This importance resulted from the transportation revolution – the emergence of the automobile and aviation industries, but also the new propulsion of ships and warships, as well as diesel locomotives. Independent Poland boasted 19th-century research and discoveries that initiated global demand for lighting oil, as well as oil deposits in the Carpathian Mountains and Subcarpathia, considered at the time to be the richest in the world. However, the economic reality of the Second Republic – laboriously stitched together after a long period of statelessness – fell short of ambitions, as the fate of the oil industry clearly demonstrated.

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The symbolic date of the founding of the Polish, and the world's oil industry, is 1854, when the first oil company was formed in indigent, agricultural Galicia, and the world's first oil mine was established in Bóbrka. Oil, or more specifically, its most coveted product at the time – lighting kerosene – quickly captured markets, attracted the attention of big capital, and became a product in international trade.

The first years of the oil sector in Galicia were a period of formation as an independent industry and the growth in its importance. It was not free from crises of overproduction and economic fluctuations, caused by high drilling costs, the time-consuming nature of drilling work, and competition (mainly American). The leading role in the "oil rush" was played by human capital and new technologies – free-fall drilling cranes, initially manual and later powered by steam engines, mainly locomotives, pump cranes (nodding donkeys), and the Canadian drilling method (Franaszek 2009: 205-208). However, technical change in poorly industrialised Galicia was slow, and oil production did not keep pace with demand and production growth in other countries.

There was a marked improvement from the second half of the 1890s. The oil industry began to expand. “With the development of oil mining, Galicia was becoming [...] one of the leading countries in scientific and technological progress” (Franaszek 2022).New oil deposits were discovered in the Carpathian and Subcarpathian regions. Soon the Borysław basin was supplying 94% of Galicia's crude, and the oil industry was becoming a modern industry and an engine of economic development for the entire region. They began to invest in tanks, compressor stations, transport equipment (including pipelines), modern refineries (Glinnik Mariampolski, Jasło, Trzebinia, Limanova, Peczeniżyn). In 1912, a large oil refinery (*odbenzyniarnia*) was put into operation in Drohobycz.

In 1895, oil production was nearly 215,000 tonnes, in 1907 it exceeded 1 million tonnes, and in the record-breaking 1909 it exceeded 2 million tonnes, accounting for more than 5% of world production (*Polski*... 1932: 7). Galicia was among the largest global oil producers. From 1902, mining in Galicia met Austro-Hungarian demand.

As new fields were discovered and production increased, interest in the Galician oil industry grew among financiers, initially Austrian (Viennese) and Hungarian, then also British, American, German and French. The oil industry of Galicia became profitable, hence the wide influx of capital and the revived “Gründerzeit”. Of course, problems were not avoided. Increased oil supply with an underdeveloped refining industry resulted in overproduction and price volatility. The war years of 1914-1918 were a dead-end for the Galician oil industry, which was mobilised for war purposes. In August 1915, the Austrian authorities introduced the sequestration of oil and petroleum products and began plundering under military management. Entente companies were confiscated and placed under receivership. The retreating Russian army took oil installation equipment and facilities out of Galicia, causing severe losses in oil basins (more than 300 wells were destroyed).

In 1918-1919, Polish-Ukrainian battles took place in the oil-bearing area of Galicia. Not surprisingly, the industry required costly reconstruction, new equipment, expert personnel, and considerable capital.

The World War confirmed the importance of oil – as a strategic resource – which influenced the outcome of the conflict and determined the economic development of countries and nations[1]. Interest in oil from private capital and state policy increased. The goal of governments was their own sovereign oil industry. Oil and related matters became the axis of numerous conferences and political deals. There was a feverish search for new deposits around the world. The share of countries in world oil production changed.

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After 1918, the Polish oil industry had to reorganise and adapt to the new customs borders. The oil sector of the Republic saw a regrouping of ownership and capital engaged (Bielski 1939: 1). Lost markets were replaced by new ones – the recent Russian and German partitions.

The oil industry resumed production in late 1918 and early 1919. Despite the difficult political situation and border struggles, the exploitation of Galician land began; mainly by small companies representing small domestic capital. By 1919, nearly 400 companies were already extracting oil from more than 3,000 wells. Large foreign capital, which held ownership of most major industrial facilities, only began to activate after 1920. The French became interested in Polish oil, vigorously buying up companies previously owned by the partitioning powers (Franaszek 1986: 234). American, English, and Belgian investments soon followed. In 1930, the share capital of 119 oil companies in Poland amounted to more than PLN 314 million, of which PLN 242 million was foreign capital. The French dominated, with a 50.3% share of the Polish oil market. Not surprisingly, most of the oil companies' profits went abroad (Fryc 1930: 97; Kohl 1919: 5-14).

A hallmark of the economic life of the first years of the independent Republic was the relatively smooth reconstruction of industry "in an atmosphere of prosperity created by inflation" (Saryusz-Zaleski 1930: 271). The various industries supported and complemented each other. For example, the Polish Machine and Wagon Factories received most of their orders from the reactivated oil industry, which needed oil tankers. Commodities requiring a constant supply of liquid fuel, such as Titan's "kerosene" tractors (*Instrukcja*...), went on sale.

[1] In 1918, French Prime Minister Georges Clemenceau telegraphed to US President Thomas Woodrow Wilson: "one drop of gasoline is worth as much as one drop of blood". (Bielski Z., W sprawie przyszłości polskiego kopalnictwa naftowego, "Przegląd Górniczo-Hutniczy" 1939, n. 2 p. 3).

Numerous initiatives sprung up around the oil industry. However, the importance of research and new technologies was not always appreciated. Against this background, the refinery in Drohobycz – the State Oil Plant (later the State Mineral Oil Plant – "Polmin") – gained the rank of a model modern refinery. The state-owned Drohobycz refinery used the original gasoline rectification method, high-vacuum distillation of oils, and expanded the paraffin plant. They drew on the experience and analysis conducted at Lvov Polytechnic (Mierzecki 1999: 66-67). As a result, in the 1930s the capacity of "Polmin" was greater than all domestic oil production. Unfortunately, oil companies with foreign or domestic capital did not always focus on production. It was not uncommon for them to speculate in land or industrial facilities affected by the decline in the value of the Polish brand.

Despite the obstacles, the lively drilling movement in the mines continued. Wells, but also refineries were expanded and modernised. Pre-war business contacts were restored. Good prospects for the future, based on the post-war commodity deficit and attractive prices at home and abroad, and on top of the depreciation of the national currency (in a mild form at first), meant that with cheap labour and materials, the companies' profits looked impressive. Not surprisingly, the 1919-1923 period became a time of "high prosperity". Intensive drilling work was undertaken in the Mraźnica area of the Borysław basin, and later near Bytków. Despite this, production did not even come close to pre-war levels. The largest output – 831,000 tonnes – was recorded in 1919, which accounted for 1.12% of world production. The 800,000-tonne barrier was exceeded only once more, in 1925. (*Polski*... 1932: 7) Despite this, Poland still ranked third in Europe, with good profits from oil exports. About 60% of the Polish oil industry's production went abroad.

In August 1922, the Polish government abolished the sequestration of petroleum products, and provided customs protection for the oil industry, liberalised commodity prices, and introduced tariff concessions on drilling equipment and materials (Majewski 2009: 131). In 1925, influenced by the deteriorating situation, the sales tax on foreign sales was abolished and the high domestic prices maintained by the oil industry were accepted.

The successful development of Poland's oil industry, full of plans, collapsed in early 1924. One reason was the depression in international markets. As a result of the post-war economic reconversion and increased production, and as a result of the saturation of world markets, prices of petroleum products began to fall as early as 1923. In 1924, exports rom Poland became unprofitable. The big English and American corporations played their part, vying for a dominant place in the trade. Prices obtained by the Polish oil industry in 1924-1925 were lower than production costs. A temporary improvement in 1926 was brought by the English general strike, but already in 1927-1929, as a result of global overproduction, prices fell sharply again. From 1927, Poland's oil production declined to less than 0.5% of world production (*Polski*... 1932: 7). In the following decade it stabilised at about 0.5 million tonnes, four times less than in the record year of 1909. Meanwhile, Romanian competition was growing. While the Romanians reached 5% of global production and dominated the Central European region, Poland lost the Hungarian and Balkan markets and reduced its influence in the Austrian and Czech areas. In June 1925, the customs war with Germany began and Polish industry lost its largest customer after Czechoslovakia. The situation in foreign markets turned the spotlight on the domestic sector, intensifying competition and driving down prices.

The condition of Polish refineries was affected by the overestimation of the production capacity of oilfields and investments beyond what was possible and necessary. The 37 refineries and 27 gas plants competing against each other were only utilising 60% of oil processing capacity. The currency reform of 1924 showed the low value of companies' own capitals, caused a shortage of working capital and an expensive labour force, which affected the profitability of the oil industry.

The main threat to the industry was the deposits of raw material. New ones could not be discovered, and those long exploited were quickly exhausted. From 1926, Polish oil production declined regularly. At the same time, the cost of deeper and deeper drilling was rising. Their value was many times higher than in the United States, even despite a similar geological structure. The reasons were the overly fragmented land ownership structure, high administrative costs, and the existing oil laws (Fingerchut 1926). Not surprisingly, declining profits did not prompt foreign companies to invest in oil exploration. Big capital was withdrawing from investment loans and focusing on the funds needed to run enterprises, which did not guarantee technical and organisational upgrades.

On the other hand, competition was growing in strength. After Latin America, rich and exploitable oil deposits were discovered in Persia and Iraq, and in 1924 in Saudi Arabia. The hope for Poland may have been to step up its own efforts. To this end, the “Pionier” Joint Stock Company for the Exploration and Mining of Bituminous Minerals was established in January 1928. Field research, which was carried out over a large area – about 12,000 km^2 from the Romanian border to Tarnów – did not yield the expected results (instead, it resulted in patents and the development of drilling techniques).

As part of the recovery from the economic crisis, solutions were sought for the profitable operation of inefficient oil and gas wells. It was recognised that old, slowly wearing out wells and oil fields “require immeasurable care and diligence in handling and accuracy in observations”, which should reduce operating costs. Hence, following the American example, it is necessary to surround “with care [...] above-ground facilities, so towers, cranes, buildings, etc., for their poor condition require maintenance expenditures, which will fall off with their impeccable maintenance” (Bielski 1935: 3; Bielski 1931). Patterns overseas also emphasised the role of the professional worker.

As early as 1928, improving profitability depended on lowering the costs of oil production and processing (which also entailed high salaries for professional staff), mastering the domestic market and rationally organising exports (Bóbr 1928: 30). The desired results depended on the discovery of new oil areas, which proved impossible. Nevertheless, experts stressed that "the concern for oil will continue to absorb the industry and it will be the thread of the activities; the course of events in this field will be the exponent and history of the industry" (Fryc 1930: 118).

The sanation of the industry was seen in the reorganisation and monopolisation of Polish oil companies. Some companies entered into mergers, which were expected to yield administrative savings and a stronger financial base. In December 1924 a group of large oil companies established the Economic Union of Mineral Oil Refineries, headquartered in Warsaw. The syndicate was supposed to regulate prices in the domestic market. However, it failed to live up to expectations and was disbanded in late 1926. The industry's position further deteriorated. Under pressure from the government, another agreement was established on November 12, 1927 – the Oil Industry Syndicate, based in Lvov. An oil convention was worked out to regulate the purchase of oil, a carriage contract to set prices for kerosene, gasoline and gas oil, and an agreement to regulate the paraffin trade (Franaszek 2020: 314-317). In 1933, the Polish Oil Export was established, which forcibly united all refineries and oversaw the dumping of oil exports. Throughout the interwar period, the main customer for Polish petroleum products was Czechoslovakia (which received more than 40% of exports), followed by the Free City of Danzig.

The problem was the legislation, based on the Austrian General Mining Law of 1854 and the Oil Laws of 1907 and 1908. Unfortunately, the Polish industry did not live to see worthwhile legal solutions, although the Oil Office was established as early as 1919. It was still based on pre-1914 regulations. After a decade, another attempt was made to reorganise the industry and improve its structure. They sought independence from foreign influence (Dunikowski 1931: 75-88).

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An air of optimism for the oil industry came between 1927 and 1930, when domestic consumption of petroleum products increased. It is only a pity that it was more as a result of the spread of archaic kerosene lighting than the increase in the number of motor vehicles. In contrast, new patents and innovations emerged. Again, the number of employees in the oil industry increased, and in 1927 the number of workers exceeded 17,000. However, the mines and refineries were soon hit by the great global crisis. Expenditures on oil exploration declined, and crude production fell (the demand of an impoverished society decreased). Poland lost its third place in Europe in terms of oil production and fell behind Germany.

Recovery from the collapse was not easy. In 1936, crude oil production fell again; by 414 tanks (1 tank = 10 tonnes) compared to 1935. Crude processing suffered an even bigger bump (by 1,998 tanks). Refinery output was also lower by as much as 1,875 tanks. Although domestic consumption increased, with prices falling, this did not translate into higher profits for producers (Morawski 2016: 44). In 1930, petrol was sold in Poland for 58 million zlotys. In 1936, the takings for this product were only 28 million zlotys. No less telling is the comparison between 1932 and 1936. The difference in petrol sales between these years amounted to 150 tanks, and more than 11 million zlotys in takings. Exports were similarly disastrous, declining by more than 1,000 tanks in 1936 compared to 1935. In 1928, exports of 6,200 tanks of various petroleum products brought in 27 million zlotys. In 1936, 5,600 tanks were sold abroad for just over 8 million zlotys (Mikucki 1937: 2-3). No other Polish industry suffered such a drastic drop in revenue.

The decline in "the output of Polish kerosene mines" was analysed on an ongoing basis by experts, including from the Association of Polish Petroleum Engineers. The difficulties in investing and modernising in the "mining" and refining departments were highlighted. Attention was drawn to the lack of funds for geological surveys and pioneer drilling. A reduction in production in the Borysław basin was noted; only the mines of the Central Industrial District offered moderate optimism. According to Zygmunt Bielski of the Cracow Mining Academy, the industry's troubles were masked by the fact that declining manufacturing was outstripping internal demand for petroleum products anyway. However, it was feared that domestic consumption would exceed production. Bielski predicted that "probably as early as 1939 we will lack lighting kerosene, and in 1941 our own petrol for our cars". Besides, if motorisation gained momentum – as was desired – there would be problems with fuel for cars as early as 1940 (Bielski 1939: 1). Rescue was seen in intensive exploration of new oil fields; well-funded, rationally organised, with exploration wells as deep as 3,000 metres. In parallel with drilling work in various areas of the country, studies were conducted on the quality and size of oil deposits and their geological structure (Bielski 1937: 4; Nieniewski, Trześniowski 1933: 3; Świderski 1939: 3-11; Katz 1936: 3-37).

The signalled opportunity for the oil industry was linked to "automobilism"[2]. However, motorisation in Poland was clearly lagging behind the world and European leaders, and despite the fact that on it "the further development of the oil industry depended for the most part, it unfortunately did not get off the ground in 1935" (Mikucki 1936: 5; Majewski 2017). Modernising and upgrading the Polish Army was in the realm of planning. Hence, although there was an increase in fuel turnover, there was a decline in the position of the oil industry compared to the period before the Great War. In 1924, demand for petrol and gasoline (light gasoline made from natural gas) was 18,000 tonnes. Then, by 1927, it had increased to 40,000 tonnes per year. In turn, in 1930 (during the Great Depression) it reached almost 98,000, to then stabilise at 70-80,000 tonnes per year (Majewski 2009: 140; Majewski 2018: 504).

Unfortunately, the number of cars and trucks fell in the 1930s. At the beginning of the decade, there were 47,331 registered motor vehicles, and in 1936 only 25,734. Meanwhile, compared to Czechoslovakia, there should have been about 200,000

[2] In the 19th century, demand for this raw material was generated mainly by kerosene lamps. New global markets were launched by the automotive industry.

cars on Polish roads. Specialists from the Ministry of Communications gave the alarm that "the state of motorisation presents itself [...] catastrophically, as a result of which Poland was ranked among the last, being overtaken by smaller and poorer countries" (Korbal 2021: 81). Such an arrangement not only affected economic development and the oil industry, but also lowered the country's military potential. In 1937, there were 8 cars per 1,000 residents in Poland, compared to 12 in Romania, 60 in Portugal, 71 in Czechoslovakia, 93 in Finland, 197 in Ireland and as many as 242 in Belgium (Korbal 2021: 83). The State Road Fund, established in February 1931, which was intended to support the country's crisis-stricken automobiles, only exacerbated the problems, and the fiscal burden on fuel in Poland had a disastrous effect on automotive development. To expand the road network and improve its quality, a number of taxes and fees were introduced, including on the sale of fuel and lubricants and even on petrol station advertising. As a result, the price of fuel reached 0.70 gr per litre and was one of the highest in Europe. The petrol station infrastructure was poor. By the end of the 1920s, there were only 300 of them nationwide (the first one opened in 1924), and before the outbreak of war, the network of "petrol pumps" amounted to about 1,500 and was concentrated in large urban centres (Korbal 2022: 97-98)[3].

Nevertheless, progress in the development of "automobilism" was noticeable. The number of motor vehicles was expected to exceed 100,000 in 1940. Possible problems with petrol supply were to disappear with blends and artificial fuels. Not insignificant was the intensive highway construction that was undertaken in 1937. Henceforth, Poland went from being an exporter to an importer of asphalt. Not surprisingly, the Ministry of Industry and Trade focused on ensuring adequate quantities of liquid fuels and other petroleum products. There was a growing awareness of the strategic – military – importance of oil. The Polish Army's modernisation plans included the creation of fuel facilities for the army. Concrete action, however, was overdue. The transformation of the Polish Oil Export into the War Oil Union, which included all refineries and oil and gas mines, on September 2, 1939, did not allow the oil industry to be subordinated to the army's wartime needs.

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A decisive blow to the limping oil industry came with World War II. A symbolic example was the fate of "Polmin" in Drohobycz. First, on September 10, 1939, the refinery was the target of a German air raid. In June 1944, further damage to "Polmin" was caused by Allied, American bombs.

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