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ANDREEA DAHLQUIST

The Romanian Association for Baltic and Nordic Studies

Valahia University of Târgoviște

## Oil and Iron. Romania and Sweden from the Perspective of the Great Powers during the Second World War

Abstract

Oil and iron are two natural resources with an inestimable strategic value in the context of wartime economies. The Great Powers perceived oil and iron as essential raw materials in sustaining attritional warfare, while Romania and Sweden leveraged them as currencies in exchange for preserving their sovereignty and territorial integrity. Prior the outbreak of the Second World War, Germany and Great Britain launched their competition to monopolize the oil market in Romania and the iron market in Sweden. As a result, we can identify numerous similarities and differences in the strategies employed by these powers to secure control over the natural resources found in Romania and Sweden. Germany eventually won the battle of resources for a short period. Berlin persuaded Romania to join the Axis, which meant an almost unilateral oil export to the Reich, and convinced the Swedish authorities to approve the shipment of iron ore to Nazi-controlled territories. In 1944, the Allied forces targeted and destroyed Romanian oil refineries and significantly reduced Swedish iron ore exports to German harbors.

**Keywords:** attrition warfare, iron ore, oil refineries, Great Powers, Second World War

### Introduction

Oil and iron were two invaluable resources for the war planned by the Great Powers since the interwar period. *Iron ore* is a natural mineral forming the basis for iron and steel products. *Steel* is an alloy used, among others, to manufacture armaments and military equipment. *Crude oil*, or “black gold”, is the raw material used for obtaining various petroleum products such as fuel (gas oil, fuel oil, motor spirit and aviation spirit) necessary for operating ships, tanks, motorized vehicles, and aviation. The Great Powers perceived crude oil and iron ore as essential raw materials for supporting the war of attrition. At the same time, Romania and Sweden used these natural resources as currencies in exchange for preserving their independence and territorial integrity.



This case study research compares the competition between Germany and the United Kingdom to dominate the Romanian oil and Swedish iron markets. It focuses on the methods employed by the two powers to influence decision-makers in Romania and Sweden during the resource war. Using comparative methods<sup>1</sup> has allowed us to emphasize similarities and differences between the principal belligerents' strategies to capture available resources. Comparing both cases also gave us a better understanding of the events that marked political decisions concerning the national economy in Romania and Sweden during the Second World War. We needed to follow several steps to conduct a qualitative comparative research<sup>2</sup>. First, we needed to become familiar with the subject and understand the importance of oil and iron for Romanian and Swedish economies throughout the first decades of the XX century. Afterwards, we collected as much information as possible about the researched topic, consulting extensive bibliographic work. Once we gathered evidence about oil and mining industries, shipped quantities, trade development in Romania and Sweden, Germany's and United Kingdom's interests in Romanian and Swedish natural resources, and the Great Powers' strategies to seize and monopolize oil and iron supplies, we needed to select relevant and accurate information for our study. Next, we initiated a preliminary analysis to help us organize and synthesize the selected information. At this stage, we delved into patterns across the interwar period and the Second World War regarding Germany's and the United Kingdom's pursuit of natural resources crucial for the conflagration. By drawing analogies, we can also examine the similarities and differences in how major powers interacted with small countries such as Romania and Sweden to secure necessary raw materials.

Our objective in this case study is to analyze the impact of the mentioned powers on the politics of two small countries, without engaging in broad generalizations. However, our primary research question remains: In what ways were Germany and Great Britain's strategies to control Romanian oil and Swedish iron during the Second World War alike and different? To address this question, we relied on primary sources like archival documents and newspaper articles, as well as on secondary sources, including academic works by specialized historians<sup>3</sup>. We also used statistics to better emphasize the oil and iron quantities exported by Romania and Sweden to the Great Powers during the Second World War.

In Romania, the Prahova Valley was known as the most prosperous region for oil, with its extractions accounting for 80% of the country's total domestic crude oil production<sup>4</sup>. Meanwhile, in Sweden, the majority of iron ore exports came from mines in the province of Lapland, where the ore had an average iron concentration of about 60%<sup>5</sup>. It was understandable that the Great Powers were interested in the natural resources of Romania and Sweden. Romania had an extensive extraction and refining capacity, offering various goods,

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<sup>1</sup> M. Lange, *Comparative-Historical Methods*, London 2013, p. 19.

<sup>2</sup> L.W. Kreuger, W.L. Newman, *Social Work Research Methods with Research Navigator*, Boston 2006, pp. 428–430.

<sup>3</sup> See M. Fritz, P. Salmon, P. Marguerat, A. Hillgruber and G. Buzatu.

<sup>4</sup> I. Chiper, *Petrolul românesc în planurile de sabotaj ale Special Operations Executive (noiembrie 1940–ianuarie 1941)* [Romanian oil in the sabotage plans of the Special Operations Executive (November 1940–January 1941)], M. Cîrstea, S.L. Damian and L. Dindirică (coord.), Târgoviște 2014, p. 549.

<sup>5</sup> P. Salmon, *British Plans for Economic Warfare Against Germany 1937–1939: The Problem of Swedish Iron Ore*, "Journal of Contemporary History" 1981, vol. 16(1), p. 57.

and its transport routes provided accessibility<sup>6</sup>. On the other hand, Sweden's low-phosphorus iron ore made it ideal for producing high-quality steel necessary for the armaments industry, eliminating the need for an enrichment process<sup>7</sup>. An important detail overlooked by the British Industrial Intelligence Centre was that Swedish pig iron was suitable for two steelmaking processes. The Siemens-Martin process, or the acid open-hearth process, produced highly-quality steel crucial for navy and armament production. The Thomas process, used for refining pig iron, resulted in lower-quality steel used for ammunition and railway construction. German iron and steel industries used both processes, information which remained unknown to their rivals.

### **Great Powers' Competition for Romanian Oil and Swedish Iron during the Interwar Period**

The rivalry between Germany and Great Britain began in earnest during the interwar period. Following the end of the First World War, Berlin lost its position as a major investor in the Romanian oil industry, as British, French, and Belgian companies reaped the benefits that once belonged to Germany. The government in Berlin endeavored to regain a foothold in the Romanian oil market, but significant progress was only achieved after several years of effort. The situation began to improve when Germany and Romania concluded a commercial agreement on December 10, 1938. The document stipulated that Romania's oil deliveries had to reach 60–65 million marks in 1939<sup>8</sup>. Several months later, on March 23, 1939, the two nations signed a long-term economic treaty, marking a major victory for the Reich. This treaty established legal mechanisms that granted Germany access to the Romanian national economy, including its oil industry. France and Great Britain both reacted by signing trade agreements with Romania on March 31 and June 12, 1939, respectively. Both powers committed themselves to purchase petroleum products and provide credits for the Romanian army's ordnance. At a political-diplomatic level, the French and British governments guaranteed Romanian independence on April 13, 1939<sup>9</sup>. Bucharest accepted these formal assurances, despite doubts about the Western powers' ability to protect Romanian national territory<sup>10</sup>. The acceptance of the guarantees irritated Berlin but did not influence German investment in Romanian industry, which continued to

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<sup>6</sup> G. Preda, *Bătălia pentru petrolul românesc în anii celui de-al Doilea Război Mondial* [The War for the Romanian Oil during the Second World War], M. Cîrstea, S.L. Damian and L. Dindirică (coord.), Târgoviște 2014, pp. 544–545.

<sup>7</sup> M. Fritz, *Swedish Iron Ore and German Steel 1939–40*, "Scandinavian Economic History Review" 1973, vol. 21(2), p. 144.

<sup>8</sup> G. Preda, *German Foreign Policy towards the Romanian oil during 1938–1940*, "International Journal of Social Science and Humanity" 2013, vol. 3(3), p. 327, (online): DOI: 10.7763/IJSSH.2013.V3.255.

<sup>9</sup> According to the Franco-British guarantees, the Western powers pledged to "immediately provide assistance" if Romania's independence was threatened. Despite these promises, the Romanian minister of foreign affairs, Grigore Gafencu, considered that his country remained vulnerable. As a solution, he suggested that Romania adopt a neutral position in case of war's outbreak (See B. Schipor, *Politica Marii Britanii la frontiera de vest a Uniunii Sovietice, 1938–1941* [Great Britain's Policy on the Western Frontier of the Soviet Union, 1938–1941], Jassy 2007).

<sup>10</sup> *Ibidem*, p. 328.

grow significantly shortly after the conclusion of the economic treaty. As a result, the German capital staked into the Romanian oil industry reached 11.01%, surpassing French (3.1%), Italian (2.8%), British (2.5%) and American (1.61%) investments<sup>11</sup>.

Great Britain attempted to restrict Hitler's oil imports by imposing blockades, preventing the Germans from accessing their sea harbors, and compelling German authorities to purchase petroleum products from Romania. This approach narrowed Hitler's options for obtaining oil and created logistical challenges due to congestion on railways and the need for additional tankers for oil transportation between Romania and Germany. Additionally, natural factors played a significant role, as the freezing of the Danube River during winter made navigation impossible between December and March. These inconveniences led to a dramatic reduction of Romanian oil exports to Germany<sup>12</sup>.

Furthermore, British authorities decided to purchase significant quantities of oil in an attempt to force Germany to decrease its imports from four million tons to one million tons<sup>13</sup>. In the event that this strategy failed, Great Britain planned to destroy oil fields and refineries and disrupt traffic on the Danube. To avoid a diplomatic conflict with Romanian authorities, London applied pressure on decision-makers in Bucharest in order to gain support for the plan to dismantle the national oil industry, which would have cut off Germany's suppliers. Despite offering to cover all reparations, the British proposal was rejected by the Romanian government, leading to the failure of the project<sup>14</sup>.

Great Britain exhibited a similar level of hostility towards Sweden after the Minister of Foreign Affairs, Östen Undén, announced that Sweden would maintain a neutral stance and pursue balanced trade with all parties involved in a conflict<sup>15</sup>. Although not reaching a state of belligerence, London expressed dissatisfaction and issued threats to Sweden on multiple occasions. For instance, British diplomat Robert Hudson was suspected of issuing threats to Sweden during his visit to Helsinki. However, Hudson refuted these allegations in an interview with Swedish media<sup>16</sup>. Additionally, Frank Asthon-Gwatkin, a leader in the economic division of the Foreign Office, openly stated during his visit to Stockholm that: "I am afraid we will have to destroy your mines"<sup>17</sup>.

In a sensitive diplomatic scenario, Sweden demonstrated significant flexibility. In Stockholm, negotiations simultaneously commenced with Great Britain and Germany, both displaying keen interest in Sweden's iron ore reserves. Germany held an advantage over its counterparts by offering coal and coke, crucial resources for the Swedish economy. In contrast, Britain was unable to make similar commitments and, therefore, consented to allow Sweden to deliver the same quantity of iron to Germany as in 1937–1938, totaling 10 million tons<sup>18</sup>. The British authorities did not press the matter, likely with the intention to halt the shipment of iron ore in the Norwegian port of Narvik.

<sup>11</sup> G. Buzatu, *O istorie a petrolului românesc* [A history of Romanian oil], Jassy 2009, p. 316.

<sup>12</sup> P.D. Quinlan, *Ciocnirea deasupra României. Politica Anglo-Americană față de România, 1938–1947* [Clash over Romania. Anglo-American policy towards Romania, 1938–1947], Jassy 1995, p. 57.

<sup>13</sup> G. Buzatu, *O istorie a petrolului românesc* [A history of Romanian oil], p. 339.

<sup>14</sup> P.D. Quinlan, *Ciocnirea deasupra României* [Clash above Romania], pp. 57–58.

<sup>15</sup> P. Salmon, *Scandinavia and the Great Powers 1890–1940*, London 1997, p. 342.

<sup>16</sup> Diplomatic Archives of the Romanian Ministry of Foreign Affairs (hereinafter AMAE), fund 71, England, vol. 38, f. 248–252, Report no. 289 of 4 April 1939.

<sup>17</sup> P. Salmon, *British Plans for Economic Warfare Against Germany*, p. 65.

<sup>18</sup> M. Fritz, *German steel and Swedish iron ore*, Gothenburg 1974, pp. 110–111.

Taking advantage of Sweden's unstable economic situation, German companies capitalized on the closure of several iron mines due to economic and financial crises. Moreover, the Swedish government was compelled to dismantle and sell extraction equipment, while several mines became filled with water from precipitation<sup>19</sup>. Recognizing an advantageous opportunity, German investors purchased several abandoned mines, subsequently investing substantial funds to modernize them and ramp up extraction operations to the desired capacity<sup>20</sup>.

Following the year 1936, Great Britain took advantage of Germany's financial constraints, which hindered its ability to pay for imports from Sweden. This led Great Britain to attempt to assert control over the Swedish iron industry. As a result, British authorities made the decision to increase ore purchases, although the British steel industry had neither the necessary absorption capacity nor the need for additional raw material. British authorities pursued a similar strategy in the case of Romanian oil, offering to pay in cash even when prices were not always favorable, in order to prevent any surplus from being available for purchase by Germany. While this plan initially succeeded, it was short-lived as Great Britain faced an economic downturn in 1938, allowing Germany to acquire the 2.2 million tons of Swedish ore that had been designated for the British market<sup>21</sup>. Nevertheless, as the Second World War approached, Germany held a significant advantage over its competitors, as Swedish iron extraction rose to 14 million tons, with more than a half of this production being exported to the Ruhr region<sup>22</sup>. More specifically, German industry absorbed 75% of all Swedish iron exports, while Great Britain, the second-largest buyer, only absorbed approximately 12%<sup>23</sup>. Meanwhile, in 1938, Romania extracted 6,610,000 tons of crude oil, of which the Romanian authorities exported 447,000 tons to the Reich<sup>24</sup> and about 430,000 tons to Great Britain<sup>25</sup>.

In early 1939, there were rumors of Great Britain inciting the miners working in Northern Sweden to strike. The Brits were accused of planning sabotage on the railway connecting Kiruna's mining area to the harbors of Luleå and Narvik<sup>26</sup>. Additionally, British saboteurs were reportedly active in Romania, attempting to obstruct naval traffic on the Danube by depositing a considerable quantity of rocks into the river and sinking barges<sup>27</sup>. Despite these efforts to disrupt Germany's supply of raw materials, Hitler secured his country's access to valuable resources by signing economic treaties with Romania and Sweden before the outbreak of the Second World War.

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<sup>19</sup> M. Fritz, *Sveriges tyskgruvor. Tyskägda gruvor i Sverige under Andra Världskriget* [Sweden's German mines. German-owned mines in Sweden during the Second World War], Lund 2007, p. 17.

<sup>20</sup> *Ibidem*, p. 24.

<sup>21</sup> P. Salmon, *British Plans for Economic Warfare Against Germany 1937–1939*, pp. 58–59.

<sup>22</sup> M. Fritz, *Sveriges tyskgruvor* [Sweden's German mines], p. 8.

<sup>23</sup> P. Salmon, *British Plans for Economic Warfare Against Germany 1937–1939*, p. 57.

<sup>24</sup> A. Hillgruber, *Hitler, regele Carol și mareșalul Antonescu. Relații româno-germane (1938–1944)* [Hitler, King Carol and Marshal Antonescu. Romanian-German relations (1938–1944)], Bucharest 1994, pp. 289–290.

<sup>25</sup> P. Marguerat, *Le IIIe Reich et le pétrole roumain 1938–1940*, Geneva 1977, p. 99.

<sup>26</sup> P. Salmon, *Scandinavia and The Great Powers*, p. 343.

<sup>27</sup> P.D. Quinlan, *Ciocnirea deasupra României* [Clash above Romania], p. 58.

## The Resource War: Germany vs. Great Britain

Both Romania and Sweden declared neutrality soon after the outbreak of the Second World War. In order to maintain their sovereignty and territorial integrity, both countries provided economic concessions such as trade in goods and capital flows to the belligerent nations. Romania, for example, yielded its oil resources to Germany in exchange for armament deliveries. The geopolitical situation in the region became critical when the Soviet Army invaded Eastern Poland, extending its common border with Romania. This prompted Romanian authorities to purchase massive quantities of war materials, creating an opportunity for Germany to control Romania's oil production and distribution. With swift deliveries of armaments and ammunition, Berlin successfully expanded its influence in Romania<sup>28</sup>.

Romania's alignment with the Axis led to the country becoming politically and economically subservient to the Reich's necessities. From now on, we will identify more differences than similarities in how the principal belligerents treated Romania and Sweden during the conflagration. When Germany initiated hostilities against the Soviet Union, Sweden sought to maintain friendly relations with all belligerent parties by exporting iron ore. Although the Swedish government agreed to supply Germany with the ore quotas specified in signed agreements, it also allowed raw materials to clandestinely reach Great Britain<sup>29</sup>. This pragmatic approach was a response to economic pressures from both Germany and the Allies. However, it also reflected a political double standard, as iron ore exports to Germany were governed by established conventions, while exports to Great Britain were not subject to similar legal constraints<sup>30</sup>.

Sweden's approach to maintaining its neutrality has been endorsed by the authorities in Stockholm, despite being controversial. For instance, in a memorandum dated January 25, 1940, Erik Boheman, the State Secretary for Foreign Affairs at that time, emphasized that Sweden's wartime policy was not aligned with any political ideology, but rather aimed to safeguard the country's freedom<sup>31</sup>. Although Sweden sought to stay out of the conflict, it made concessions that favored Germany economically and politically. In addition to increasing iron ore deliveries, Sweden agreed to censor media and cultural events to prevent public criticism of Hitler's regime and war. The Swedish authorities also permitted the transportation of over 2 million German soldiers and war materials to and from Norway using Swedish railways. However, a compromise that sparked public disagreement involved the transit of the *Engelbrecht* division, comprising 14,712 armed troops, from Norway to Finland, in the initial days of Operation Barbarossa<sup>32</sup>. Sweden faced an ultimatum from Germany, as Hitler required more troops in Finland once he had ordered the invasion of the USSR. The political debate surrounding Hitler's ultimatum became known as the "Midsummer crisis"<sup>33</sup>.

<sup>28</sup> G. Preda, *German Foreign Policy towards the Romanian oil*, p. 327.

<sup>29</sup> E.B. Golson, *The Economics of Neutrality in the Second World War*, S. Broadberry, M. Harrison (eds.), London 2020, p. 82.

<sup>30</sup> E.B. Golson, *The Economics of Neutrality: Spain, Sweden and Switzerland in the Second World War*, London 2011, p. 93.

<sup>31</sup> P.A. Levine, *European Neutrals and Non-Belligerents During the Second World War*, Cambridge 2002, pp. 307–308.

<sup>32</sup> *Ibidem*, p. 319.

<sup>33</sup> In the period leading up to the decision, there was a division among the members of the wartime coalition government, consisting of Per Albin Hansson's Social Democratic Party and representatives of other political

After June 1941, Germany's use of Soviet natural resources was cut off, and the Allies' blockade limited Berlin's access to goods from outside of Europe. Consequently, German authorities began to rely on petroleum products from Romania and iron ore extracted from Sweden. However, Romanian oil became increasingly expensive, with prices rising by 200%<sup>34</sup> in 1942, while the prices for iron ore from Sweden varied between 10% and 25%<sup>35</sup>. This escalation in oil prices caused dissatisfaction with the German leadership, prompting discussions between Deputy Director of the Economic Policy Department of the German Foreign Ministry Carl Clodius, and the Romanian Minister of Foreign Affairs Mihai Antonescu in the spring of 1942. Clodius traveled to Bucharest to negotiate a new trade agreement. He addressed, among other aspects, the Reich's decision to raise prices for goods destined for the Romanian market in response to Bucharest's high oil prices<sup>36</sup>.

In Sweden, the Ludvika region was home to several mines controlled by German companies such as Hoesch, Krupp and Gutehoffnungshütte alongside their business partner N.V. Rollo. These mines, known as the Lekomberg group, included Lekomberg, Blötberget, Stollberg, Håksberg and Nya Noragruvorna. Among these, the Blötberget mine was particularly noteworthy for its iron ore, which had a sufficiently low percentage of phosphorus and did not require further enrichment. Another mine of interest was Stollberg as it yielded other valuable metals such as zinc and lead. Additionally, the Vereinigte Stahlwerke group, a major German concern, was owned by the Stora Långvik group. The ore in this area contained only 50% iron but was low in phosphorus, which made it high-quality. Another German company was Eisenwerk Kraft, which owned Norberg's high-quality, low-phosphorus iron ore fields. Germany aimed to extract 800,000 tons of iron ore annually, but this target was only achieved in 1941. In 1940, the mines of the Lekomberg group employed about 1,350 workers<sup>37</sup>.

In 1940, there was a noticeable decline in the delivery of oil and iron. Unlike previous years, the cause was no longer rivalry between the Great Powers but rather natural circumstances. The extremely cold winter of 1939–1940 led to the freezing of the port of Luleå, which was a crucial commercial center for shipping iron ore to Germany in the Baltic Sea. Consequently, Swedish iron ore exports dropped dramatically, covering only 25% of Germany's total consumption. This had a significant impact on the wartime economy. German iron ore stocks, which stood at 4.2 million tons in 1939, dwindled to 1.8 million tons by April 1940 due to severe weather conditions that disrupted navigation on the Baltic Sea<sup>38</sup>.

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parties such as the Farmers' League, People's Party and National Organization of the Right. Additionally, there were politicians who opposed the concessions granted to Hitler. It was during these deliberations that King Gustav V reportedly threatened to abdicate if the Swedish government did not comply with Hitler's demands. Ultimately, Hansson's government yielded to the pressure from the Axis powers, allowing German troops to pass through Sweden on their way to Finland. While the sincerity of King Gustav's reported threats was never confirmed, it is a matter of record that the Swedish monarch expressed support for Hitler's campaign against Bolshevism in a letter dated October 28, 1941 (H. Mouritzen 1988, p. 192, as cited in D. Arter, *Scandinavian politics today*, Manchester 1999, p. 273).

<sup>34</sup> A. Hillgruber, *Hitler, regele Carol și mareșalul Antonescu* [Hitler, King Carol and Marshal Antonescu], p. 118.

<sup>35</sup> M. Fritz, *German Steel and Swedish Iron Ore*, p. 84.

<sup>36</sup> AMAE, fund 71, Romania, vol. 510, 1941–1942, f. 29, Telegram no. 1 718, 21 Mars 1942.

<sup>37</sup> M. Fritz, *Sveriges tyskgruvor*, [Sweden's German mines], pp. 20–25.

<sup>38</sup> M. Fritz, *Swedish iron ore*, pp. 134–140.

The situation was further complicated in Southeastern Europe as the freezing of the Danube made navigation impractical. Rail traffic across the Carpathian Mountains became difficult, while the Iași-Cernăuți-Lviv railway section was shut down following the Soviets control of Eastern Galicia. Given these circumstances, Germany's oil imports from Romania decreased from 1,272,000 tons in 1939 to 1,196,000 tons in 1940<sup>39</sup>.

After the Romanian army initiated its offensive against the Soviet Union on June 22, 1941, the Reich gained control of several Romanian oil companies. Germany acquired the Concordia and Columbia oil refineries from the French government and placed a Dutch director loyal to Hitler in charge of managing the Astra Romana refinery. In the meantime, German authorities established Kontinental Öl GmbH, a company specializing in manufacturing oil machinery suitable for the Romanian industry. The swift German infiltration into the oil industry displeased the authorities in Bucharest, who were unwilling to nationalize their natural resources so hastily. As a result, Mihai Antonescu proposed that a part of the total shares should be returned to Romania, a suggestion that was eventually accepted by Clodius<sup>40</sup>.

The authorities in Berlin made significant investments to maximize oil extraction<sup>41</sup>. These efforts were successful, with Romania exporting approximately 2.9 million tons of oil to the Reich in 1941, marking the largest quantity delivered by Romanians since the outbreak of the war<sup>42</sup>. However, exports of petroleum and derivatives experienced a decline in 1942, which was met with dissatisfaction by the German authorities. Contributing factors included a notable increase in domestic consumption, determined by the expansion of the national territory once the Transnistria region came under Romanian administration, the shift from solid wood-based fuel to liquid fuel, and limited transportation alternatives<sup>43</sup>.

During the start of the war, Hitler anticipated a swift and triumphant conclusion in favor of the Third Reich. To achieve this plan, he prepared the national economy by increasing oil extraction<sup>44</sup> and synthetic fuel production. Leveraging Germany's abundant coal reserves, the authorities initiated the development of coal distillation plants prior to the First World War, but the project made real progress after substantial investments made in 1936. Notably, during the Second World War, only 23% of Germany's crude oil production was achieved domestically, while synthetic oil made up to the remaining 77%. Key synthetic plants were strategically established at various locations, including Auschwitz, Blechhammer-North, Bohlen, Brux, Heydebreck, Ludwigshafen, Lutzkendorf, Magdeburg, Merseburg-Leuna, Moosbierbaum, Politz, Scholven, Wesseling and Zeitz<sup>45</sup>. By producing

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<sup>39</sup> A. Hillgruber, *Hitler, regele Carol și mareșalul Antonescu* [Hitler, King Carol and Marshal Antonescu], p. 290.

<sup>40</sup> AMAE, fund 71, Romania, vol. 510, 1941–1942, f. 97–98, Note 5 June 1942.

<sup>41</sup> A. Hillgruber, *Hitler, regele Carol și mareșalul Antonescu* [Hitler, King Carol and Marshal Antonescu], pp. 194–195.

<sup>42</sup> *Ibidem*, p. 199.

<sup>43</sup> AMAE, fund 71, Romania, vol. 510, 1941–1942, f. 33, Note 25 Mars 1942.

<sup>44</sup> The investments showed a positive result. In 1940, Germany's crude oil production reached about one million tons, a significant increase if we compare it with the quantity extracted in 1932, which reached approximately 230,000 tons (R.G. Stokes, *The Oil Industry in Nazi Germany, 1936–1945*, "The Business History Review" 1985, vol. 59(2), p. 261).

<sup>45</sup> C.W. McArthur, *Operations Analysis in the U.S. Army Eighth Air Force in World War II*, Providence 1991, p. 203.



synthetic fuel, Germany could meet its domestic needs for aviation spirit, diesel, and petrol<sup>46</sup>. Even though the German investments had positive results, the attrition war required even more fuel and petroleum products to sustain Hitler's war machine. In response, Germany declared Prahova Valley a strategic region and fortified it to safeguard its resources, transforming the area into a fortress<sup>47</sup>. Meanwhile, the Allies planned to disrupt Nazi Germany's oil supply from Romania through acts of sabotage and large-scale bombing of the Prahova oil fields. However, due to the effective intelligence and counterintelligence efforts of the German army's *Abwehrstelle Rumänien*, established in October 1940, these sabotage attempts were largely thwarted in the early years of the war. The German institution, through various measures and actions, destabilized the Allies' espionage network in Romania and expelled several informants employed as engineers and workers in refineries. As a result, the espionage networks were disbanded, and the Romanian Special Intelligence Service ramped up surveillance of key points in southern part of the country including ports on the Danube and the Black Sea, and important railway transport routes supplying exports to the Third Reich<sup>48</sup>.

The German authorities firmly believed that Romania was unable to adequately safeguard its strategic assets. As a result, they deployed approximately 50,000 *Luftwaffe* military personnel to bolster Romania's air defenses. The majority of these forces were stationed around the refineries in Ploiești<sup>49</sup>, with additional German Air Force personnel assigned to protect the harbor in Constanța and the shipping port in Giurgiu<sup>50</sup>. Furthermore, Germany supplied anti-aircraft guns, aircraft, barrage balloons, and explosive-laden to fortify the defensive capabilities around Ploiești<sup>51</sup>.

The defensive system effectively repelled the Allies' airstrikes on the night of June 11–12, 1942, when American aviation carried out the Halpro mission<sup>52</sup> and targeted oil

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<sup>46</sup> D. Edgerton, *Controlling resources. Coal, iron and oil in the Second World War*, in: *The Cambridge History of the Second World War*, vol. 3: *Total War: Economy, Society and Culture*, M. Geyer, A. Tooze (eds.), Cambridge 2015, p. 142, (online): DOI <https://doi.org/10.1017/CHO9781139626859.006>.

<sup>47</sup> Both Great Britain and the Soviet Union recognized the strategic significance of Prahova Valley during the Second World War. British military operations in Greek islands aimed to create a base for future air strikes against Romanian refineries, while the Soviet Union was the first of the Allies to conduct air strikes against Romanian oil refineries shortly after the beginning of Operation Barbarossa, on July 13, 1941. After destroying several storage and railway tanks, the Soviets extended their attacks towards Constanța harbor. These air strikes proceeded until Germany took control of the air bases in Crimea (J.A. Stout, *Fortress Ploiesti. The Campaign to Destroy Hitler's Oil*, Havertown 2011, pp. 25–26).

<sup>48</sup> O. Trașcă, *Relațiile politice și militare româno-germane, septembrie 1940–august 1944* [Romanian-German political and military relations, September 1940–August 1944], Cluj-Napoca 2013, pp. 397–398.

<sup>49</sup> Ploiești, a city situated 80 km north of Bucharest, experienced rapid development due to its rich crude oil reserves, establishing itself as the center of Romania's petroleum industry. With modern refineries and related infrastructure, Ploiești ranked second in Europe and seventh worldwide in oil production, generating approximately 7.2 million barrels of oil prior to the outbreak of the Second World War. (M. Jonas, *Hitler's Satellites? Finland and Romania in Nazi Foreign Policy and War Strategy, 1940/1941–1944*, J. Suchoples, S. James, B. Törnquist-Plewa (eds.), Berlin, 2019, p. 492).

<sup>50</sup> R. Goralski, R.W. Freeburg, *Oil & War. How the Deadly Struggle for Fuel in World War II Meant Victory or Defeat*, Quantico 2021, p. 79.

<sup>51</sup> J.A. Stout, *Fortress Ploiesti*, p. 56.

<sup>52</sup> Named after Col. Harry A. Halverson, an American professional officer in the Army Air Forces. This mission was known under various names, such as Halverson Project 63, Halverson Project, Halverson Detachment, or simply Halpro (J.A. Stout, *Fortress Ploiesti*, p. 26).

facilities in Ploiești. Despite the attacks, the damage to the defended targets was insignificant<sup>53</sup>. On August 1, 1943, the Allies launched Operation Tidal Wave, a surprise airstrike, but the Romanian defense intercepted the planes in time and inflicted significant damage. Although this raid was more successful than the previous one and reduced oil production for refineries Astra Romana, Columbia, Steaua Romana, and the Romanian American Society<sup>54</sup>, it did not succeed in shutting down oil production in Ploiești permanently. These unsuccessful attempts were due to the Allies being misled by pyrotechnics and large explosions, leading their commanders to believe they had successfully destroyed the targets. Additionally, the refineries managed to maintain field production after only a temporarily cessation<sup>55</sup>.

In 1943, Swedish trade and national security faced significant challenges. As Germany began losing territory to the Allies, diplomatic pressure from Great Britain and the USA on Stockholm increased. The Western powers demanded that Sweden restrict exports of iron ore and ball bearings to Germany, cease Nazi transits, and allow Norwegian boats to depart from Swedish harbors<sup>56</sup>. Despite these setbacks, Germany continued to uphold its trade convention with Sweden, delivering requested products. This agreement provided no incentive for Stockholm to diminish iron ore exports to the Reich. At the same time, although Germany had access to other iron ore mines, especially in France and the USSR, its war industry continued to covet Swedish pig ore<sup>57</sup>.

In an effort to prompt Germany to surrender and end the war, the Allied forces devised a strategy to disrupt the Reich's supply of oil and iron. Simultaneously, in May 1944, the Allies launched targeted raids on German industry, aiming to destroy the refineries that provided synthetic fuel, a key power source for the *Luftwaffe* following Germany's unsuccessful attempts to secure oil deposits in the Caspian Sea. As a result, the Third Reich was left with limited access to oil, relying on resources from occupied Austria and Galicia, as well as fuel imports from its close allies such as Hungary and Romania<sup>58</sup>. Among the mentioned regions, Romania was the primary supplier of oil to Germany's territory and army, exporting 2.4 million tons out of its total production of 3 million tons in 1943<sup>59</sup>. Another crucial aspect to take into consideration was that Hitler faced a shortage of experienced pilots due to heavy losses. This led to the deployment of less trained pilots to defend German synthetic oil plants before a massive Allied raid. Moreover, the scarcity of oil necessary for pilots' training resulted directly from the continuous bombing of Prahova Valley and other key strategic points in Romania<sup>60</sup>. Notably, one of the most significant battles took place at Merseburg-Leuna, which was Germany's largest syn-

<sup>53</sup> Ibidem, p. 33.

<sup>54</sup> O. Trașcă, *Relațiile politice și militare româno-germane* [Romanian-German political and military relations], p. 633.

<sup>55</sup> R. Goralski, R.W. Freeburg, *Oil & War*, pp. 241.

<sup>56</sup> M. Fritz, *Vår man i London. Björn Prytz som svenskt sändebud under andra världskriget* [Our man in London. Björn Prytz as a Swedish envoy during World War II], Falun 2017, p. 144.

<sup>57</sup> K. Zetterberg, *Svensk säkerhetspolitik 1943. En balansakt på slak lina mellan de krigförande* [Swedish security policy 1943. A balancing act on a tightrope between the belligerents], in: *Nya fronter? 1943 spänd väntan* [New fronts? 1943 Tense Waiting], B. Hugemark (ed.), Stockholm 2002, p. 18.

<sup>58</sup> R.G. Stokes, *The Oil Industry in Nazi Germany*, p. 272.

<sup>59</sup> G. Buzatu, *O istorie a petrolului românesc* [A History of Romanian Oil], p. 241.

<sup>60</sup> J.A. Stout, *Fortress Ploiesti*, p. 245.

thetic oil plant<sup>61</sup>. The combination of a weakened defense and the destruction of transport routes, which hindered coal transportation to the oil plants, ultimately led to the synthetic oil industry rapid collapse. By December 1944, the total synthetic fuel production had only reached 16% of its pre-bombing capacity. In 1945, the production volume had dropped to 3%, which resulted in a drastic decrease from 359,000 tons delivered monthly to 11,000 tons. The German crude oil industry sector managed to sustain a production rate of 60% of their previous capacity, but this was insufficient to meet the demands of the Reich's troops. However, in the early months of 1945, there was a sharp decline in crude oil production to 24%, meaning 40,000 tons per month<sup>62</sup>.

**Table 1.** Crude oil and synthetic oil production in Germany between 1939–1943 (1,000 tons)

Year	Crude oil	Synthetic oil
1939	888	2,200
1940	1,465	3,348
1941	1,562	4,116
1942	1,686	4,920
1943	1,883	5,748
<b>Total</b>	<b>7,484</b>	<b>20,332</b>

S. Cox, *The Strategic Air War against Germany (1939–1945). The Official Report of the British Bombing Survey Unit*

The sustained bombing of the Ploiești region began in the spring of 1944<sup>63</sup> and persisted day and night until August 23, 1944, when Romania decided to sign an armistice with the Allies. Romania's departure from the Axis also marked Germany's loss in the oil war. However, Hitler refused to acknowledge the reality. Instead, he trusted his local commanding officers in Bucharest, underestimated Romania's remaining military capacity, and ignored the fact that the Red Army now supported Romanian troops. With his loyal ally, Marshal Ion Antonescu, already arrested, Hitler commanded his troops located in the area to seize the Ploiești oil fields and to recapture Bucharest in order to reinstate a puppet government loyal to his ideology. Hitler's misguided beliefs regarding his influence and authority in Romania were reinforced by diplomatic and military reports sent by the Ger-

<sup>61</sup> The bombing of Merseburg-Leuna had far-reaching consequences beyond the destruction of the synthetic oil industry. The plant, alongside others, was closely linked to the chemical industry, meaning that the bombings also affected munition and explosive production, rubber manufacturing, as well as synthesis of key chemical compounds such as nitrogen and methanol (C.W. McArthur, *Operations Analysis*, p. 203).

<sup>62</sup> R.G. Stokes, *The Oil Industry in Nazi Germany*, pp. 273–275.

<sup>63</sup> The air strikes conducted by the American forces on May 5, 1944, caused significant damage to the Astra Romana, Vega, and Orion refineries, forcing them to halt production for approximately two months. The Standard and Unirea refineries registered minor damage. Even though the Romanian American Society, Xenia and Dacia refineries, were not directly hit, their oil production was affected as the bombing destroyed the pipelines connecting the facilities to the oil wells. Furthermore, the raid also affected the oil pipelines which had to reach Giurgiu shipping port (V. Tudor, *Războiul aerian în România (1941–1944)* [The Air Warfare in Romania (1941–1944)], Bradu 2006, p. 128).

man Legation in Bucharest since the end of the 1930s. However, German forces were unable to resist the Romanian-Soviet attacks and started their retreat<sup>64</sup>. Following the events of August 1944, the German economy experienced a significant decline in fuel production, particularly high-octane aviation gasoline, which plummeted by 95%<sup>65</sup>.

**Table 2.** Romania's oil deliveries to Germany between 1939–1944 (1,000 tons)

Year	Reich's territory	Reich's territory and German army on the fronts
1939	1,258	1,272
1940	1,196	1,177
1941	2,314	2,965
1942	1,497	2,192
1943	1,214	2,406
1944	591	1,043
<b>Total</b>	<b>8,070</b>	<b>11,055</b>

Source: A. Hillgruber, *Hitler, regele Carol și mareșalul Antonescu* [Hitler, King Carol and Marshal Antonescu]

Simultaneously, in 1944, Great Britain, the USA, and the Soviet Union exerted pressure on Swedish authorities to sign a new commercial trade agreement and reduce pig iron exports to Germany from 10 million tons to 7 million tons<sup>66</sup>. By the end of the year, Sweden had delivered 4.5 million tons and only exported an additional 1.2 million tons until the war's end<sup>67</sup>. Constrained by the Allies, Sweden decided to prohibit German ships from using Swedish ports along the Baltic coast and declined to transport pig iron by train from Lapland to Gothenburg. As a result, Sweden halted its exports to Germany in January 1945<sup>68</sup>.

**Table 3.** Germany's pig iron imports between 1940–1944 (1,000 tons)

Year	Sweden	Norway	France/Luxembourg	Spain	Others	Total
1940	5,339	74	281	–	311	<b>6,005</b>
1941	5,027	–	–	126	172	<b>5,325</b>
1942	4,205	–	–	359	447	<b>5,011</b>
1943	5,568	–	–	192	72	<b>5,832</b>
1944	2,628	–	–	53	30	<b>2,711</b>

Source: M. Fritz, *German Steel and Swedish Iron Ore*

<sup>64</sup> See D. Deletant, *Hitler's Forgotten Ally: Ion Antonescu and his Regime, Romania 1940–1944*, New York 2006, pp. 230–244.

<sup>65</sup> O. Trașcă, *Relațiile politice și militare româno-germane* [Romanian-German political and military relations], pp. 647–648.

<sup>66</sup> M. Fritz, *German steel and Swedish iron ore 1939–1945*, p. 54.

<sup>67</sup> M. Fritz, *Tyska gruvor* [Sweden's German mines], p. 38.

<sup>68</sup> M. Fritz, *German steel and Swedish iron ore*, p. 55.

## Conclusions

During the interwar period, Germany and Great Britain contested their hegemony over Romanian oil and Swedish iron, exerting pressure on the governments in Bucharest and Stockholm. Sweden managed to meet the economic demands of the Great Powers and maintain peaceful relations with the main belligerents by exporting iron ore. However, Romania failed to stay neutral and joined the Axis, leading to the majority of its oil products being exported to Germany and its allies. Both Germany and Great Britain were prepared to take aggressive action against Romania and Sweden if these countries did not supply the necessary natural resources.

Despite acts of sabotage and Great Britain's attempts to purchase surplus crude oil and iron ore, Germany was able to import the necessary quantities. The authorities in Berlin used military pressure and issued threats of economic blockades to influence decision-makers in Sweden. Germany displayed a similar attitude towards Romania even though this country remained one of Hitler's most loyal allies. By threatening to invade Romanian territory, whenever the government in Bucharest decided to decrease oil supplies, Hitler ensured the continuous delivery of oil designated for the German market. With Sweden in its geographic sphere and Romania as allied, Germany secured its oil and iron reserves during the war.

The balance shifted in favor of the Allies after the German army's defeat at Stalingrad. From that moment on, the Allies devised a systematic plan to destroy the Reich's oil supply points, primarily through air strikes that inflicted significant damage on Romanian infrastructure and economy. In contrast, Great Britain used economic leverage to limit Sweden's iron exports to Germany, causing havoc in the country. Ultimately, Germany not only lost the military conflict but also the resource war due to military and economic defeat.

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**Andreea Dahlquist** holds a doctoral degree in history. In November 2023, she published her doctoral thesis *Romania and Sweden during the Second World War* (in Romanian). Her research focuses on diplomatic history, minorities, and the history of refugees in the first half of the 20<sup>th</sup> century. E-mail: [andreeaarch87@gmail.com](mailto:andreeaarch87@gmail.com).