

RESEARCH ARTICLE

## The Demographic Impact of the Extractive Industry Development in Interwar Romania

Dan H\*

*Babes-Bolyai University, Faculty of European Studies, Cluj-Napoca, Romania.*

\*Corresponding Author: Email: [dan.horatiu.sorin@gmail.com](mailto:dan.horatiu.sorin@gmail.com)

### Abstract

The paper sets out to perform an analysis of the Romanian extractive industry in the interwar period, identifying it as an important component of the broader industrial sector and one of the main elements behind economic development. Also, we study how the evolution of the extractive industry created poles of workforce attraction and therefore becoming a local driver of demographic change.

**Keywords:** *Interwar Romanian economy, Industry, Extractive industry, Demographic change.*

### Introduction

The interwar period has represented a time of great economical and social change for Romania, as the Unification of 1918, and all the additions regarding territory, population and resources that it brought, provided the premises for deep structural changes. In this dynamic environment, the industrial sector had without any doubt the leading role, its accelerated development being sustained by both the political agenda and the new opportunities generated by the enhanced energetic potential represented by available natural resources.

After briefly describing the broader Romanian interwar industrial context, this paper aims at analysing the structure of the extractive industry and the role that it played in shaping the demographic environment of the areas where relevant natural resources were available.

### The Romanian Industry after World War I

The beginning of the third decade of the XXth century finds Romania at a point where industrial output registers values net inferior to pre-war ones. As such, the report issued by the Romanian Engineers' General Association congress from October 1921 and cited by Cioc and Casarovic [1] highlights the poor status of the Romanian industry: "the state industrial output is [...] well below normal with respect to all branches. There are few industries where output is just a bit over 50% of what it was prior to the war. The current output of most industries is between 30% and 50%

of what it was prior to the war."

In this context and by using new human, natural and capital resources acquired due to the Great Unification of 1918, Romania moved towards an accelerated development of industry. The greatest industrial progress was made between 1921-1930, when the industrial system which would propel the country from the economic point of view during the following decades was set; approximately 60% of the total number of industrial enterprises existing in 1930 was established after 1918 [2].

By resorting to funding means specific to joint stock companies and by using economic advantages provided by the demand and the increase in purchasing power, especially within the internal market, the value of the national industrial transforming output rises, from 11 billion lei in 1921 to roughly 52 billion in 1930-calculations are made by Popescu [3] by taking in consideration only the current territory of Romania. However, industrial capacity was not evenly distributed territorially, as there were great differences between the industrialized regions on one hand, such as Banat, Central Transylvania, Prahova or the area around Bucharest, and the less developed parts of the country such as Oltenia and Dobrogea on the other [3].

Such status is also revealed by the analysis of

data concerning industrial output as opposed to the number of inhabitants. As such, in 1930 the per capita industrial output was around 8000 lei in Banat versus only 600 lei in Oltenia. In that which concerns the number of industrial employees per one thousand inhabitants, the same regions are found again at far ends: 15 industrial workers/ 1000 inhabitants in Oltenia and 62 industrial workers/ 1000 inhabitants in Banat, according to Arcadian [4] as cited by Popescu [3]. As a result, the first decade of the interwar period leaves behind a heterogeneous Romania with a view to industrial development, as the differences between historical regions are more than obvious. Furthermore, a polarization may be noticed within each region, as economic and industrial structures are established in just a few localities, which are usually isolated from one another; at the same time, the largest part of the territory lacked noteworthy industrial facilities [3].

It is also worth mentioning that the Romanian industrialization process of 1918-1930 was also influenced and even restrained by the instability of the Romanian economic environment. According to Gheorghiușă [5], the excessive inflation in the entire continent, caused by emissions of fiat currency lacking coverage in an attempt to pay war costs and satisfy the pressing needs of reconstruction, affected Romania, too and often hindered the investment process. On the other hand, we look at the restructuring of the

banking system, by removing German capital and concentrating financial assets in the hands of a few large banks (of French, Italian, Swiss or British origin), under the careful supervision of the National Bank. Consequently, we notice a specialization of credits, as these large banks take over the industrial credit market, where most funds are in fact directed at and enabling the Romanian industrial expansion during this period.

### The Evolution of the Extractive Industry

Apart from territorial or demographic growth, the 1918 Unification also determined the enhancement of the country's energetic potential. The natural resources available in Transylvania (coal, methane, iron, manganese) added to the oil resources of the old kingdom, outlining a Romania where industrialization would speed up, even in a context where raw material import diminished greatly. Together with the considerable growth of the internal market and consequently of the demand for various products, this caused the spectacular rise of exploitation and consumption of such resources. A decline in the use of wood consumption was also registered, which indicated the modernization of the Romanian energetic industry. The result is noticed as per the numbers corresponding to the total quantity of thermal energy produced, rising from 2,647,100 thousand kWh registered in 1919, to 5,129,180 thousand kWh in 1929 [6].

**Table 1: Energy resources consumption subsequent to the Great Unification [6]**

Resource	1921	1929	Difference	%
Petroleum gas (cubic m)	90.419.750	547.731.507	457.311.757	505,77%
Crude oil (tons)	1.168.414	4.836.794	3.668.380	313,96%
Coal (tons)	1.804.687	3.046.027	1.241.340	68,78%
Methane (cubic m)	90.062.666	258.867.397	168.804.731	187,43%
Wood (tons)	8.000.000	7.500.000	-500.000	-6,25%

As for the import of raw materials, it decreased significantly, due to the integration of new resources within national assets. Hence, we notice

a drastic decrease regarding the import of raw materials used in the industry between 1902 and 1921. Such data is shown in the table below:

**Table 2: Evolution of industry raw materials import [6]**

Industry	1902	1929	Difference % of total
Metallurgical	0,85	0,381	-47%
Leather tanning	0,33	0,215	-12%
Glass	0,956	0,419	-54%
Chemical	0,396	0,066	-33%
Paper	0,392	0,128	-26%

Another major contribution of the extractive industry to the balanced development of the national economy is the creation of industrial centres in areas less economically developed, far from larger towns, and holding back the population thereof and even attracting people from other regions with diminished employment opportunities.

As for the contribution to national income, in 1930 and during the middle of the interwar period the income generated by the extractive industry represented 11.47% of the national income, oil and coal extraction occupying first place, as seen in the table below:

**Table 3: The contribution of the extractive industry to the national income in 1930 (Arcadian [4] cited by Baron [7])**

	(Million lei)
Gross national income	145.000
Oil	12.767
Coal	1.784
Methane	564
Gold, silver, salt, quarries, others	1.519
Total extractive industry	16.634
% of the national income	11,47%

The development of services and state institutions, as well as of the infrastructure also contributed to the development of the Romanian industry, as much of the output was subject to public procurement. The Romanian Railroad Services purchased 65%-70% of the national coal output, while after 1927, the state purchased over half of the metallurgical industry products, 31% of leather tanning products and roughly 11% of textiles. As for gold and silver output, it was entirely acquired by the National Bank of Romania [6].

### The Development of the Oil Industry and its Demographic Impact

During the first half of the XXth century, the oil industry was one of the most important industrial branches of the Romanian industry. The exploitation of significant and easily accessible reserves of crude oil located mainly in the sub-Carpathian areas contributed considerably to the economic development of interwar Romania.

During the interwar period, the values generated by the oil industry represented the greatest weight within the total value generated by the extractive industry, ensuring between 70% and 80% thereof and exceeding by far values

generated by coal and natural gas extraction. The extracted quantities of oil grew steadily until 1936, when the maximum level of the interwar value was reached (8.7 million tons, 10 times more than the 1919 value), while during subsequent years the extracted quantity decreased slightly [7].

Therefore, as Axenciuc [8] notes, Romania was the second largest European oil producer, occupying during interwar decades places 4-6 at global level and ensuring between 2.5% and 3.5% of the entire worldwide production. The Romanian oil centre was established in the Ploiești-Câmpina area, where the largest refineries in the country carried out their activities.

According to Păun [9] oil was the main commodity exported by Romania during the interwar period, as exported oil quantities grew from year to year and reached the peak in 1936, when the exported quantity was over 22 times larger than in 1930, as shown in the table and diagram below. With a view to export values, oil ensured 20% of exported products in 1927 and between 40% and 55% during 1934-1938, taking over the leader position occupied until then by cereals [9].

**Table 4: The evolution of oil export between 1920 and 1937 [9]**

Year	Exported oil (t)	% difference (1920 = 100%)
1920	249.097	100,00%
1921	337.238	135,38%
1922	435.526	174,84%
1923	416.025	167,01%
1924	437.915	175,80%
1925	790.175	317,22%
1926	1.449.917	582,07%
1927	1.953.373	784,18%
1928	2.386.952	958,24%
1929	2.881.011	1156,58%
1930	3.905.409	1567,83%
1931	4.697.053	1885,63%
1932	5.184.234	2081,21%
1933	5.885.633	2362,79%
1934	6.457.422	2592,33%
1935	6.613.141	2654,85%
1936	6.885.128	2764,03%
1937	5.668.942	2275,80%

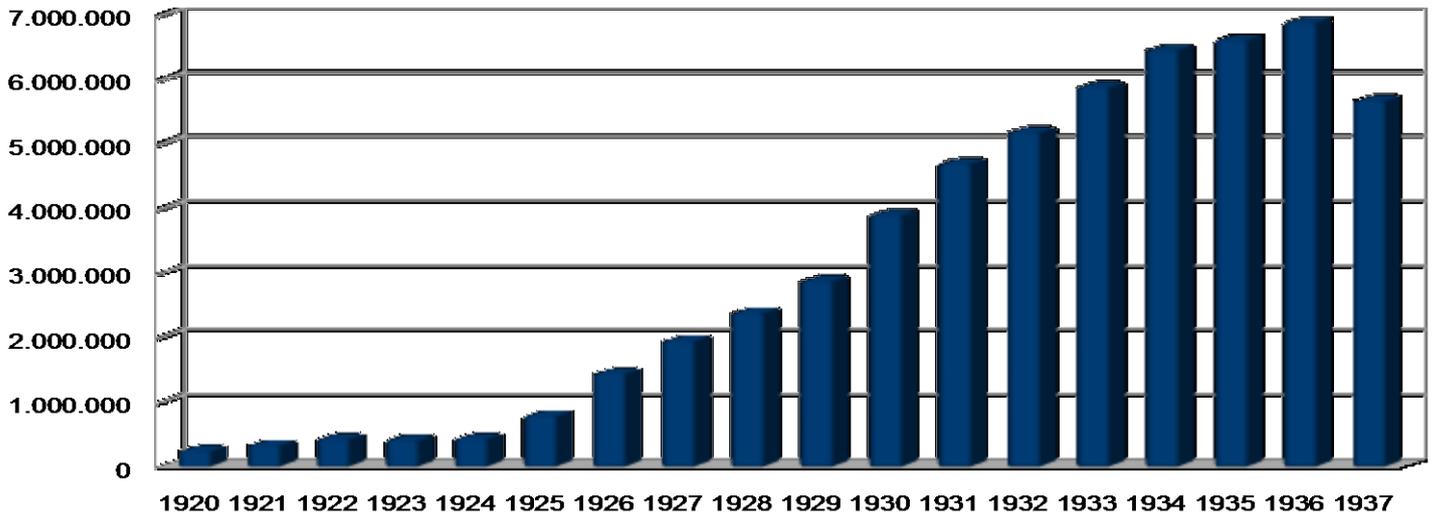


Fig. 1: The evolution of oil export between 1920 and 1937 [9]

According to the 1930 census [10], the subsoil exploitation and the chemical industry occupied an extremely important place within the professional structure of Prahova County; this

reflected the large number of persons employed in oil extraction and refinery. The professional structure of Prahova County is indicated in the table below:

Table 5: Active Population of Prahova County in 1930 [10]

	Total number	% of total
Active population	52.183	100,00%
Soil exploitation	6.037	11,57%
Subsoil exploitation	2.866	5,49%
Metallurgical industry	2.707	5,19%
Wood industry	1.147	2,20%
Construction	1.444	2,77%
Textile industry	3.486	6,68%
Food industry	1.392	2,67%
Chemical industry, paper, printing	6.536	12,52%
Other industrial enterprises	347	0,66%
Credit	531	1,02%
Trade	6.291	12,05%
Transport and communication	2.973	5,70%
Public institutions	6.735	12,90%
Others	8.272	15,85%
Not declared	1.419	2,72%

As such, the contribution of the oil industry to the economic and demographic development of Ploiesti is decisive. It can be closely linked to the ascending evolution of this town in many areas. Statistical data corresponding to 1912 [11], 1930 [10] and 1948 [12] censuses indicates the accelerated rhythm of demographic growth, as the city grew from 56.460 inhabitants in 1912 to 95.632 inhabitants in 1948, thus situating Ploiesti on the third position with respect to large towns' population growth, after Bucharest and Constanța. Therefore, we notice a growth of 40.2% during 1912-1930 (56,460 inhabitants registered by the 1912 census, compared to 79,149 registered in 1930) and of 20.8% during 1930 and 1948

(79,149 inhabitants in 1930 compared to 95,632 in 1948). This was the situation in the context where Ploiești represented one of the main targets of enemy bombardments during World War II, due to its strategic importance to war economy, as resulting from its oil output. This led to greater human losses in Ploiesti than in other towns of the country.

With a view to the fact that during 1912-1930 Romania's population grew by 10.7%, from 12,898,000 million inhabitants registered at the beginning of the period to 14,280,729 inhabitants in 1930, while between 1930-1948, Romania's population grew by 11.1% (15,872,624 inhabitants

on 25 January 1948, compared to 14,280,729 on 29 December 1930), we may analyze the differences between the general demographic growth rhythm and the one corresponding to Ploiești, where the oil industry was particularly active. As such, during 1912-1930, the advance of 40.2% corresponding to the population of Ploiești is clearly superior to the growth of Romania's population, which is of only 10.7%; a similar situation may be identified during 1930-1948, when Romania's population advances only by 11.1%, as opposed to 20.8 percent corresponding

to Ploiești. One explanation regarding the more accelerated growth of Ploiești Municipality is undoubtedly linked to migration which, together with the demographic transition process of the entire country, leads to the exponential growth of the municipality population. Thus, the industrial development of Ploiești and the extraordinary burst of the oil industry in particular is, in our opinion, the most important factor which influenced positively the demographic growth of the town located at the feet of the Carpathians.

**Table 6: The Ploiești population growth compared to Romania's population growth**

Year	Romania		Ploiești	
	Population	Growth	Population	Growth
1912	12.898.000		56.460	
1930	14.280.729	10,72%	79.149	40,19%
1948	15.872.624	11,15%	95.632	20,83%

### The Development of the Coal Industry and its Demographic Impact

Romania had been depending on imported coal until World War I. However, following the realization of its national unity, it obtained possession over important coal resources in Transylvania, precisely in The Jiu Valley and Banat, ensuring in most part its independence in this regard. More precisely, if in 1912, Romania imported about 60% of the quantity of coal that it consumed, this percentage fell dramatically to 7,49% in 1929 ([7] in the conditions in which the consumption of coal was greater in 1929 than in the antebellum period due to the increased size of the country. As such, the words of the mining engineer of that time Gheorghe Damaschin [13] cited by Baron [7] are illuminating: "It is known by all insiders from Great Romania that the coal mines in the Jiu Valley, in Transylvania, the mines in Lonea, Petroșani, Vulcan, Lupeni and Uricani, or as they are usually called – the mines from Petroșani – represent one of the fairest inputs those patriot and illuminated Romanians have brought to us, together with the entire Transylvania, when they declared in Alba Iulia the independence of Transylvania and its annexation to the Mother Country." Thus, state enterprises, as well as multiple industrial branches develop due to the entering of Transylvanian coal in the national economy. Among these, we mention the dockyards, maritime and river ports, metallurgical enterprises in Galați and Brăila, mills in Oltenia, sugar factories (especially those in Moldavia), as well as state companies or institutions: The Romanian Railroad Services, military arsenals,

schools, hospitals, prefect's offices (Bucharest National Archives [14] cited by Bathory [6]).

The richest coal area was The Jiu Valley, with deposits estimated at 1.5 billion tons, meaning 53.72% of the total coal deposits in Romania. With a view to extracted deposits, The Jiu Valley brought during the interwar period roughly 60% of the national total quantity, as well as roughly 65% with a view to the qualitative aspect. The difference between the quantity and quality percentage confirms the superior quality of coal from The Jiu Valley; however, the quality does not rise up to the level of coal extracted from the second largest and most important coal basin of the country: Banat. The pit coal extracted from the Banat mines had greater thermal power than brown coal from The Jiu Valley; nevertheless, available quantities were dramatically smaller, as deposits had been almost drained by the end of the interwar period [6].

In order to ensure the continuous development of the freshly established coal industry, a series of protectionist legal provisions were issued; greater and greater customs duties for imported coal were set during the '20s, so that the domestic output would be able to face the harsh competition on the international market. To this end, the Report of the Coal Directorate, drafted in 1921 by the line ministry, highlights that: "Upon the reconstruction of our country, the abundance of our fuel deposits, in general, and our massive output of coal, in particular, with all varieties demanded on the market (except for blast furnace coke), represents a fundamental leverage which must not be left out, nor ignored, not even in part.

It must be used rationally, as indicated by its intrinsic value, and as healthily as a fuel economic policy defines it" (Damaschin [13] cited by Bathory [6]).

The swift development of the coal extractive industry in Transylvania, which had been neglected during the Austrian-Hungarian rule in favour of more profitable exploitations in other areas of the empire, was the main focus of several events which contributed to the additional development of coal basins in Banat and The Jiu Valley. One of such consequences was the establishment of electrical plants in Timișoara, Arad, Oradea, Reșița, Anina, Lupeni and Vulcan [7].

Apart from the industry general development, these energy plants contributed to the changing of the demographic structure in the respective areas. A number of 13,423 people worked in 1919 in The Jiu Valley, the main coal basin of the country (similar to the pre-war status); this number would increase constantly, reaching 18,197 employees in 1924, meaning 35.5% more. This is the year when the maximum number of employees of mining companies is reached; it would decrease during the following years, due to the mechanization process and the worldwide economic crisis. The

latter is the cause for the dramatic decline in the demand for coal resources on national and international markets, entailing the social crisis among the miners in The Jiu Valley; these are victims of successive redundancy waves, which resulted in the decrease of mine employees to 7,658 in 1933, 40% under the level of 12,806 employees reported in 1929 [7].

With a view to the fact that mining companies represented by far the largest employers in the area (for instance, according to the 1930 census [10], 69.97% of the total number of employees in Petroșani worked in the extractive industry), the pronounced correlation between the evolution of such companies and the demographic evolution is natural. If the the Jiu Valley population (equivalent to the Petroșani area) was of 50,015 employees in 1910, it increases to 60,053 inhabitants in 1920 (by 20%), reaching 66,753 inhabitants as per the 1930 census [10] (10.1% more than in 1920). The mechanization process and the effects of the financial crisis, which change the operation of mining companies, also influence the demographic numbers corresponding to the forth decade. The 1941 census [15] registers a drop in the population of the Petroșani area to 58,088 inhabitants.

**Table 7: Petroșani area population (within the Jiu Valley)**

Year	Population	% compared to previous reporting
1910	50.015	100,00%
1920	60.053	20,07%
1930	66.753	11,16%
1941	58.088	-12,98%

Moreover, we notice unequal evolutions regarding the demographic status in the Petroșani area and its comprising towns; precisely, a drop by 5.78% in urban population, as opposed to a growth of 11.16% regarding the the Jiu Valley population during 1920-1930 and a more accentuated drop in urban population (18.27%) as opposed to the the Jiu Valley population (only 3.27%) during 1920-1941. Such demographic evolution, discrepant as opposed to the general tendency of rural-urban migration and growth of the urban population at national level, is determined by the special features of the economic activity in The Jiu Valley; the rural area is preferred to the urban one only due to circumstance, as features connected strictly to the mining activity were regarded.

At national level and with respect to the extractive industry, we notice a rise in

employment numbers, from 62,989 employees in 1921, to 72,608 employees in 1947, with a view to the fact that the edge was reached in 1926, at 92,494 employees [8]. The major differences registered, of 15.2% between the numbers of 1921-1947 and 46.8% between the numbers of 1921 and 1926 (the year when the highest level of employees in the extractive industry was reached) show the effervescence of the extractive sector, at the centre of which is crude oil and coal extraction.

## Conclusion

The interwar period represented the time when the Romanian industry began its accelerated development. In this context, the extractive industry played a major part in the evolution of the sector, as oil and coal were among the main drivers of change by providing the natural resources needed for the manufacturing sector

and ensuring a consistent flow of capital that would enable public and private entities to continue with industrial investments.

From a demographic perspective, the impact of the extractive industry development is crucial for the evolution of areas rich in natural resources, mainly oil and coal. Consequently, regions such as Prahova County, the Jiu Valley or the mining area in Banat experienced significant population growth by attracting internal migrants, most of

them probably coming from impoverished rural areas where an inefficient agriculture that could not sustain all the rural inhabitants was pushing workforce away from the village [16]. It was the beginning of an economic and demographic evolutionary process that would continue after World War II, when heavy industry that would transform these natural resources into more processed goods was placed in the proximity of extraction sites and would thus create poles of workforce attraction.

## References

1. Cioc M, Cassarovici C (1921) Raport la chestiunea măririi producției industriale, București
2. Scurtu I (2005) Istoria contemporană a României (1918-2005), București: Editura Fundației România de Măine
3. Popescu, Gh. (1994) Dezvoltarea economică în profil teritorial a României 1900-1985, Cluj-Napoca: Sincron
4. Arcadian NP (1936) Industrializarea României, București: Imprimeria Națională.
5. Gheorghiu E, Istoria economică a României, available at <http://www.scribd.com/doc/35690457/Istoria-Economica-a-Romaniei>, [27.11.2013].
6. Bathory L (1999) Societățile carbonifere și sistemul economic și politic al României, Cluj-Napoca: Presa Universitară Clujeană.
7. Baron, M. (1998). Carbune și societate în Valea Jiului – perioada interbelică, Petroșani: Universitată.
8. Axenciuc V (1992) Evoluția economică a României. Cercetări statistico-istorice, 1859-1947, vol. I Industria, București: Editura Academiei.
9. Păun N (1992) Stat și economie, Cluj-Napoca: Interferențe.
10. Recensământului general al populației din 1930.
11. Recensământului general al populației din 1912.
12. Recensământului agricol și al populației din ianuarie 1948.
13. Damaschin, Gh., (1933) Contribuția la studiul combustibilului mineral în cadrul problemei energiei. Principiile unei politici de stat în materie de combustibil mineral, Vol. I, anex VII, București.
14. Arhivele Naționale București, fond. Uniunea Industriilor Metalurgice și Miniere.
15. Recensământului general al populației din 1941.
16. Dan H, Mureșan P (2013) The Romanian Interwar Agriculture and the Demographic Effects of its Development, manuscript submitted for publication.