

GAS AND COAL EXTRACTIVE INDUSTRY DURING THE SOCIALIST INDUSTRIALIZATION PERIOD (1948-1989)

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Abstract:

This article shows that since 1949 the extractive industry has undergone a strong process of restructuring when enterprises were nationalized and a strict control over all components of the economy was established. The new leadership of the country had the intention of developing the industrial sector as well, basically laying the foundations of the new Romanian economy where the industrial sector economy would bring considerable income. This program will lead to the development of the energy sector in Romania also, thus contributing to a great extent to the development and consolidation of coal and gas extraction. Despite of all the economic and social development achieved during the period 1950-1989, at the end of it, Romania ranked a marginal position in the European countries hierarchy since between its level of development and the market economy developed countries large gaps in respect to the main economic and social indicators occurred.

Keywords: *extractive industry, natural gas, coal, socialist industrialization, nationalization*

JEL Classification: *N54, N14, Q32, Q34*

1. Introduction

Since 1949 the Romanian economy experienced a strong restructuring process: firms were nationalized, farming properties were collectivized, and a strict control was established over the economy etc.

The Soviets wanted to turn Romania into a predominantly agrarian state, entering into contradiction with leaders in Bucharest who had the intention of developing the industrial segment also. In the program presented by Gheorghiu Dej as "Romanian way of establishing socialism" were basically put the foundations of the new Romanian economy, an economy in which the industrial sector would bring considerable income. This program will lead to the development of the energy sector in Romania, thus contributing to a very large extent to the development and consolidation of natural gas production.

Between 1951 and 1989, the economic development was based on five-year plans and focused on developing the industry sector. The official policy and strategy of the time aimed to liquidate economic disparities between areas, regions, counties and smooth the level of their economic and social development, creating a modern structure of the economy in the profile of branch and territorial department, in which the industry was supposed to held the central role. They wanted to draw into economic flow and rational use of available resources in the development of each area and territorial unit. Achieving these goals has been affected by the design of industrial development focused mainly on heavy industry, with all the negative implications that come with it, in terms of the whole and structure of the modern economy, especially the living standard of the population.

The implementation of the industrial production model based on heavy industry has resulted in an investment effort made by forcing the investments in this regard at the expense of household consumption and the cost of deep sectoral imbalances.

On one side, making large investments (45-46% of total investments in the Romanian economy) happily resulted in increasing the number of enterprises.

On the other side, the extensive development of the industry has led to important changes in the structure of employment, increasing the number of people employed in the industry.

In terms of strictly quantitative the results are remarkable, but they were accompanied by numerous qualitative shortcomings that occurred especially between 1980 and 1989.

Increasing those funds took place in parallel to a process of increasing wear and tear, this aiming at reducing the depreciation rate and hence increasing production costs. Continued operation of the equipment with high wear and tear led to a negative impact on the Romanian economy, reflected by increased specific energy consumption, scraps, high maintenance costs and repairs etc. These and other issues have led to low-quality, competitive products.

The economic crisis and natural gas needs of Romania in the 80s have brought our country closer to Moscow's policy, despite disagreements on democratization and restructuring concepts developed by the Soviet leader Mikhail Gorbachev by his *perestroika* policy.

Despite the economic and social development during the period 1950-1989, at the end of it, Romania ranked a marginal position in the hierarchy of European countries, among its development and that of developed countries, with market economy, existing large gaps for the main economic and social indicators

2. Natural gas

In the natural gas extractive industry, the most important company at that time was Medias Methane Gas Holding; it was an economic organization under the direct control and supervision of the Ministry of Petroleum and operated from 09.04.1973 to 01.10.1991, when it was converted to Natural Gas Autonomous Company Romgaz Medias.

In this structure, natural gas production (excluding oil associated gas) reached a peak in 1976, of 29.83 billion cubic meters, achieved as follows: 24.69 billion cubic meters in deposits in the Transylvanian Basin and 5.14 billion cubic meters in gas fields outside the Carpathian arc.

Maximum production of non-associated natural gas outside the Carpathian arch was achieved in 1975, of 5.52 billion cubic meters, unlike the Transylvanian Basin was only reached its maximum production in 1981, of 26.01 billion cubic meters.

Maximum production of gas in Romania was reached in 1986 (39.36 billion cubic meters), of which 32% the associated gas and 68% natural gas.

Between 1940 and 1947, natural gas consumption showed a slight increase, this upward trend increased in the period 1948-1955 (4 times), followed by a sharp increase by connecting a growing number of cities to the pipeline network due to the development of the national transport system (Chisăliță, 2004). The gas consumption during 1954-1971 increased 8 times.

The energy policy of Romania supported by the new Government that emerged after 1947 allowed the use of natural gas primarily in industry (Chisăliță, 2004), which led to a much lower gas consumption increase in the residential sector compared to industry. Therefore, the gas consumption growth in the residential sector reached half of the increase in gas consumption in the industrial sector.

The use of natural gas was carried out in various sectors of industry, population, and electricity production (Chisăliță, 2004). If until 1950, their use was mainly for electricity generation in power plants located in various enterprises, after this year Romania's industrialization characterized by the development of chemical industry, metallurgy etc., led to increase the gas consumption from 823.3 million cubic meters in 1950, up to 19,372.1 million cubic meters in 1973 (23 times)¹.

The period 1974-1989 is characterized by starting gas imports from the former Soviet Union due to continued growth of gas demand, leading to achieve the maximum peak gas consumption in Romania, in 1986 (41.8 billion cubic meters). The gas consumption was achieved at a rate of 57.56% in industry, 30.62% in electricity production, 6.69% for free market, and 5.04% for other consumers.

This peak gas consumption in industry was reached in 1985 (29.72 billion cubic meters), being achieved at a rate of 40.42% in the "chemistry", 12.32% in the "metallurgy", 8.56 % in the "building materials" etc.

In the industrial sector, gas consumption was still high in the chemical sector, but showed significant increases in other sectors also.

During the period 1949-1953 has been developed the manufacturing of channel carbon black at Copșa Mica, by building, in 1950, of the 1,100 t and the 1,400 t/year factories, and the 1,500 t/year dissociation carbon black Factory no. 2 that replaced the old Metanex facility. In 1952, was built the 6,000 t/year carbon black plant for furnaces, imported from former Soviet Union (Ivănuș *et. al.*, 2004). In this plant it was manufactured the third type of carbon black, referred to as R3, or short furnace, SRF type.

The year 1957 represented a new world premiere by applying the "combined methane + carbon black oil products" manufacturing process, which led to a sensible increase in capacity from 6,000 t/year, to 31,000 t/year, and reduced specific hydrocarbons consumption from 11.5 toe, to 4 toe [7]. It was also passed to channel carbon black manufacturing, introducing, in 1958, diesel steam methane carburizing, which increased the production capacity by 20%. Thus, in year 1959 were produced different types of channel active carbon blacks, type SRF short blast, and type HMF and FF long blast furnaces.

¹ Connection to pipeline networks of new natural gas consumers was made only with the approval of the Ministry of Petroleum, where there was a special department to review and approve requests in this regard.

In 1964, at Copșa Mica was put into operation the carbon black facility type HAP and ISAF, based on French technology purchased from the French company "Petrol-Chemistry" for three production lines - the first two built in 1965, of 12,200 t/year ISAF type of carbon black, and a third of 11,000 t/year of type PEF.

In the same period was built and put into operation, in 1970, at Pitesti Petrochemical Factory (now "Arpechim"), a carbon black plant with a capacity of 60,000 t/year.

Between 1940 and 1965 chemical industry comprised a number of small enterprises that had relatively low capital and insufficient driving force, and were equipped with low-tech equipment, being just simple processing workshops or industrial laboratories; they were involved in the preparation of auxiliary chemicals for textile and tannery enterprises, cosmetics and pharmaceuticals etc.

The intention of the former Soviet Union immediately after the Second World War to turn Romania into an agricultural country launched the necessity of building factories for the production of nitrogen fertilizers. Although the intention of transforming Romania in "the greengrocers for Russia" was not implemented due to opposition by Gheorghiu Dej, Romania's industrialization plans led to the construction of a large number of chemical fertilizers production plants. This framework encompasses the development, in the 50s, of the chemical plant "V.I. Stalin" in the city of Victoria [8, pg. 231], and of a similar plant in Targu Mures.

Increased production of plastics and fibers based on natural gas and oil products was required by most branches of the national economy [8, pg. 241], and resulted in the construction of new petrochemical plants.

3. Coal

Mining sector development strategy promoted in Romania before 1990 was based on the concept of "economic self-support" in providing the necessary mineral raw materials.

With this aim and desire to achieve impressive levels of economic growth, the socialist regime decided to develop all fields where it was technically feasible, but not necessarily economic. In this context, the selection based on economic criteria of reserves was practically nonexistent. In these conditions several deposits with very difficult geological and mining conditions and relatively low volume of mineralization have been developed and therefore mining companies have directed their efforts primarily to increase production, without giving much importance to economic outcomes and consequences upon the environment.

Because mining wages in this branch were relatively high and enjoyed a number of social facilities (especially in providing housing) in coalfields areal a heterogeneous workforce was transferred, coming from across the whole country. Thus, the situation came to the existence of a mining sector more developed than would be allowed under "normal" mineral reserves potential of the country and economically unjustified as well.

In 1989, the mining branch reached its maximum development when 278 underground pit-mines and quarries were running, and 350,000 people were employed directly and another 700,000 people were employed indirectly in mining industry. Also, over 17,500 hectares of land were withdrawn from the economic flow because of mining activities.

At the beginning of the interval, just after the Second World War, in 1949, it was founded "Sovrom-Coal", a Romanian-Soviet joint stock company for the exploitation and sale of coal. On 31 December 1953, the company is liquidated and at April 1, 1954, the Romanian authorities took over the subordinate enterprises of this company, making final liquidation at June 1, 1954, which allowed the mines in the Jiu Valley to pass, for the first time since their existence, under the Romanian management of "Jiu Valley Mining Company."

Year 1956 corresponds to the opening of the first coal mines in the mining basin of Oltenia. Open mines or quarries were operating lignite from Balta Unchieșului, Ciocani, Gârla Bălăcești. Thus, instead of tractors and threshing machines, in that area emerged huge earth-moving rotary conveyors of all kinds which brought dislodged coal at points of loading coal into railroad cars.

Since 1956, there were a number of changes: it was established the Jiu Valley Coal Company, which will become, in 1969, Petrosani Coal Holding, and in 1977, Jiu Valley Coal-Mining Company. During this period, it was experienced the first stope mining-combine (Donbas mining-combine from USSR), first articulated metal beams, first applied the method of sliding formwork digging wells shift to support elastic galleries and introduction of forward combines to work in coal. Along with technical progress have been continually improved security measures and the protection of labor, increasing in high comfort into underground pit-mines.

Starting with 1960, once with the opening of the great surface quarries and underground pit-mining for lignite transportation to large consumers - the power plants of Mintia, Doicești, Rovinari Paroșeni, Oradea and others - were built six "railroads of coal", as follows: Strehăia - Motru (31 km), built in 1962; Târgu Jiu -Turceni - Filiași (77 km), built in 1967; Turceni - Dragotești (28 km), built in 1967; Amaradia - Bârsești (8 km), built in 1967; Cărbunești - Albești - Seciuri (23 km), built in 1983; and Băbeni - Berbești - Alunu (44 km), built in 1988.

Jiu Valley coal exploitation has expanded rapidly in the second half of the 20th century, during the communist regime (1945-1952 - Petru Groza, 1952-1965 - Gheorghe Gheorghiu-Dej, and 1965-1989 - Nicolae Ceausescu), in which Romania has engaged on a intensive industrial growth, based on coal combustion. Steel production, based on coke obtained from coal, increased from 280,000 tons in 1938, to 13,790,000 tons in 1985. To meet the demand for labour force thus created in coal field, the communist Government brought thousands of miners from the whole country, mainly from Moldova. Until 1979, the number reached 179 thousands of miners.

Energy Program of the 1970s and 1980s provided a significant increase in coal production to compensate for the reduced role of oil and natural gas in energy production because of the global two-wave energy crisis.

Romania's energy vulnerability was demonstrated by stopping shipments of crude oil from Iran, in the late 1970s, when the regime at the time launched a campaign to rapid expansion of coal production.

On 4 August 1977, 35,000 miners from the Jiu Valley protested against a new decree to rise the retirement age from 50 to 55 years and to reduce miners' retirement pensions. Miners' spokesmen claimed that the protest was the climax of many years of working conditions deterioration, of production plans oversized and of intolerable political situation in the country. Initially, the authorities agreed with the demands of the miners, and, as soon as the movement declined, ordered reprisals against their leaders. However, this labour movement is considered the first and the largest anti-communist movement in Romania.

Because of numerous labour disputes in the Jiu Valley, the main mining region of the country, it was decided the development of other coal mining facilities also. But coal from the new mines proved to be of lower quality and low calorific value. Although during 1982-1985, it were opened a number of thirty-five new underground pit-mines and quarries, the initial target of 1985, of producing 86 million tons of coal annually, had to be revised downwards to 64 million tons, but the production actually amounted to only 49 million tons. Even in 1989, there were extracted only 66.4 million tons coal. Poor mining exploit methods led to numerous accidents, underground flooding, and equipping failure were the main causes of the disappointing performance of the coal industry.

Coal production could not keep pace with industry needs. Nearly three quarters of the coal production was burned in large power plants located in or near major coal basins. Large quantities of coking coal had to be imported from the Soviet Union. In 1989, the Australian mining company Hancock signed a contract to deliver up to 6 million tons of coking coal annually for a period of twelve years.

Since the 80s of last century, as previously stated, the communist regime has relocated in this area, workers from different parts of the country, especially from Moldova. In these years, the Jiu Valley has become the main mining area of the country. Total coal yield in 1982 was 41,433,000 tons, that is more than 14 times higher than that of 1938 (2.8 mil. tons). From the point of view of the production structure, lignite represented 75.0%, anthracite 23.3% and brown coal only 1.7%. This structure is the result of the substantial increase in the mining of coal in the period 1960-1982 (about 10 times). Compared to 1989, in the coal production of the country the proportion of lignite represented 81.22%, pit coal 17.43%, and brown coal 1.35% (Romanian Statistical Yearbook, 1990).

The events of 1989 have suddenly changed the economic, social, cultural and political course of Jiu Valley mining settlements. After 1989, because of country's economic problems, a decrease in production of steel and other reasons, some Jiu Valley mines were closed, and others are in process to be closed.

4. Conclusions

Being a sequel of previous researches (Bulearca *et. al.*, 2014), this paper shows that starting with 1949 the Romanian economy experienced a strong restructuring process: firms were nationalized, farming properties were collectivized, and was established a strict control over all parts of the economy etc.

Implementation of the industrial production model based on heavy industry has resulted in an investment effort made by forcing the investments in this regard at the expense of household consumption and the cost of deep sectoral imbalances.

After 1950, when the mines were nationalized and passed under the State property, began an extensive program of mining industry reorganization in Romania. In that period a separate ministry emerged, the Ministry of Mines that was meant for the coordination and planning of mining activities. Also, in this period, has started an extensive program of geological research that led to the discovery of new mineral deposits. The extensive development of the industry has led to important changes in the structure of employment, increasing the number of people employed in the industry.

Mining sector development strategy promoted in Romania before 1990 was based on the concept of "economic self-support" in providing the necessary mineral raw materials.

Because mining wages in this branch were relatively high and enjoyed a number of social facilities (especially in providing housing) in coalfields areal was focused a heterogeneous workforce, coming from across the whole country. Thus, the situation came to the existence of a mining sector more developed than would be allowed under "normal" mineral reserves potential of the country and economically unjustified as well.

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