The Effects of the New Hungarian Energy Policy

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Abstract: This paper focuses on the economic and welfare effects of the new Hungarian energy policy which was developed in order to guide the process of transformation of the energy sector from a centrally planned to a market economy. The impacts of the changing energy policy are illustrated here on the examples of the coal mining industry within the energy sector. The new government's intention is to reduce the inefficient, formerly heavily subsidized coal mining activity and make the remaining companies function within market conditions. The first democratic government after the fall of communism chose a gradual approach in the reform policy as opposed to a "shock therapy." The impacts of the recent gradual policy of transformation are compared with the possible consequences of the alternative faster approach regarding both the demand and supply sides of the Hungarian coal market as well as regarding the changes in the structure of coal production and employment. Changes in the welfare of different groups of the society are also analyzed.

Introduction

There is no doubt that the East European transition is the most momentous political and economic change of our times. Most of the individual elements of the reform have been faced before, mainly in Latin American countries where the combination of a weak private sector , political monopoly and macroeconomic imbalance is not uncommon. Nevertheless, the challenge in Eastern Europe is unique in its system-wide scope, political and historical context, and required speed of reform.[1] The East European transformation has been widely studied in the past few years. However most of the research focuses on the transition in general. Very few studies address the issues of the process of restructuring on the level of an economic sector or a specific industry.

This paper focuses on the economic and welfare effects of the new Hungarian energy policy which was developed in order to guide the process of transformation of the energy sector. As moving from a centrally planned to a market economy, one of the major objectives is to reduce the role of the government and let market forces take over in shaping the economy. The effects of the changing economic policy are illustrated here on the examples of the coal mining industry within the energy sector. There are several reasons to focus on coal mining when analyzing the effects of the energy policy of the transition period. First of all, the changes are the most dramatic in the coal mining sector, since it was probably the most "socialist" (politically important, therefore strongly centrally controlled and heavily subsidized) industry in the past. Even the Hungarian economic reform which started in the late 1960s let the centrally directed structure of coal mining almost untuched, while as a result, companies of the other sectors of the economy gained much more independence, and therefore they entered the transition period to a market economy in a more favorable shape.

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[1]Corbo, Coricelli, Bossak, 1991.

The emphasis on coal mining is justified also by the fact that the relative energy supply of coal in Hungary is the highest among among the different sources of energy (about 80 percent), as well as by the role of coal mining in the energy sector's employment and the changing role of coal in the energy consumption (Table 1.)

Table 1.

Primary Structure of Total Energy Consumption

Selected Years, 1940-1991, Percentage

Source of Energy	1940	1960	1970	1980	1985	1990	1991
Coal	78.0	73.9	50.6	30.4	26.5	20.3	19.6
Crude oil	8.8	20.1	27.6	35.5	30.4	26.7	28.5
Natural gas	3.8	2.9	15.2	25.6	28.3	31.1	30.9
Primary electrical energy[2]	-	0.1	4.5	6.7	13.0	20.0	19.0
Others	9.4	3.0	2.1	1.8	1.8	1.9	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: A Magyar Koztarsasag Kormanya. A magyar energiapolitika. /The Government of the Hungarian Republic. The Hungarian Energy Policy./ 1992. Budapest p.84.
Barta, 1990.p.58.

The energy policy of the communist Hungary

The former energy policy was subject to the political aspects of the region under Soviet dominance, as was the economic policy as a whole. After 1945 the Soviet Union forced the other countries of the Eastern block to obtain their import needs of energy sources from the Soviet Union, in case of Hungary in exchange for agricultural products. This way all of the small countries of the block became dependent on the Soviet Union, not only politically, but economically as well. The insufficient implementation of

[2] Water and nuclear power generation and electrical energy from import

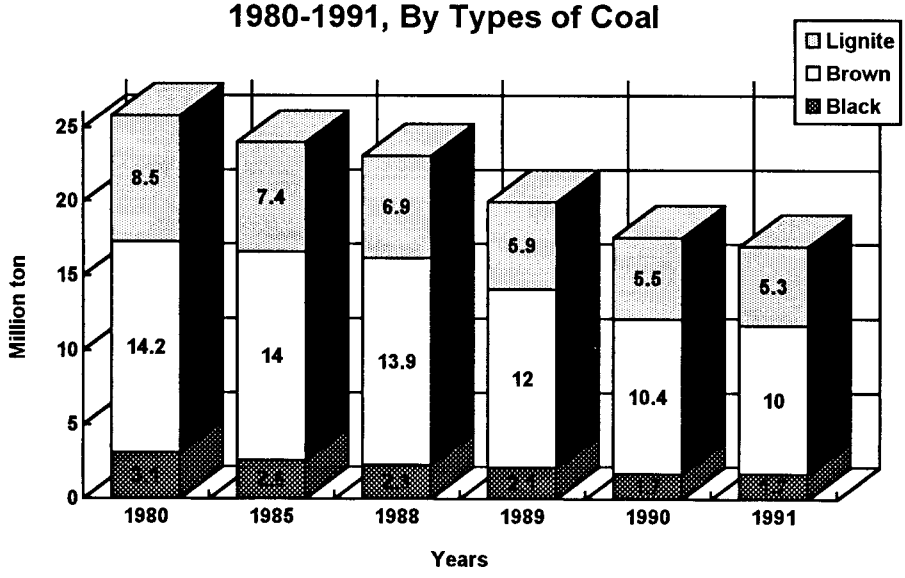
requirements for profitability, safety and protection of the environment within the energy sector were primarily rooted in the political exposure or subjugation of the country. The priority of the former energy policy was to avoid a shortage of energy supply that would cause troubles to industrial production. At the same time, however, the Hungarian economy was oriented to the low-demand markets of Eastern and Central Europe, and postponing modernization of the structure and technology significantly deteriorated the energy efficiency of the economy. As domestic resources were insufficient, energy policy was based on ever expanding energy imports from the Soviet Union, which were thought to be inexhaustible and cheap for ever. As a consequence, a material and energy intensive economic structure evolved, which was also coupled with inefficient and wasteful practices and a lack of incentives.

Coal mining had been one of the most important central issues of the government in the past 45 years in Hungary. It became a crucial element of the economy and economic policy during state socialism, tightly interrelated with foreign and internal policy. Such an exceptional role for coal mining, and heavy industry in general, was based on the Stalinist economic model. The main idea of this model was that war was unavoidable. For this reason those sectors of the economy that are related to military industry (mining, electrical energy, metallurgy) became extremely important, and therefore heavily subsidized by the government. According to this model the "proper socialist firms" were large. Very often an entire industry was represented by a single state company employing tens of thousands of people. Besides this fact, being artificially isolated from the world market of energy resources created a monopolistic situation for these firms.

According to the centrally planned economy, the property, the rights to mine, the central settling of plans in forms of commands, the determined path of products formed a coordinated system where the price of coal mining was of no importance. The coal mining companies had the responsibility for supplying the volume of coal prescribed by the state.

Hungary is relatively poor in natural resources except agricultural land. Most of its coal reserve is low quality "brown coal" and lignite[3]. These two types of coal formed 90 percent of the Hungarian coal production in 1991 (Figure 1). Although the reserves of brown coals are estimated to be adequate, because of geological features and the low quality most of the reserves can not be extracted economically. These facts were ignored in the past and coal mining was maintained at a very inefficient and noncompeteitive level. The activity and development of mining companies and the income of miners were not determined by profitability, but by how well the company met the requirements of the plans. This system did not require entrepreneurial initiative in the level of firms.

Figure 1.
The Coal Production in Hungary
1980-1991, By Types of Coal



[3]Coal is classified in Hungary as well as in other Eastern-European countries into three categories. the most valuable type of coal is called "black coal" or hard coal which is approximatly equivalent of bituminous coals in the United States. "Brown coal" is a lower quality type of coal with less heating values per pound. Brown coal would be named as subbituminous in America. The third category is lignite, coal with the lowest heating values, but usually with the easiest and therefore the cheapest accessibility.

The new energy policy

The new energy policy, formed after the political change, is based on market conditions, and in contrast to the practice of the former decades does not offer detailed programs for the participants of the energy market. The intention of the government in developing the new energy policy was to identify guiding principles and fundamental issues for the sector.

The guiding principles of this policy are the following:

- to change the ownership structure of the energy companies,
- to prepare new legislation for regulating these companies,
- to establish conditions for a diversified import
- to prepare conditions for the integration to the standardized European energy market,
- to establish an energy supply serving the functions of an efficient and modern economy,
- to satisfy the requirements of environmental protection,
- energy conservation.

In spite of the changes in the political system of the country, coal mining has remained in the center of the attention, though the character of the attention has been changed. The new government has been trying to deal with coal mining from an economic rather than a political point of view. Given the physical conditions and the quality of the Hungarian coal reserves it was a fundamental economic blunder to force the development of this sector to the extent and direction it was developed under the former political regime. The new government is not likely to subsidize and invest in this losing sector any longer. The government's intention is to reduce the coal mining activity and make the remaining companies function within market conditions.

Despite of the decreasing coal mining activity as a result of the economic reform in the 1960s, mining remained an important and heavily subsidized sector of the economy (producing between 28 and 24 million tons of coal annually) until the middle of the 1980s (Figure 1). In the past years the technical and economic status of coal mining seriously deteriorated, and all the eight coal mining companies gradually became bankrupt and deeply indebted. In addition to low efficiency and poor economic performance, such indebtedness was also caused by the artificial price system and investment projects emerging from inappropriate central and company decisions. The government, in one of the first actions, decided to settle this crisis situation. It enacted a resolution in August 1990 in order to establish pre-conditions for further operation of the sector. The government founded the Coal-Mining Restructuring Centre for the central direction and control of the transformation. The Centre is authorized with liquidation rights and it reports to the Ministry of Industry and Trade.

In 1992 the government announced that it will close all but eight of its twenty-eight state run mines by the year 2000. Mining in all of these mines to be closed is extremely inefficient and can not be continued without state subsidy. During the liquidation process and restructuring recently going on at six coal mining companies, the amount of state subsidies and loans as outstanding debt of the existing and operating mines is being canceled. By terminating these debts the government is creating a situation where the mining companies can restart their activities with a clean balance in the form of new business associations. The 1992 energy policy developed the concept of assigning mines to "targeted power stations". Hungarian coal is not competitive with the imported coals even in the domestic market, and most of the production goes for the coal fired power stations. On the other hand, these power plants are technologically furnished for burning low quality Hungarian coal. For this reason the government's idea to create new enterprises by merging the mines with the most appropriate power plants. The list of the mines to be closed was developed partially according to this concept. Lignite mining has

the most promising future, because the cost of electricity on the base of lignite firing is competitive with the electricity generated by power stations based on other domestic sources of energy.

There is a very low opportunity for a wide ranging privatization with the involvement of foreign capital or domestic private capital following the restructuring of state owned companies (liquidation, downsizing, merging of mines and power stations). Because of the physical and financial conditions of the sector there is no significant interest in investment in coal mining. Thus far there is only one small share-holding company in the sector.

Consequences of the change in the policy

The government chose a gradual approach to restructure the energy sector and within that, the coal mining industry. Nevertheless, the changes in the first years of the transition have been dramatic. As a result of partial termination of state subsidies to the sector, the already declining trend of coal production became more striking (Table 2.). As coal mining is being converted so that it sustained fewer losses, there have been significant changes in the structure of coal production. The share of lignite is increasing while the shares of the more inefficient black and brown coal mining are declining. There is a shift in the structure of mining according to the technology as well, the role of surface mining is increasing versus underground mining.

Activities in the least efficient mines already have been eliminated or reduced to a minimum level, causing high unemployment among miners (Table 2). By 1991 the number of people working in this sector decreased to almost half of the 1987's employment causing tremendous social tension in the coal fields. Coal miners are one of the least favorably affected people by the change in the policy, since in the past because of the

strategic importance of the sector they were the highest paid workers and provided many other benefits (free or almost free housing, child care and recreational facilities within the companies and other financial benefits).

Table 2.

The Coal Labor Force in Hungary[4]

Selected Years, 1965-1991

Years	Blue collar workers in the mines		Others		Total employment
	Number	%	Number	%	
1965	99626	80.1	24162	19.9	123788
1970	74102	73.5	26679	26.5	100781
1975	58552	68.6	26837	31.4	85389
1980	52210	65.9	26955	34.1	79165
1985	49767	62.3	30163	37.7	79930
1987	48125	62.9	28414	37.1	76539
1989	41485	65.3	22066	34.7	63551
1990	35790	71.7	14151	28.3	49941
1991	32450	75.5	10518	24.5	42968

Source: Banyaszati Informacios es Szamitastechnikai Tarsasag (Mining Information Company), 1986.

[4] According to the Hungarian statistical system the coal labor force is classified into two groups. The first cathegory is called "blue collar workers in the mines" which includes not only the miners, but also other workers who do physical jobs in the mines. All the white collar and the rest of the blue collar workers engaged in activities outside of the mines, but within the coal mining company belong to the cathegory referred to as "others".

Although the role of the benefits are debatable when we consider the dangerous circumstances of their work and the level of pollution they were exposed to, the change is still the most striking for them. Many of them are without jobs and the former benefits (even for those who are still employed the benefits are no longer available, since the companies cut all the expenses they could). The hope to get new jobs for miners is very little, because of the significant reductions in almost all of the sectors and of the few new openings, for which the coal miners would not be the first to be hired. Sufficient funds for unemployment benefits are not available and institutions to handle the suddenly occurred high unemployment (while the rate of unemployment in Hungary in 1989 still was 0 percent it increased to about13 percent by the beginning of 1993) are not developed yet.

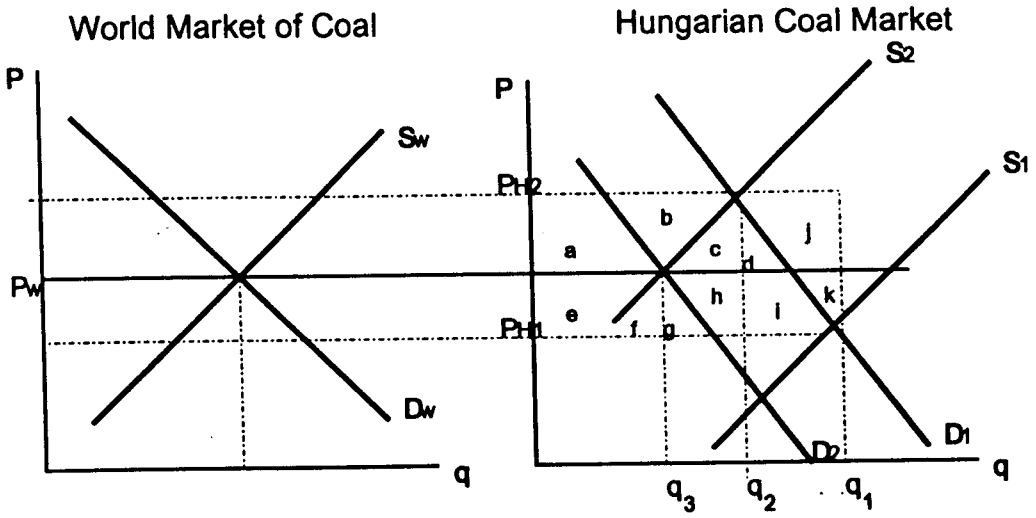
As a result of the new energy policy, coal imports were liberalized in 1990. Now Hungary can import coal from any other country as opposed to the past policy, when purchases of coal and other sources of energy were possible only from the countries of the former Soviet block. The trading system (COMECOM) among the countries of the Eastern block collapsed anyway, right after the political revolution (causing tremendous problems in the Hungarian agriculture, since it used to be a great exporter of agricultural products).

The producer and consumer prices of coal were significantly raised in 1990. However, such high prices were insufficient to settle the economic situation of the coal mining sector and six out of the eight coal mining companies are presently under liquidation process. As a consequence of the pressure expressed by the miners' trade unions raising their voices against the bankruptcy situation, new producer prices were introduced in 1992 again. Through the building in of 10 percent profit, these prices have enabled the sector to partially compensate the 1992 rate of inflation.

The welfare effects of the changing energy policy are graphically illustrated in Figure 2. Because of the artificially created energy prices, and the high subsidies, the price of coal in Hungary and in the other countries of the Soviet block used to be much lower

than the world market price. After withdrawing the subsidies from the sector the prices in Hungary reflect the real costs of producing coal, which are much higher than in the world market, because of the low productivity and inefficiency as a heritage of the past practices.

Figure 2.
Effects of the Changing Energy Policy



As a result of terminating the subsidies and closing of many of the inefficient mines the supply curve shifted to the left S_2 (the production decreased significantly) to match the decreased demand which is the combined effect of the increased price and the now available cheaper coal from the world market. This situation, that there is still a relatively high demand for domestic coal in Hungary dispite its higher price, is caused by the fact, that 70 percent of the coal production goes to the power plants to generate electricity, and these power plants are technologically equipped to use only the low quality Hungarian coal. Due to limitations of firing technology, the coal firing power stations cannot replace such coal with imported, better quality coal, at least in a short run. Such replacement would require reconstruction of the existing power plants, for which the energy sector

does not have financial background. Basically this fact means that there is a relatively secure demand for Hungarian coal as long as these power plants operate. By assigning mines to a "targeted" power station (see earlier) the government's intention is to secure this market for the domestic coal for some period of time. In a long run when the technology at the recent power plants will be replaced by more advanced the demand curve for domestic coal should also shift to the left as the line, marked D_2 on the Figure 2. In that manner the price of coal in Hungary should approach the world market price. (The reduced coal production in Hungary does not have a significant increasing effect on the world market price, because of the low share of Hungarian supply in the world market for coal.)

But the recent situation is shown in the Figure 2., where S_2 and D_1 cross. The following analysis considers this situation as compared to the one before the change. In this case the consumers suffer substantial losses (the change in consumer surplus according to Figure 2. is -a-b-c-d-e-f-g-h-i) due to the increase in price of coal. However, their total loss is even higher than this, since such increase in price of coal results in price increase of other goods and services that use electricity.

Producers, who still remain in business gain (the area of a+b+f), since the government according to the rules of the process of liquidation does not make them pay back the earlier borrowed loans and subsidies. At the same time, the domestic coal mining industry loses some of its share in the Hungarian coal market to foreign competitors, although this lost share is not as high as it would be under pure market conditions. The Hungarian demand for coal can be divided to two different parts. The first is the earlier discussed power plants, and the second part includes the rest of the coal consumers, such as individuals who use coal for heating purposes, and some other institutions. This second segment of the market has a much more elastic demand than the first one, therefore the producers after the change lose these customers first.

In theory taxpayers are supposed to gain (the area of d+i+j+k) because they do not have to pay to provide subsidies. However, in the short run the situation is the opposite. The amount of taxes is increasing significantly with the change in the policy. There is a huge budget deficit in Hungary, and the international loans borrowed in the past are being paid back now and in the near future. The costs of restructuring, such as the shut down of mines, including reclamation is being financed from the sources of the central budget. These costs are estimated to be around 15 billion Hungarian Forints (US $180 million). There are many other newly emerged items (for example creating funds for unemployment benefits, social costs of the displaced miners, etc.,) in the budget that need to be financed partially from taxpayers money.

There are few other alternative policies that the Hungarian government could have selected in order to transform the energy sector and coal mining. As it was emphasized earlier the first democratic government after the fall of communism chose the gradual approach in the reform policy instead of a shock therapy. If it favored the latter one than today only those mines would operate in Hungary which are efficient and the country would import most of its electricity, since the power plants operating on the domestic coal would have been shut down. In this case the price of coal in Hungary would be about the world market price and the situation in the graph could be described by the intersection of S_2 and D_2, that is what the intention of the recent government for a long run. If this was the case than the consumers would still lose (the change in consumer surplus would be -e-f-g), regarding coal prices, but less than in the current situation. For this reason coal consumers would favor the alternative approach, which definitely would be worse than the gradual approach for the producers. Most of the producers would be out of business by now, and even those, who still would be operating were facing tougher competition and gained less (the area e), than in the first case, due to the increase in price. There would also be severe macroeconomic consequences which would have reduced aggregate demand for coal even more. The situation of taxpayers would be very similar in both cases

(in theory they should gain the area g+h+i+k). However, the reasons which create the opposite case to theory as a result of the gradual approach, would have even stronger effects on the taxpayers when applying the alternative approach.

There is no easy way to transfer an inefficient command economy to a market driven system. The price of the transformation is being paid by the citizens now, and the hoped benefits of a market economy will occur in the future. The length of the transition period depends on the initial conditions of the transforming economy and on the policy chosen to create the market conditions. Both of the analyzed policies have negative welfare effects on the consumers, producers, taxpayers and especially on the coal miners. The only social group that would gain in both cases is the environmentalists, since the amount of pollution emitted to the environment would decrease significantly considering the recent, high pollution level of the energy sector.

The gradual approach appears to be more considerate about the welfare of the today's society. The alternative policy would create more social and economic problems in the short run, such as higher unemployment. A faster process of adjustment to world market prices while having huge budget deficits and external debts would also generate even stronger inflationary pressure on the economy than in the case of gradual approach. Although the market conditions would be created faster with the shock therapy approach, the society would experience a greater burden during the period of the transition. The new government is under two sided pressure in this respect. The IMF and other international organizations as conditions for further financial assistance in forms of loans, are demanding lowering the budget deficit faster, which would mean instant terminating of all inefficient activities such as unproductive coal mining. On the other hand, since the second free elections are to be held in 1994, the government is under the pressure of the voters who demand keeping their jobs and at least some elements of the former social welfare system.

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