

Analysis on Coal Price Forming Mechanism in China and its Effect Factors

SHI Cheng¹, GUO Lihua¹, MEI Yiduo²

1. School of Economics and Management, Beijing Jiaotong University, China, 100044

2. China Center for Industrial Security Research, Beijing Jiaotong University, China, 100044
12120793@bjtu.edu.cn

Abstract: For a long time, coal occupies a large proportion in China's primary energy consumption structure, the problems in formation of coal price result in a drastic fluctuation of coal price in recent years. Since the second half of 2006, China has adopted a series of coal price marketization reform measures, but with little success. The fundamental reason is that the coal price forming mechanism is unreasonable, mainly in the unsound mechanism of coal supply and demand, unreasonable coal prices and incomplete price forming mechanism. Therefore, we should construct a reasonable coal price forming mechanism on the basis of clear objectives and principles of reforming and improving the coal price forming mechanism, so as to promote the development of the domestic coal market.

Keywords: Coal price, Price forming mechanism, Effect factors

1 Introduction

Different from the world's petroleum-based energy consumption structure, coal is the main energy and chemical raw materials in China. What's more, for a long time, it occupies the dominant position in primary energy both in production and consumption. Coal price was in a state of unilateral rise since the reform and opening up, but the trend of unilateral rise came to the end after 2010. Instead, the fluctuations of coal price began to intensify and the fluctuations may become the norm.

2 Main Problems of the Coal Price Forming Mechanism in China

Coal industry is the basic industry, coal price should be found and formed in the market and reflect the supply and demand of the coal sensitively under the market economy, so as to guide the activities of coal production and operation. Defects existing in the mechanism of coal price have become an obstacle to its market-oriented mechanism reform at the present stage in China.

2.1 Mechanism of coal supply and demand is unsound

In 2012, the share of coal in energy production and consumption of China accounted for 76.6% and 66.6% respectively. According to the prediction of energy experts, coal will still be the basic energy in China before 2020, and the proportion will not fall below 60% in primary energy consumption structure. Coal industry will continue to be the most important energy industry in China for a long time to come^[1]. However, the government has not eased the management of the coal and adopted the low-price strategy for a long period which caused distortion of coal price signal and could not reflect market supply and demand accurately; therefore, the mechanism of coal supply and demand in China is unsound because of being heavily planned and arbitrariness.

2.2 Structure of coal price is unreasonable

The current price of coal embraces the cost of warehousing, transportation and marketing and other parts on the basis of direct coal extraction cost. Usually, coal price includes ore removal price, middle price and factory price. The unreasonable aspects are as follows:

2.2.1 The framework of current coal production cost is unscientific

The current coal production cost only includes the direct coal extraction cost and leaves the value

depletion of resources during the process of coal mining and the loss of environmental disruption and many social costs out of consideration that transfer the external cost of coal production, and cannot fully reflect the actual cost in the process of production. Take Shanxi Province for example, according to the determination of relevant departments in Shanxi Province, production of a ton of coal in Shanxi would result in 30 yuan loss in coal resources, 52.85 yuan loss in the ecological environment, while these external losses have not calculated into the production costs of coal accordingly, and there is no corresponding recover in the process of sales [2].

2.2.2 The middle parts of coal marketing costs too much

Generally, coal price includes ore removal price, middle price and factory price. The price that coalmine used to calculate its benefits is ore removal price. Because of the multi-middle-links in the coal marketing, there is a big gap between ore removal price and factory price. The increasingly rising cost of the middle links of marketing lead to the little actual earnings of coalmine is very little. According to the data that Yangquan Coal Industry (Group) CO., LTD which is the largest anthracite production base in China provided, the group achieved a profit of 550 million yuan in the first half year of 2013, and compared to the same period of 2012 which profited 2.089 billion yuan, the drop reached 73.6%. What is worth mentioning, the production of coal in May reached 6.33 million tons, but the profits was only 20 million yuan.

2.2.3 The design of taxation and fee system of coal industry is unreasonable

The unreasonable aspects of taxation and fee system are mainly as the followings. The first is the heavy value-added taxes (VAT) of coal, the implementation of VAT reforms in China in 2009 made the VAT of coal recovered to 17% from the original 13%. Due to the small proportion of new equipment investment in the overall cost, only influence 1% VAT deduction, so the coal VAT increased by about 3% actually. The second is that too many programs that need tax, and repeatedly imposed, resulting in the prominent problem that fee is greater than tax. Coal resource tax, resource compensation, mining rights royalties all belong to resource taxes, but are difficult to merge owing to belonging to different departments, and, and there is a trend to improve the collection standards. The third is that some fees that government has already prepared to cancel are still performing, such as railway construction fund and port construction fees, and all these result in increasingly heavy burden to coal enterprises [3].

2.3 The coal price forming mechanism is incomplete

The mechanism of coal price is not complete at present, and the balance and the controllability are poor.

2.3.1 The lack of regulating mechanism of coal price

The problems that government keeps control the price of electricity at present, the unreasonable formation of coal production cost and the irrational cost of circulation of coal indicate the need to implement price regulation of coal. Constructing a reasonable regulating mechanism of coal price to regulate the coal price and implementing the differential regulation is an important issue that coal industry should solve currently.

2.3.2 The lack of financing mechanism of coal industry

Coal is the basic energy in China and coal price has a crucial impact on economic development. With the coal production cost becoming more and more perfect, the price of coal will rise inevitably. However, the rise and the fluctuations of coal price will influent the development of social and economic. The stability of coal price needs the intervention of government. Government should increase the tax of high profit coal enterprises while financing other coal enterprises to achieve both economy running smoothly and coal enterprises developing.

2.3.3 The lack of resource reserve mechanism of coal

The effect of reserve of coal resource has two aspects. One is to ensure the security of energy, aiming to cope with the necessary urban supply and industrial production under sudden crisis. The other is to keep the coal price steady. The emergency program of national coal reserve that National Development and Reform Commission submitted to the State Council is approved on February in 2011. The initial reserve plan is 5 million tons in the program, but this is only 1.7‰ to a country with 3 billion tons coal

consumption per year which is less than the coal consumption per day. It is unable to reach the goal that keeping the coal price steady.

3 The Analysis of Effect Factors of Coal Price

The fluctuation of coal price is influenced by many factors, but as a commodity, the price of coal is decided by its own value and fluctuates affected by supply-demand relationship. So the basic factors affecting the fluctuation of coal price is its own value and supply and demand. All other factors affect the price of coal through its value and supply-demand relationship.

3.1 Cost of production

With the rapid fluctuant development of coal economy, eight pilot projects established the mechanism of comprehensive compensation of coal mining to impose sustainable development fund of coal and mineral resources taxes and compensation payments and mining rights payments and so on from 2007. These policies and measures improved the system of coal production costs of coal enterprises, and also contributed the increase of coal price. So the production costs have significant influence on the price of coal^[4].

3.2 Cost of transportation

Transportation also has considerable influence on the price of coal. Due to the long distance and the complexity of railway transportation, and in addition, not only each operation section has different price, but also the structure of fees is complex, so it is difficult to describe the cost of railway transportation in detail. Besides that, the limited growth of the ability to depart the harbor and the surging freight is inseparable. As a major component of coal price, the cost of transportation will affect the price of coal at a large extent, and with the fluctuation of the cost of transportation the price of coal will fluctuate synchronously.

3.3 The supply-demand relationship

At first, demand of coal depends on the growth rate of national economy of China. In recent years, national economy of China keeps growing at a steady rate. Secondly, industries like electric power, metallurgy, building materials and chemical engineering maintain a steady development, especially the electric power industry. Thirdly, the demand of bituminize that fits central-heating boiler for urban and the high-quality coals which with low ash and large heat is surging. Therefore, the total demand of coal will maintain steady growth.

The situation of coal supply is an important indicator of social economy. In recent years, the relationship between supply and demand of coal is in a hasten-supply balance in general, mainly due to the rapid growth in demand. But in the long term, demand of coal will enter the stage of steady growth in the next few years. The demand expansion is no longer the leading factor of tight supply of coal, and the shortage of supply caused by inadequate transport ability of railway and consecutively tight resource will be the primary factor.

3.4 The price of downstream and upstream products

Upstream products of coal generally include steel, explosives, wood, etc. Upstream products provide the necessary raw materials for infrastructure and the production for coal enterprises. With the rising of the price of raw materials, the price of coal will also rise, which will increase the cost of the products of coal. But the impact of downstream products on coal price is more major. Downstream products mainly include electric power, metallurgy, building materials and chemical engineering. They affect the trend of price of coal through the status of their production and demand. The rapid development of the energy and construction industries and infrastructure promote the demand of coal. The price of downstream production will affect their supply and demand, and also the supply-demand relationship will affect the

demand of coal.

3.5 The price of alternative energy

The rise of oil price also has an impact on the coal market. The sharp rise of oil price promoted the rising of coal price to a certain extent in the end of 2003. The price of oil affects the price of coal in two ways. One is the price relation contributes to the rising of the price of coal. The other is that the conversion of demands between the two energy productions of related products and industries also promote the rising of the price of coal. Besides, as an important alternative energy, the dramatically decrease of coal price is unrealistic with the continuous rising oil price in recent years. The advantages and substitution effect of coal will become increasingly prominent. So the sharp rising of oil price of the world will stimulate the price of coal.

3.6 National relevant policies

China is in the stage of the system reform of the management of coal, so the impact that national relevant policies on coal price is significant. In order to reduce the relatively surplus pressure of domestic coal market through strengthen the export of coal, China made some preferential policies such as export rebates from 1999. However, since 2012, the situation of supply and demand changed in China. The demand is growing rapidly, and the supply remains tight under the case that the year-on-year reproduction growth of 15 percent. Otherwise, the policy of coal-electricity price linkage will also affect the price of coal. In all, national policies affect the price of coal in a large extent.

4 Policy Recommendations to Improve Coal Price Forming Mechanism of China

4.1 Improve the macro-regulation mechanism of coal price

Regulating operating rules of coal market and improving the market economy system of coal are the prerequisites to establish the coal price forming mechanism. The price of coal is decided by market, and the coal enterprises are the subject to fix the coal marketing price. Government should ensure the coal market is fair and open and establish the new coal price forming mechanism by law and the measure of economy and administration.

4.2 Promote the completion of the cost of coal

In recent years, China vigorously promotes the completion of the cost of coal, implement the system of compensated use of coal resource and establish of the mechanism of sustainable development of coal. Since 2009, the VAT reform of coal made the tax rate increased by 4 percentage points, and the average cost of coal increased by about 20 yuan per ton. From May 1, 2009, margin system of environmental recovery was fully established, and the average pays about 10 yuan per ton. Governments in major coal-producing regions have imposed price regulation fund and other administrative fees, and the cost of coal rises sharply.

4.3 Accelerate tax reform of coal enterprises

The reform and improvement of the tax system of coal resource should be in accordance to the need of sustainable development and unify the tax and fee of mineral resources, and then divide by the central government. This part of fee reflects the paid use of coal resource. And the rate of mineral resources tax should link with the improvement of the rate of recovery of efficiency of resource utilization, and the sustainable development fund of coal and environmental recovery margin should unify. All above are in order to promote the healthy development of coal industry and reduce the heavy tax burden on coal enterprises ^[5].

4.4 Promote the supporting reform of trading mode of coal

Continue to promote the reform of the coal trading, accelerate the establishment of the modern system

of coal market which taking the national coal-trading center as the lead and the regional markets as supplement. Accelerate the construction of the national coal-trading center and build daily trading platform of coal to achieve the reasonable link of annual ordering and daily transactions of coal [6].

5 Conclusion

Coal price is affected by many factors, and they often affect coal price by affecting the cost of coal and the supply-demand relationship. As the main energy of China, the fluctuation of the price of coal has great influence on the development of economy. Accordingly, paying attention to the changes of these factors is crucial for the reform of energy management system and energy price forming mechanism.

Acknowledgement:

This research is supported by the Fundamental Research Funds for the Central Universities (No. B11JB00230).

References

- [1]. Pu Hongjiu. Complete the Coal Price Forming Mechanism to Promote the Sustainable Development of Coal Industry. *Coal Enterprise Management*. 2005 (4): 6-7 (in Chinese)
- [2]. Xia Xueying. Analysis on the Reform and Effects of the Coal Price Forming Mechanism. *Coal Economic Research*. 2011 (4): 21-27 (in Chinese)
- [3]. Su Ligong. Discussion on Tax System Reform of Coal Enterprise. *Coal Economic Research*. 2013 (8): 8-11 (in Chinese)
- [4]. Li Ming, Lv Xuhua. A Coal Price Forecast Model and its Application. *J. of Wuhan Uni. of Sci. & Tech (Natural Science Edition)*. 2007 (4): 434-437 (in Chinese)
- [5]. Li Min, Ji Changsheng. An Analysis of the Current System of China's Coal Resource Tax and Fee [J]. *Journal of Huaiyin Institute of Technology*. 2012 (01): 73-76 (in Chinese)
- [6]. Jiang Zhimin. On the Establishment of China's Coal Price Determining Mechanism. *China Coal*. 2009 (10): 5-8 (in Chinese)