

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

## Resources Policy

journal homepage: [www.elsevier.com/locate/resourpol](http://www.elsevier.com/locate/resourpol)

# Business model for transforming a coal mining asset into a rent generating resource: A study under multiple strategic frameworks

Sanjeev K. Prasad\*

Research Scholar, XLRI, Jamshedpur, India

## 1. Introduction

Energy consumption is increasing continuously, and coal remains a primary source of fuel. With increasing populations and high growth rates in countries such as Brazil, Russia, India, China, and other emerging economies, energy consumption per capita will increase in the near future, and this will translate into higher energy consumption.

Oil, gas, and coal are the primary sources of energy across the globe, and a comparison of their estimated time left until depletion indicates that coal will continue to dominate this cluster for more than 100 years at present production levels. Global estimates of over 847 billion tons suggest that there is enough coal to meet demand for around 119 years, whereas oil and gas reserves are expected to last around only 46 and 63 years, respectively, at current production levels. Furthermore, the abundance of coal and its lower price as compared to oil will continue to make it the most sought-after fuel.

The US, the Russian Federation, China, Australia, India, and South Africa have major coal reserves. There are a number of other countries in which adequate coal resources are available, but they require additional investments in terms of exploration to convert these into economically extractable reserves. Many power-producing companies will consider acquiring assets in these regions for two main reasons: (i) the security of the raw material and (ii) the mitigation of coal-price volatility risk. Furthermore, there is also an underlying assumption that coal prices will be rising at a faster rate than electricity prices; therefore, an explored coal resource may have inherent value that is not adequately understood by the market. A coal resource's value is also expected to significantly increase in the later stages of development, when necessary regulatory clearances are obtained to enter the production stage, because coal mining is highly regulated industry. Thus, the acquisition of thermal coal assets may allow firms to generate economic rents in the short-to-medium term.

The article considers the above-mentioned coal-resource-acquisition scenario, primarily in developing and underdeveloped economies, against the conceptual background of major theoretical management frameworks, i.e., economic rent, Porter's Five Forces Model, the resource-based view, and the institution-based view, and their strategic implications for firms in implementing a business model with the

acquisition of coal mining assets.

The remainder of the paper is organized as follows. [Section 2](#) deals with the economic rationale behind the acquisition of coal mining assets within the framework of the economic rent and scarcity index concepts. [Sections 3–5](#) assess the suitability of Porter's Five Forces Model, the resource-based view, and the institution-based view when evaluating the rent-generating ability of a coal-bearing mineral deposit for a firm. [Section 6](#) assesses its strategic implication for the firm acquiring the asset, and [Section 7](#) provides concluding remarks.

## 2. Economic rationale

### 2.1. Economic rent

The concept of economic rent refers to excess returns on resources that are in limited supply, and it includes all payments above the minimum level required to make the resource accessible for use, especially if that resource exists in a relatively limited quantity. Thus, the source of economic rent is scarcity, either in physical terms (e.g., land, minerals, unique equipment, etc.) or in intangible terms (e.g., unique talent, information, patents, culture, etc.) ([Schoemaker, 1990](#)).

There are two point of views regarding whether systematic rents (i.e., above-average returns) are possible and, if so, how. Efficient-market economists believe economic rents are largely random in nature. This means that real or latent competition will force the rent to become zero subject to relatively free entry into and exit from markets. Thus, in a way, this view agrees that excess economic returns can be generated due to the scarcity of physical or intangible resources but holds that these will not remain sustainable in the long term. However, in cases in which there is very restricted or no competition due to factors such as specific regulations, patents, trademarks, contracts, or property rights, this theory will not remain valid.

The above theory agrees that in the short-to-medium term, there is a possibility of generating economic rent from a scarce resource. Therefore, a firm will harness excess returns if coal mining resources are scarce commodities. Furthermore, exceptions to the above theory, such as restricted competition and limited property rights, also exist for most of coal mines in developing countries.

\* Correspondence address: Flat No 507, Block-A, Mythri's The Town, Shaili Garden, Yaprul, Secunderabad 500087, India.  
E-mail address: [sanjeev.prasad@gmail.com](mailto:sanjeev.prasad@gmail.com).

<https://doi.org/10.1016/j.resourpol.2017.11.014>

Received 24 May 2017; Received in revised form 26 November 2017; Accepted 28 November 2017  
0301-4207/ © 2017 Elsevier Ltd. All rights reserved.

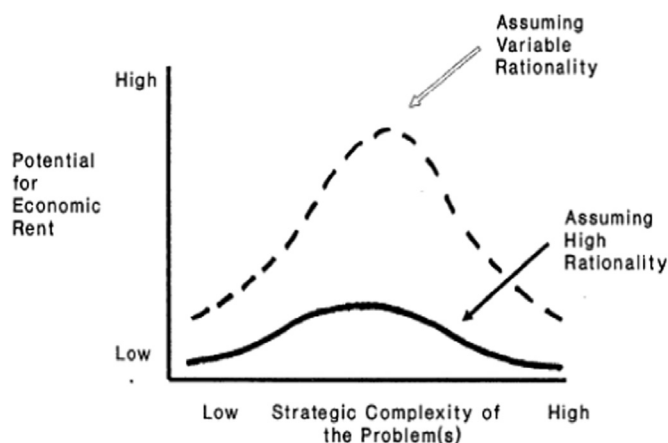


Fig. 1. Interactions between strategy, complexity and economic rents.

An alternative view believes in the possibility of systematic long-term rent creation, and typical examples mentioned are the Hudson's Bay Company, the East-Indies company, South Africa's De Beers' diamond cartel, and OPEC. Critics generally hold that these rent streams were mostly accidental in nature and originated due to granted privileges or other non-competitive circumstances. However, the coal mining industry is generally a highly regulated industry with non-competitive circumstances created by government policies and coal mining rights being granted as a privilege by governments. These circumstances do create an environment allowing systematic economic rent generation for firms in many countries.

Schoemaker (1920) mentions that strategy, complexity, and economic rents are closely linked, and the basic framework describing their interactions are depicted in Fig. 1.

Strategy is the means by that a firm earns economic rent, either by taking advantage of existing imperfections or by creating appropriate levels of uncertainty and complexity. However, we must also acknowledge other factors, such as bounded rationality, asymmetry in skills and resources, environmental instability, the importance of history and culture, and the existence of significant transaction costs; these factors, in their own way, constitute types of complexity that can only be partly captured or optimized.

The above inference reinforces the notion that if coal mines are a scarce resource and there is a medium level of strategic complexity associated with them, there will be potential for medium to high economic rent.

### 2.2. Scarcity of coal resources

Natural resource scarcity is studied using cost-price indicators, and though a variety of scarcity indicators have been proposed and evaluated, the dominant approach has been to examine the historical behaviour of deflated prices for natural resource commodities, with the resource scarcity hypothesis (RSH) being supported or rejected on the basis of the observed time trends in the deflated prices series). The best known proposition is the 'U-shaped' hypothesis, introduced by Slade (1982), which claims that many deflated resource commodity prices initially decrease and then rise. This structure is usually attributed to the dominance of resource discoveries and/or improvements in yield over resource exhaustion in the initial phase, followed by the dominance of depletion over extraction costs during later periods (Moazzami and Anderson, 1994).

Slade's results support the presence of U-shaped behaviour in real resource commodity prices for aluminium, copper, iron, silver, zinc, coal, and gas.

Moazzami and Anderson's (1994) 'error-correction approach' also supported the U-shaped hypothesis for all of these resource prices,

except coal, for which a linear trend relationship was supported, implying scarcity for all these resources. Therefore, as per the available literature, there is strong evidence supporting the notion that coal, as resource, exhibits scarcity properties.

Considering that coal exhibits scarcity properties and coal resources are exhaustible, the economic rationale supports the ability of coal mines to generate economic rents, i.e., superior and excessive returns. Thus, firms acquiring coal mining assets have the potential to generate the economic rents from them in the medium term.

### 3. Porter's five forces model for the coal mining industry

Porter's (1980); Porter (1985, 1990, 1991) competitive strategy framework espouses a specific viewpoint regarding market structure and its effect on performance. Within this framework, a firm's capability to generate rents is highly dependent on the comparative strengths of the competitive forces encountered by the firm. Therefore, Porter's framework is an important tool for use in assessing whether an industry structure is attractive enough to earn an economic rent for a firm.

Countries either award coal mining rights as standalone rights or group them with the domestic electricity industry, and therefore, when evaluating attractiveness to the coal mining industry, both these industries, i.e., coal mining and electricity, must be evaluated.

Government regulations are the most significant competitive force that regulates the electricity industry and the coal mining industry. Overall, it is the regulator, through the power mandated by the government, which decides the fair rate of return for a utility to earn, the pricing that a utility charges to consumer, exclusive rights to serve a geographical territory with limited or no threat of competition, etc. Similarly, the coal mining industry is highly regulated industry with various policies affecting the industrial environment, such as free sweat equity to disadvantaged groups of people (minimum 26% of equity designated for historically disadvantaged people in South Africa), restrictions on the export of coal above a certain quality in Indonesia, mandated captive and domestic consumption in India, and windfall gains taxation in Australia.

A careful review of Porter's Five Forces that shape an industry, including the risk of entry by competitors or newcomers, the threat of substitutes, the bargaining power of the suppliers/buyers, and rivalries between firms, suggests a very different perspective on regulated businesses, such as electricity and coal mining, as compared to the conventional wisdom.

#### 3.1. Risk of entry by competitors or newcomers

Overall, the risk of entry by competitors or newcomers in either industry is low because there is a very high cost for entry into coal mining or coal-based electricity generation. The high cost is coupled with issues such as existing power producers' geographic control over transmission and distribution systems and resources in their respective service territories, as well as existing miners' control over the logistics infrastructure for coal transportation. These barriers provide a substantial competitive advantage to existing companies as compared to new entrants.

When existing electricity companies also own the majority of transmission and distribution systems, the new entrants will be forced to use the assets owned by them, and similarly, new coal miners will be forced to use the logistics infrastructure (rails, roads, or port terminals) owned by the existing players. Therefore, it will be very difficult for new entrants to offer competitive rates to consumers when using the assets of established firms. New entrants will be willing to provide competitive rates, but in reality, they will have to provide a portion of the rate charged to the firms owning the above-mentioned assets. The new entrant may be able to successfully counter the control of existing firms, but it will need very large upfront investments, and the very high cost of electricity generation is still an issue that is considerably

Download English Version:

<https://daneshyari.com/en/article/7387606>

Download Persian Version:

<https://daneshyari.com/article/7387606>

[Daneshyari.com](https://daneshyari.com)