

CONGLOMERATES AND ECONOMIC CALCULATION

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Using Mises's concept of economic calculation, this paper explains why conglomerates are frequently observed in emerging economies across the world. It also addresses the issue of why conglomerates take the form of either the multidivisional diversified single firm or the diversified business group. Here diversified business group is defined as an organizational form of production structure in which the parent company effectively owns and controls its affiliates whereas they maintain legal and accounting independence to a significant degree. We refer to this diversified business group as Conglomerate 1 in order to distinguish it from the multidivisional diversified single firm, named here Conglomerate 2. Both types of conglomerates exist along a continuum, from highly centralized to highly decentralized ones.¹ That is, the affiliates of Conglomerate 1 and the divisions of Conglomerate 2 may be centralized or decentralized to varying degrees.

We claim that conglomerates are created to solve the problem of economic calculation in emerging economies where markets are undeveloped or poorly developed. That is, they emerge as a production structure to overcome market imperfections, thereby reducing economic calculation costs. And the country's specific legal and political factors and regulations surrounding the business environments will determine the type of organizational form.

There are many theoretical studies on the reasons for the existence of conglomerates. Pankaj and Khanna (1998) neatly summarized the literature on the emergence of conglomerates. Khanna and Palepu (1999), among others,

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¹We thank an anonymous referee for this point.

showed that conglomerates substitute for the institutions that support effective markets in capital, labor, and goods and services. Therefore, this study recasts their conception of market imperfections into the problem of economic calculation in explaining the existence of conglomerates in emerging economies.

The paper is organized as follows. Section I defines the conglomerate as a production structure, and characterizes its features. Section II presents the reasons for the existence of conglomerates, especially in emerging economies. It shows that the problem of economic calculation is a stumbling block in less developed countries, and a conglomerate is institutionalized to overcome this calculation problem. It also explains the emergence of a specific type of conglomerate, focusing on the case of Korea. Section III summarizes the advantages and disadvantages of conglomerates relative to stand-alone firms, and some concluding remarks are offered in the final section.

CONGLOMERATE AS A PRODUCTION STRUCTURE

There are various production structures in an economy, which range from the market to a single independent enterprise. Long-term contract and subcontracting among firms are a production structure that lies in between the market and a stand-alone business enterprise. A conglomerate, whether it is the multidivisional single firm or the diversified group, is a more highly integrated one than the long-term contract and subcontracting. The production structures in an economy, therefore, could be arranged in a row from the market as the least integrated one, long-term contract, subcontracting, multidivisional diversified single firm/diversified business group, to a single independent firm as the most integrated one.

Conglomerates dominate the private sectors of most of the emerging economies. They abound in many countries such as Belgium, India, Indonesia, France, Hong Kong, Japan, Korea, Nicaragua, Pakistan, Philippines, Russia, Taiwan, Thailand, and so on.² Pankaj and Khanna (1998) reviewed the literature on the reasons for the existence of conglomerates in terms of (1) multimarket power, (2) related resources, (3) informational imperfections and entrepreneurial scarcity, and (4) policy distortions. They claimed that their case studies of the responses of two leading Indian conglomerates to the country's competitive shocks are in general consistent with a policy distortion view for the existence of business groups. In this study, however, we explain the reasons for the existence of conglomerates in terms of calculation problems resulting from market imperfections.

Some conglomerates are highly diversified across a wide line of business with many affiliated firms that maintain legal and accounting independence. They are predominantly owned and controlled by members of a family, and

²See Pankaj and Khanna (1998) for the list of the countries, though not comprehensive.

financially interlocked.³ Other conglomerates are also highly diversified across a wide line of business, but take the form of a multidivisional single firm. Concentrating on the issue of diversification, however, most previous studies did not articulate why a diversified business unit takes an organizational form of the multidivisional single firm or the diversified group. Unlike them, we also address this issue.⁴

There are two ways of creating a conglomerate. One way is that the parent company founds its divisions or affiliates in new markets through internal growth, and the other way to establish it is through the merger and acquisition of existing firms.⁵ We primarily focus on the first type of conglomerate and treat the latter secondarily.

A THEORY OF CONGLOMERATES

1. Business Environments in Emerging Economies

Despite the low standard of living, a relatively large demand exists for consumer goods in emerging economies. However, the markets are poorly developed at best, especially at the early stage of development, which makes production of goods and services through market transactions highly costly. Therefore, some entrepreneurs will find many potential opportunities to earn profits by establishing firms. At the initial stage, firms will be small. However, some of them will grow rapidly, accumulating a significant amount of financial capital on the availability of which the existing economic opportunities placed a premium.

As Papanek (1972) indicated, one crucial aspect of the growth of emerging economies as well as of the major firms that emerged is entrepreneurship of a vigorous, aggressive, and manipulative sort, which is characteristic of the initial phase of a private-enterprise economy.⁶ This implies that some

³The outside experts and advisors have criticized this kind of extensive diversification and family ownership. For example, Korea's business groups, so-called *Chaebols*, were criticized as the culprit of the economic crisis of 1997, which, of course, is not based on sound theoretical and empirical grounds. Also, the executives of India's *Tata* group were recently advised by outside experts to concentrate on a few strong areas instead of extensive diversification. However, the executives determined to further diversify for several reasons.

⁴Leibenstein (1968), for example, pointed out that the entrepreneurs in the developing countries play a role as intermarket operators. However, his argument could not answer the question as to how the entrepreneurs in less developed countries make use of the multidivisional single firm and the diversified business group differently.

⁵The typical example of the former is the "Hyundai" group, and of the latter is the "Daewoo" group in Korea.

⁶For example, the representative entrepreneur in Korea, Byung-Cheol Lee, the founder of the "Samsung" group, could find great business opportunities in various unrelated industries.

entrepreneurs have a strong incentive to establish a conglomerate. That is, as Garbor and Pearce (1952) pointed out, to maximize the net marginal return on capital, entrepreneurs are inclined to set up new firms in the same industry or to diversify into a new industry instead of increasing output until net marginal returns fall to zero by producing a single output. This also corresponds to Alchian and Demsetz's (1972) argument that conglomerates can be interpreted as an investment trust or investment diversification device.

In the process of forming a conglomerate, the internal capital market plays an important role in raising investment funds and allocating them to the efficient divisions or the affiliates.⁷ At the early stage of industrial development, external capital markets are not well enough developed to raise enough financial capital to invest and do not function well in allocating it more efficiently than the internal capital markets (see, among others, Bhidé 1990; Gertner, Scharfstein and Stein 1994; Stein 1997; Williamson 1975). Klein (2001) demonstrated that conglomerate diversification might have added value by creating internal capital markets. Given that entrepreneurs could take advantage of internal capital markets in raising funds for diversified investment, the question as to what type of production structure they would form still remains.

2. The Economic Calculation Problem

As Mises pointed out, every human action implies planning. And any planning needs economic calculation. Likewise, every organization plans and calculates. It needs price information, or market information for economic calculation. Without markets, no one can obtain market information, without which economic calculation is impossible or inaccurate. In this section, we show that the calculation problem would encourage the entrepreneurs in emerging economies to establish conglomerates.

Transaction cost and calculation cost

The Coasean (1937) theory of the firm suggests that it is profitable to establish a firm since there exists a cost of using the price mechanism. It implies that a firm is established to reduce the costs of making products through market transactions. Here the market transaction costs refer to those that a firm encounters in discovering the relevant market prices, and in negotiating and concluding a separate contract for each exchange transaction taking place on the market, and so on. By forming a firm, an entrepreneur who directs resource allocation within the firm can save certain market transaction costs. Because internal transaction costs increase as more and more market transactions are internalized into the firm, the entrepreneur decides whether a particular transaction should be done on the market or within the firm by

⁷In addition, poor development of commodity and labor markets also contributes to the emergence of conglomerates in emerging economies. See Khanna and Palepu (2000) on this point.

weighing the market transaction costs against internal transaction costs. Therefore, a firm would grow until the marginal cost of a market transaction equals that of an internal transaction. That is, an optimum amount of planning exists within a firm.

Mises (1975 and 1996) showed in the calculation debate that socialism eventually breaks down primarily because of lack of price information on the means of production while the incentive system is also problematic. He argued that without private ownership of factors of production, especially capital goods, their market prices could not be available. Therefore, no decision-maker can evaluate the relative efficiency of various production techniques. Even the most dedicated entrepreneur cannot make judgments about the relative efficiency in allocating factors of production without market prices of capital goods even if he possesses all the information on consumer wants and preferences, state of technology, and so on. Consequently, Mises did not buy the “knowledge problem” raised by Hayek, and dismissed the possibility of market socialism that Lange (1936 and 1937) asserted. Mises suggested that socialism survived for quite a long while because it could use the market information of the capitalist economies.

Rothbard (1993, pp. 528-50, 573-79, 585-86) insisted that the calculation problem exists not only in a socialist economy but also in the determination of the size of the firm. He argued that external markets for intermediate goods or productive inputs are required for economic calculation of profit and loss of each stage. Rothbard put the costs of economic calculation as follows. “As the area of incalculability increases, the degrees of irrationality, misallocation, loss, impoverishment, etc., become greater” (Rothbard 1993, p. 548).

Rothbard claimed that the calculation costs play an important role in determining the upper bound of the firm size. As more and more market transactions are internalized into the firm, certain factor markets would gradually disappear. Thus, the firm will face the calculation problem since it cannot obtain market prices of those factors. Consequently, the firm cannot grow so that it reaches one big firm or one big cartel. This argument is a modified firm theory that can apply to a situation where markets are nonexistent or poorly developed, and complements the Coasian firm theory that well suits the situation in which markets are fully developed. In this connection, Rothbard (1976, p. 76) wrote:

This point also serves to extend the notable analysis of Professor Coase on the market determinants of the size of the firm, or of the relative extent of corporate planning within the firm as against the use of exchange and the price mechanism. Coase pointed out that there are diminishing benefits and increasing costs to each of these two alternatives, resulting, as he put it, in an “‘optimum’ amount of planning” in the free market system. Our thesis adds that the costs of internal corporate planning become prohibitive as soon as markets for capital goods begin to disappear, so that the free-market optimum will always stop well short not only of One Big Firm throughout the world market but also of *any* disappearance of

specific markets and hence of economic calculation in that product or resource.

Klein (1996) reviewed the literature on the calculation problem of Rothbard and pointed out that the theory of the firm suggested by Rothbard has long been neglected by academics.

To summarize, Coasian theory of the firm implicitly assumes that a firm can obtain all necessary price information on goods and services and factors of production on the market whereas Rothbard pointed out that this might not always be possible. It implies that Coase did not take into account the calculation costs resulting from the absence of factor markets. If markets are well developed, therefore, the firm size will be determined by the marginal cost of market and internal transaction with negligible calculation cost. However, as factor markets begin to disappear, three kinds of cost will increase, but in different fashion and degree. Consequently, the size of the firm will be determined at a point where the marginal cost of a market transaction is equal to the sum of a marginal cost of an internal transaction and the calculation cost. Based on this concept, we explain why conglomerates are established in emerging markets.

Calculation cost for diversified business unit in emerging markets

A conglomerate, whether it is the multidivisional single firm or the diversified business group, is not an exception to the problem of economic calculation. In fact, capital goods markets as well as other factor markets are poorly developed in emerging economies.⁸ Let us examine a hypothetical example to help understand the problem of economic calculation. We note that the very basic idea of the example comes from Klein (1999, p. 27). Suppose that an entrepreneur owns and manages Firm A of which line of business is construction. And suppose that he discovers a new business opportunity, ship-building (Project B) for example, and potential demand for ships and the related factors is expected to be high.

If the market for ships and the factors of production were well developed, there would be no problem in internalizing the project into a division of a highly centralized single firm. No calculation problem would occur. On the other hand, if the markets are not well developed, a calculation problem occurs. Suppose that the founder-owner employs himself as the top manager of Project B, his opportunity cost of engaging in Project B cannot be precisely figured out since the market for managers is undeveloped. Without reference prices from the markets of factors of production, as Garbor (1984) and Eccles and White (1988) suggested, there might be two ways to estimate the opportunity cost. First, their transfer prices at each stage might be cost-plus basis.

⁸Koo (1993, pp. 31-32, 37), the former head of the "LG" group, has recalled that the markets for many final goods and productive inputs were nonexistent or poorly developed in the early development stage in Korea.

Second, it might be determined according to the bargaining power of the selling and buying divisions at the adjacent stages. However, the estimated costs would be less accurate than the ones available from the market. This makes the economic calculation inaccurate, thereby resulting in lower organizational efficiency. Consequently, the entrepreneur-founder in emerging economies, though not perfect, could solve the calculation problem by internalizing Project B into a division of a single firm, each division having its own board of directors (Conglomerate 2). The divisions of a diversified single firm act as if they are external markets to one another and generate market information that can be used in the economic calculation of each division.

The second way for the entrepreneur-founder to solve the calculation problem is to establish new affiliates that are owned and effectively controlled by their parent company whereas the affiliates maintain legal and accounting independence to a significant degree, resulting in a diversified business group. The affiliates of a diversified business group may be highly or loosely centralized. In any case, the affiliates of a group, like the divisions of a diversified single firm each having its own profit center, act as if they are external markets to one another and generate market information.

In sum, there are two ways of solving the problem of economic calculation: a diversified single firm with multidivisions each having its own board of directors, and a diversified business group with affiliates maintaining legal and accounting independence. Although both organizations face some difficulties of economic calculation, they emerge as a vehicle of minimizing calculation cost.

Then a question arises as to why conglomerates develop through merger and acquisition and buyout of the existing firms, like the “Daewoo” group in Korea. The fact that there are existing firms might suggest that the external markets for factors of production have somewhat developed. But the factor markets are thin in that most of them are poorly developed with some markets for final goods being present. Under such circumstances, calculation costs still exist and are high. Thus the entrepreneur establishes a conglomerate in order to reduce the calculation costs.⁹ In addition, a conglomerate is needed to compete with other conglomerates. That is, a conglomerate causes other conglomerates to develop.¹⁰

The last question to be answered is why some conglomerates take the form of a multidivisional single firm while others take the form of a diversified business group. As a referee pointed out, we claim that it depends upon

⁹In this connection, we conjecture that vertical and horizontal integration would occur if an increase in the sum of the internal transaction cost and calculation cost when integrated is less than the market transaction cost. Vertical and horizontal integration means disappearance of the related factor markets, which increases the costs of economic calculation.

¹⁰For example, large groups in Korea have competed for a long time in almost every industry.

the country's specific legal and political factors and regulations surrounding business environments. In Korea, almost all conglomerates choose the diversified business group rather than the multidivisional single firm. That is, conglomerates in Korea diversify their line of business through affiliate expansion rather than divisional expansion. Hwang (2001, pp. 5-6) claimed that affiliate expansion helps the entrepreneurs to diversify because cross-equity investment allows them to obtain external funds. In fact, capital markets in Korea had been poorly developed and access to external funds had been limited. Affiliate expansion was a more efficient way for the diversified business units to increase their investment through cross-equity investment. Also, financial intermediaries required borrowers to guarantee their debts. Cross-debt guarantees between affiliated firms within a group had been a convenient way to conform to such implicit regulation. Thus we claim that the entrepreneurs used group-affiliated firms to expand their business to unrelated areas.

Moreover, allocation of indivisible inputs across divisions in a single diversified business firm may be problematic, but not with the affiliated firms. Calculation of overhead costs such as those for water, electricity, land, building, machines for general purposes, and administrative personnel, would be imprecise even if the market prices of those inputs were available. However, such a calculation problem will be easily overcome with the diversified business group.

THE ADVANTAGES AND DISADVANTAGES OF CONGLOMERATES

Once a conglomerate is established, its affiliates or divisions are able to grow faster than unaffiliated firms. One obvious advantage is that conglomerates are able to accumulate know-how in saving calculation costs more than unaffiliated firms. Therefore, affiliates or divisions have a comparative advantage over stand-alone firms in economic calculation. In addition, group affiliates or divisions could enjoy the benefits of a conglomerate merger. Bork (1978, p. 249) summarized the various reasons for the benefits of a conglomerate merger. Also, as Marvel (1990) demonstrated, affiliated firms benefit from sharing information about foreign markets, thereby having a comparative advantage in foreign business.

Khanna and Palepu (1999, p. 133) reported that the average return on assets for group-affiliated firms was higher than that of unaffiliated firms over the most part of the last decade in Chile. Also group affiliates outperformed unaffiliated firms in Korea. Lee and Yoo (1994) found that, at manufacturing firm level, average gross sales revenue per person of affiliated firms was higher than that of unaffiliated firms in 1988. Also, the average value added per person of affiliated firms was greater than that of unaffiliated firms. Gong (1993a) presented a similar result to Lee and Yoo. The higher productivity of affiliates is reflected in their high growth rates. Gong (1993b, p. 76) showed that, in 1965, 87 unaffiliated firms and 13 affiliated firms with business groups were included in the largest 100 firms in Korea. In 1991, however, 79

affiliated firms and 21 unaffiliated firms were included. Moreover, Chang and Choi (1988) provided the evidence that affiliated firms could enjoy more scale and scope economies than unaffiliated firms.

Finally, the difference in productivity between affiliated and unaffiliated firms might be negligible or not large at the beginning stage of forming a business group. However, efficiency of the affiliates would be enhanced as soon as diversification exceeds a certain level. Khanna and Palepu (2000) provided evidence from India that accounting and stock market measures of affiliated firms' performance initially declined with group diversification, but subsequently increased once diversification exceeds a certain level. These empirical findings show comparative advantages of affiliated firms over unaffiliated firms.

On the other hand, there are some reasons that conglomeration may give rise to costs. First, interests of the controlling family shareholders may not conform to those of minority shareholders. Second, common family ownership may result in the misallocation of capital. Third, conglomerates may employ inefficient compensation schemes across the affiliates or divisions for internal equity reasons. Fourth, the headquarter of a conglomerate may also make suboptimal decisions because it may face the difficulty of acquiring expertise in various unrelated areas. Finally, rent seeking by divisional managers (Scharfstein and Stein 2000), bargaining problems within the group (Rajan, Servaes, and Zingales 2000) or bureaucratic rigidity (Shin and Stulz 1998) can make cross-subsidization among the affiliates or divisions of a conglomerate inefficient. All in all, the existence of conglomerates in emerging economies should suggest that the benefits exceed the costs of forming conglomerates.

CONCLUDING REMARKS

Using both the transaction costs of Coase and calculation costs of Mises and Rothbard, this study explains why conglomerates have developed as a production structure in emerging economies. Coase showed that a firm is established to economize market transaction costs. But Rothbard claimed that market information may not always be readily available, thus the cost of economic calculation determines the upper bound of the firm. We claim that conglomerates are created as an efficient organizational form to solve the problem of economic calculation in emerging economies where external markets for productive factors are poorly developed. That is, conglomerates originate as an organizational form of production structure to overcome market imperfections. And the country's specific institutional and political factors and business regulations will determine the specific form of the conglomerates: the multidivisional single firm or the diversified business group.

An important policy implication of the present study is derived as follows. The importance of conglomerates will diminish as the markets for factors of production are more and more developed so that calculation costs are

significantly lowered or eliminated. However, it would take a long time for the markets of final goods and factors of production to develop in any economy. Chandler (1977) reported that, in the United States, modern business enterprises evolved from their traditional form to the current one over the period 1840–1920. The history of business enterprise is relatively short in emerging economies, mostly less than 50 years. Thus, under current economic environments where factor markets are still developing, forced restructuring of the conglomerates by the government makes the production structure inefficient and blocks their evolution in the market. If conglomerates seem to be problematic for socio-political reasons, the best way for the government to resolve it is to establish infrastructures such as a legal system so that the markets can develop in their own way.

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