

Please read the following article\* and answer questions.

1. Please discuss the concepts of "small-number conditions" (15%) and "information asymmetry." (15%)
2. Supposed there is a Taiwan firm plan to invest in Mainland China, what would you suggest for its backward integration? (20%)

\*The article is cited from Hennart, Jean-Francois, 1990, "The Transaction Cost Theory of the Multinational Enterprise," in Christos N. Pitelis and Roger Sugden (eds.), The Nature of the Transnational Firm, New York, Routledge, pp. 89-92.

#### *Vertical investments*

##### *Backward integration*

One early and persistent type of FDI has been that undertaken by firms based in developed countries to obtain minerals and agricultural products necessary for their downstream activities. The investments of integrated oil companies into the extraction of crude oil, those of steel firms in iron ore, and those of rubber manufacturers into natural rubber plantations are but a few examples (Wilkins, 1970, 1974). Transaction cost theory suggests that such 'backward integration' will be chosen whenever markets for raw materials and intermediate inputs are characterized by high transaction costs. These costs arise when (1) the number of parties to the exchange is small (small-number conditions) or (2) when parties differ in the amount of information they have on the transaction (information asymmetry).

*Small-number conditions.* Small-number conditions result from economies of scale, from high transport costs, and from the presence of physical asset specificity. Asset specificity arises when one or both parties to the transaction invest in equipment specially designed to carry out the transaction, and which has lower value in other uses (Williamson, 1985). When these conditions are present, spot markets are likely to fail, because a party making transaction-specific investments, and for whom the costs of switching partners are consequently high, will fear that the more flexible party will opportunistically renegotiate the terms of trade. One possible way for parties to protect themselves is to write a contract fixing the terms and conditions of the trade over a period of time corresponding to the life of the plant. However this approach generally fails when the environment is uncertain, for reasons developed below (pp. 101-2). Vertical integration will then be desirable, because it transforms one of the parties into an employee of the other. As an employee the erstwhile trader is no longer rewarded for his opportunism but instead for obeying the directives of his boss. Vertical integration makes it possible to reduce opportunism by aligning the incentives of both parties (Williamson, 1979).

(本試題共4頁, 第2頁)

- 考生注意: 1. 依次序作答, 只要標明題號, 不必抄題。  
 2. 答案必須寫在答案卷上, 否則不予計分。  
 3. 試題隨卷繳回。

This theoretical framework provides a convincing explanation of the pattern of vertical integration found in many domestic industries, for example that between coal mines and electric power plants (Joskow, 1985), between automobile assemblers and parts manufacturers (Monteverde and Teece, 1982; Walker and Weber, 1984), between aerospace firms and their component suppliers (Masten, 1984), and between wood processing and timber growing (Globerman and Schwindt, 1986). The same logic can be applied to foreign backward investments, since they are vertical investments that cross borders.

The aluminium industry provides an interesting example. There are three stages in the production of aluminium: bauxite is mined; then shipped to alumina plants, where it is refined into alumina, and alumina is then smelted into aluminium in smelters. About 90 per cent of the total volume of bauxite shipments in the free world consists of intra-firm transfers. The

reason is that most buyers of bauxite find themselves facing a small number of potential sellers, and vice versa, a result of high economies of scale and barriers to entry at both the mining and the refining stages, and of high asset specificity in bauxite refining. The high degree of asset specificity derives from cost savings that can be obtained when refineries are built to process a single type of bauxite. Since bauxites are heterogeneous, each refinery must obtain its bauxite from one or a small number of mines, and switching costs are high. To organize such a bilateral relationship through spot markets would be hazardous, because, after investments have been made, the owner of the mine could exploit the owner of the alumina plant (or vice versa) by unilaterally changing the price of bauxite. Using contracts also entails serious risks, for reasons that are discussed at pp. 101-2. Vertical integration is thus the preferred solution (Stuckey, 1983).

By contrast, in the case of alluvial tin, co-ordination between stages is efficiently performed by spot markets. There is no asset specificity in the smelting of alluvial tin ores, since these ores are very homogenous (they are nearly pure tin). Tin ores are also of high value, so their transport costs are low relative to their value, and they can be transported long distances. The result is an efficient market for tin ores, eliminating the need for vertical integration between mining and smelting.<sup>8</sup> Tin ores obtained from lode mining, however, tend to carry various impurities, and the smelters handling these ores must be specifically designed to treat those impurities. Consequently, the lode sector of the tin industry is characterized by greater vertical integration (Hennart, 1986a, 1988a).

The considerations outlined above explain the need of MNEs to own suppliers of other intermediate inputs, such as parts or sub-assemblies. In most cases MNEs will own their foreign suppliers when the components they manufacture are specific to the purchaser, while independent suppliers will be used for standard parts, which are sold in a relatively broad market.<sup>9</sup>

*Information asymmetry.* Another reason for vertical backward investments is quality control. Quality control problems arise in situations of information asymmetry. If a buyer cannot distinguish *ex ante* between good and bad quality, he will tend to reduce his offer price to reflect this risk. A seller of high-quality products may not be able to persuade a buyer that the goods he offers are of high quality, and will therefore avoid the market. Markets will fail in the sense that they will be used to sell goods of increasingly lower quality (Akerlof, 1970). Hence sellers and buyers have incentives to integrate.

國立暨南國際大學九十二學年度博士班研究生入學考試試題

321 商管文獻評述〈國企所乙組適用〉

(本試題共 4 頁，第 3 頁)

考生注意：1. 依次序作答，只要標明題號，不必抄題。  
2. 答案必須寫在答案卷上，否則不予計分。  
3. 試題隨卷繳回。

The banana industry offers an interesting example of this motive for vertical integration. Bananas are certainly an unsophisticated product, so it is surprising that vertically integrated MNEs dominate their international

trade.<sup>10</sup> But bananas are highly perishable, as they spoil twenty-one days after cutting. Their quality also depends on careful handling and proper ripening conditions. Careless handling and ripening are difficult to detect *ex ante*: damage incurred at the cutting and shipping stages will be revealed only when the banana reaches the supermarket. Hence it is difficult to achieve consistent high quality if grower, shipper and distributor are separate concerns (Read, 1986; Litvak and Maule, 1977). Consistent quality is better assured by vertical integration because it reduces the incentive to cheat at each stage (Casson, 1982).

國立暨南國際大學九十二學年度博士班研究生入學考試試題

321 商學文獻評述〈國企所乙組適用〉

(本試題共 4 頁，第 4 頁)

考生注意：1. 依次序作答，只要標明題號，不必抄題。  
2. 答案必須寫在答案卷上，否則不予計分。  
3. 試題隨卷繳回。

二.

1.

The Wall Street Journal: Print versus Electronic Publishing Industry

With an editorial staff of over thousands of employees collecting, interpreting, and disseminating information around the world, the senior management of The Wall Street Journal believed that the use of electronic channel—the Internet—offered new and exciting ways to extend the information franchise both nationally and globally. By year-end 2001, the wsj.com site was averaging nearly 7,000,000 page-views a day and had registered over 20 million users, with an average user visit of approximate 37 minutes. However, the traditional channel for The Wall Street Journal's customers to access information is through a "print" form, such as newspaper. The Wall Street Journal has been a print publishing industry with a long history and customer loyalty. The full integration between print and electronic channel will form a single and seamless network. But, does the established company like The Wall Street Journal face the channel conflict when opening an additional sales channel on the Internet? The new management team has to decide how much to invest, where to invest, and how to measure the return on these two sales channels—print vs. electronic. The following questions are emerging.

1. Please evaluate the print and electronic publishing industries. How has technology altered the structure of the industry? How are the two likely to change in the future? (10%)
2. What are the core competencies and success factors needed in both environments? Can The Wall Street Journal's core competencies in print publishing be well translated into the electronic publishing industry? Do you foresee any specific problems for them? (10%)
3. As the chief executive officer of The Wall Street Journal, how would you evaluate the potential for the electronic journal to substitute or complement the print edition? Given this, how would you position, price, and promote the two editions in the short and long-term in order to maximize returns for both editions? (20%)
4. What else would you suggest to CEO of The Wall Street Journal as he moves forward? (10%)